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8. Because It Takes a Village to Fund the Answers: Crowdfunding University Research

DEB VERHOEVEN AND STUART PALMER

"The first point to emphasise is that the crowd never feels saturated".
ELIAS CANETTI, CROWDS AND POWER, 1978: 22

Introduction

Whichever way you look at it, online crowdfunding is ramifying. From its foundations supporting creative industry initiatives, crowdfunding has branched into almost every aspect of public and private enterprise. Niche crowdfunding platforms and models are burgeoning across the globe faster than you can trill "kerching". Early adopters have been quick to discover that in addition to money, they also get free market information and an opportunity to develop a relationship with their market base.

Despite these evident benefits, universities have been cautious entrants in the crowdfunding space and more generally in the emerging "collaborative economy" (Owyang, 2013). There are many cultural and institutional legacies that might explain this reluctance. For example, to date universities have achieved social (and economic) distinction through refining a set of exclusionary practices including, but not limited to, versions of gatekeeping, ranking, and credentialing. These practices are reproduced in the expected behaviours of individual academics who garner social currency and status as experts, legislators, and interpreters (Osborne, 2014: 435). Digitalization and the emergent knowledge and collaboration economies have the potential

to disrupt the academy's traditional appeals to distinction and to re-engage universities and academics with their public stakeholders. This chapter will examine some of the challenges and benefits arising from public micro-funding of university-based research initiatives during a period of industrial transition in the university sector.

Broadly, then, this chapter asks: what does scholarship mean in a digital ecosystem where sociality (rather than traditional systems for assessing academic merit) affords research opportunity and success? How might university research be rethought in a networked world where personal and professional identities are blurred? What happens when scholars adopt the same pathways as non-scholars for knowledge discovery, development, and dissemination through use of emerging practices such as crowdfunding? These issues will be discussed through detailed exploration of a successful pilot project to crowdfund university research, *Research My World*. This project, a collaboration between Deakin University and the crowdfunding platform pozible.com, set out to secure new sources of funding for the "long-tail" of academic research. More generally, it aimed to improve the digital capacity of the participating researchers and create new opportunities for public engagement for the researchers themselves as well as the university. We will examine how crowdfunding and social media platforms alter academic effort (the dis-intermediation or re-intermediation of research funding, reduction of the compliance burden, opportunities for market validation, and so on), as well as the particular workflows of scholarly researchers themselves (improvements in "digital presence-building," provision of cheap alternative funding, opportunities to crowdsource non-academic knowledge).

In addressing these questions, this chapter will explore the influence that crowdfunding campaigns have for transforming contemporary academic practices across a range of disciplinary instances, providing the basis for a new form of engagement-led research. To support our analysis we will provide an overview of the initiative through quantitative analysis of a dataset generated by the first iteration of *Research My World* projects.

Crowdfunding University Research

Traditionally, the main source of funding for university research comes from either private (both philanthropic and commercial) or government grants. Typically the application process for these grants is labour intensive and carries a high compliance burden. This in turn inflates the cost of the research grant to both the university and the research team. Grant schemes are usually highly competitive with low success rates (in Australia government research grants are given to less than 20% of the applicants), favour experienced or

senior researchers, and take considerable time to be processed thereby delaying potential discoveries. The barriers are particularly high for early career scholars who are nevertheless under significant pressure to produce a successful research profile in order to secure employment.

In December 2012 pozible.com (currently the world's third largest crowdfunding platform) and Deakin University agreed to create an opportunity for the community funding of university research. Adopting an "all or nothing" strategy for crowdfunding, *Research My World* launched to the public in May 2013 with eight projects spanning a range of discipline areas and project types. Subsequent campaign rounds occurred in September 2013 and April 2014 and the programme was expanded to include research bids from other universities and research centres.

Although it is very early days, the crowdfunding engagements that have arisen within the university sector itself are typically based on one of three models:

1. Student Incubators. These initiatives typically focus on graduates in business-related disciplines and are intended to drive the development of entrepreneurial opportunities for students. Typically these efforts have been generated by the university's enterprise division. Examples of this foray into crowdfunding can be found at Trinity College, Dublin, at the University of Vermont's Start programme and at Georgia Tech's Starter initiative.

2. University-level Fundraising Programmes. In this model universities use existing philanthropic networks (particularly those derived from alumni projects) to channel donations through an internally administered crowdfunding platform. To date this activity is typically driven by a university's advancement division. Notable early adopters deploying this strategy to specifically support research include the Georgia Institute of Technology, University of California (San Francisco) and the University of Virginia's USEED initiative. In the UK, Hubbub offers a purpose built social funding service to universities, colleges, schools, and their students and staff. Hubbub works principally through the existing mechanisms within universities designed to bolster philanthropic activity ("advancement") or entrepreneurship ("enterprise").

3. Disaggregated Crowdfunding Effort. This is by far the most common form of university crowdfunding in which students and staff seek crowdfunding opportunities using external platforms. Within this model, several different options for crowdfunding research have emerged. Platforms such as Microryza, RocketHub, Experiment.com, and Petridish have recently emerged to specifically support STEM

research. Another early site devoted to science fundraising, Geek-Funder, has already closed. Generally these sites are also limited to dealing with research at the project level rather than forming institutional or sectoral partnerships. As a result the net benefits of these sites are correspondingly reduced.

In this context, Deakin University's foray into crowdfunding was unique on several counts. First, it emerged from the university's research portfolio rather than its advancement or enterprise divisions, although these were active participants throughout. Second, the university chose not to develop its own platform or host one on its own website but to "follow the crowd" by forging a formal relationship with an existing and successful crowdfunding platform: pozible.com.

Deakin's partnership with Pozible was explicitly intended to provide a funding avenue for early career researchers and/or for projects requiring only modest investment. Project size ranged between $5,000 and $20,000 and the participants were supported by the university's marketing, public relations, and social media divisions. Participants were, however, expected to manage their campaigns on their own terms and to develop and use their own networks and communities of interest.

Campaigns operated on an "all or nothing" basis and for the most part adopted a hybrid donation and reward model. This enabled the university to offer supporters a deductible tax receipt. In the first round, more than 700 supporters, ranging from individuals through SMEs to large companies, financially backed the projects and the programme achieved a 75% success rate. Above and beyond the evident financial rewards, *Research My World* held a wide range of ambitions, most notably to:

- Encourage community agency in university research
- Use crowdfunding as an opportunity to promote individual agency on the part of the researcher
- Identify crowdfunding as a sign of institutional ambition and/or capacity
- Promote academic research in terms of its meaning to communities and not just other academics
- Shift the way universities promote research in an increasingly networked environment
- Provide a "discipline-neutral" opportunity; both science and humanities-creative arts were able to generate funds if community relevance was demonstrated.

As academic researchers ourselves, we were keen to emphasise the way that crowdfunding provided the public an opportunity to go beyond just supporting the project at hand by also signaling their support for an idea or approach. In fact in our experience, projects that were able to connect with abstracted or ambitious ideals (conservation, sustainability, social equitability and so on) were more likely to succeed. Scholars benefited from being able to demonstrate that their projects were extending the available "marketplace" of ideas, values, and opportunities. More surreptitiously we also sought to influence the behaviour of the different actors in the crowdfunding exchange by creating closer links between researchers and the communities that would benefit from their work. Our intention was to leverage from these altered behaviours and thereby also influence the way both academics and members of the public engage with existing institutional structures. What we hadn't intended but that did emerge during the course of the campaigns, was an active discourse around the idea that crowdfunding was an indicator of sectoral limitation; that *Research My World* was either a harbinger or worse, a possible cause of diminishing funding opportunities for academic research.

Research My World

The first iteration of *Research My World* has been highly influential for establishing the workflows of university crowdfunding in Australia and the specific experiences of these first eight projects is the basis for the detailed analyses in this chapter. After the university's research division gave the green light, a small team of six staff members (including senior, mid-career, and early career academics as well as diverse registers of non-academic staff) was formed via the university's Yammer account (an enterprise social network for staff and a smattering of students). This team, in consultation with staff from Pozible, established the *Research My World* methodology and undertook to provide formative and summative project evaluation to the university and the wider sector (Verhoeven et al., 2013).

A university-wide call for proposals prompted twenty-one applications which were assessed by the project team and representatives from Pozible. These were measured for their suitability for a crowdfunding campaign (rather than their merits as research projects per se) and a final list of eight projects from a wide array of research disciplines was selected to proceed. Applications took the form of a short online survey in which prospective participants answered questions about their project, the scale of their social media use and networks, their understanding of project stakeholders, and so

on. Selected project leaders were then invited to attend a short workshop to enhance their social media skills, establish their project materials (videos, images, websites, and so on) and otherwise prepare them for the demands of campaigning. The eight projects that proceeded in this first iteration of *Research My World* (and that form the basis for the analyses in this chapter) were:

Table 8.1: Research My World projects.

Project title	Project URL	Research Discipline
Mighty Medical Maggots to fight the Bairnsdale Ulcer	http://pozible.com/ mightymaggots	Health and Medical Sciences
Products of Play: Caching in on Australian Gamers	http://pozible.com/ playcache	New Media and Creative Industries
Voyages of Discovery	http://pozible.com/ voyagesofdiscovery	Remote Sensing and Aquatic Biology
How salty is your seafood?	http://pozible.com/ saltyseafood	Environmental Science
Would you like seaweed with that?	http://pozible.com/ seaweed	Marine Biology
Retake Melbourne	http://pozible.com/ retakemelbourne	Creative Arts and History
Discovering Papua New Guinea's Mountain Mammals	http://pozible.com/ tenkile	Applied Ecology and Conservation
Healthy Gigglers	http://pozible.com/ infantprogram	Nutrition and Population Health

Surprisingly, immediate interest in the programme was expressed, almost exclusively, by very senior researchers although this quickly waned when the project parameters were explained to them (small financial gains for a large social media effort). This curiosity from senior academics indicates the perceived value of some of the less tangible benefits of the crowdfunding process, such as the easier and more efficient application process than typically required by traditional research programmes.

From the outset, in conceptualising their crowdfunding projects, the participating researchers were challenged to alter their customary approach to research applications, particularly in the following areas:

- Radically shorter application and approval timeframe (projects needed to be ready to go in weeks rather than months or years)
- No long written scholarly documents but a requirement for digital and social media skills
- Emphasis on plain language communication rather than the specialised language necessitated by peer review
- A "flipped funding model". Researchers were required to identify minimal funding targets rather than the aspirational (and even amplified) budgets suggested by traditional grants, which are then renegotiated when they aren't fully funded. Once research-by-crowdfunding targets are reached the money is fully funded (less credit-card and platform fees) and targets can in fact be exceeded.
- The use of incentives to encourage donations required our researchers to begin to think beyond the parameters of project PR and more like marketers.
- Treat crowdfunding as a first rather than the final step in the financing process; as an opportunity to "pre-sell" the research itself and trigger later investment interest.

A clear expectation of *Research My World* was that campaigns would be driven by and focus on, individual researchers rather than the university. This placed significant pressure on the participants to "own" their campaigns at all levels. Post-project questionnaires indicated that researchers were underprepared for the amount of time and work their campaigns involved (Verhoeven et al., 2013: 6). For other researchers, the requirement to adopt an iterative approach to their campaigns and to adapt their campaign parameters and expectations continuously proved especially challenging and reflected broader changes in the space-time organisation of traditional academic research praxis than they anticipated. For example, placing the researcher at the centre of the campaign made familiar binary distinctions such as academic/non-academic almost untenable. The effort of linking a previously "private" Facebook account to their funding campaign proved a bridge too far for some. Other researchers based at regional campuses found they had become overnight celebrities through their promotional efforts and the comforts of academic anonymity were rudely replaced with public accountability to a much wider set of stakeholders. The heady mix of ideas and affects that contribute to the incomputable X-factor of crowdfunding success constituted unfamiliar terrain for many of the participants. Science-based researchers were particularly tasked to move away from the logic of closed systems and predictable populations when it came to the conduct of their crowdfunding campaigns.

There were also challenges for the other participants in *Research My World,* most notably the university and the crowdfunding platform itself. Whilst crowdfunding can be absorbed into some existing narratives of university enterprise, such as the language of the "pilot study," of experimentation and innovation, for the most part the "light weight" and networked principles of crowdfunding project management challenge the cumbersome organizational, technical, and social infrastructures of universities. Even apparently simple tasks such as creating a university PayPal account became almost insurmountable hurdles. As an "all of university" initiative, involving staff across campuses, disciplines, departments and administrative units, there is an enormous amount of silent, almost invisible work and resourcing, that goes on in the background of a successful research campaign. University actors (researchers, managers, administrative staff) alternately adopted tactical and strategic moves to ensure projects succeeded. The key challenge for universities then, especially those that are looking for the full range of benefits offered by research crowdfunding, is to make the shift from a historical inclination to impose "control" across a full range of institutional behaviours to embracing a disposition of "setting parameters" instead.

Finally, there were also unexpected challenges for the Pozible platform, itself a critical actor in the exercise. *Research My World* began as a Pozible "collection," an aggregation of projects within a sequestered section of the Pozible website. After the success of the first round of projects, Pozible elevated research initiatives to a core category within their site architecture, improving discoverability and opening up research crowdfunding opportunities to other universities, research centres, and individuals. At every level of software and interface design, of "back-end" technology and user experience (by both researchers and donors) there were complexities presented by university research that required creative workarounds. Questions as to how much intermediation was required by the platform and how much needed to be pre-empted by the university were constant. For example, what of the expectation that university researchers have pre-approved ethics checks against their planned activities? How to deal with non-online transactions such as checks or money-orders, which were preferred by many project donors? So whilst academics grappled with the demand for improved digital capacity, the crowdfunding platform dealt with the sometimes resolutely pre-digital preferences of university and public stakeholders. This suggests that in practice, rather than creating opportunities for the disintermediation of university research, crowdfunding is actually a matter of creative re-intermediation in which the crowdfunding platform rearranges the terms of engagement between the university, the researcher, and the public.

Friends with Community Benefits: Digital Capacity Building

To better understand the reorganisation of effort and capacity involved in crowdfunding university research, the *Research My World* team collected a wide range of quantitative project-related data. Unlike the guarded nature of peer-based decision-making in traditional research funding systems, we were inundated with data for measuring the project campaigns as they developed and assessing the paths to project success.

Given that it is a relatively recent phenomenon, research identifying the characteristics of, and factors that contribute to, a successful crowdfunding campaign, has only recently emerged. Studies can be broadly divided into those using qualitative methods based on interviewing campaign principals (Hui, Gerber, & Greenberg, 2012; Klaebe & Laycock, 2012) and quantitative methods seeking associations between measurable project dimensions and success status (Hekman & Brussee, 2013; Lu, Xie, Kong, & Yu, 2014; Mollick, 2014; Saxton & Wang, online early).

For *Research My World,* a data set of more than fifty variables for each of the eight projects was collected, covering project characteristics including:

- amount of funding requested/pledged;
- project success status;
- project interactions via the Pozible project website;
- Twitter data;
- Facebook data;
- YouTube data; and
- traditional media reporting.

Using quantitative analysis of the available project-related data we can make some preliminary observations of the critical factors for project success. As with any large data set, one way to identify the significant variables of interest is to individually assess their association with campaign success status (Hekman & Brussee, 2013; Lu et al., 2014; Mollick, 2014). Two useful measures of association – Spearman's rank correlation coefficient (ρ) and Kendall's rank correlation coefficient (τ) (Sheskin, 2007) – were calculated in order to ascertain the association between project success status and all the other variables we collected. A strong association with project success status as a dependent variable required both ρ and τ to have a value greater than 0.6, and for the correlation to be significant ($p \leq 0.05$). There were eight dependent variables in our data that met these criteria. However, some of these variables are almost certainly inter-correlated with each other and we used Principal Component Analysis (PCA) to re-map the input variables into a new

set of variables. PCA reduces the eight variables above to three that have the following factor structure:

1. the diameter of the Twitter network, the average directed path length of the Twitter network, the average undirected path length of the Twitter network, and the average Twitter network Erdős number for project principal – explaining approximately 48% of the variation in the original data (i.e., factors relating to the reach of the project's Twitter network);

2. the number of social media shares from the Pozible project website, the total page view count for the Pozible project website and the total unique page view count for the Pozible project website – explaining approximately 37% of the variation in the original data (i.e., factors relating to the ability of the project to attract eyes to its Pozible website and then get the website on-shared); and

3. the average pledge amount – explaining approximately 14% of the variation in the original data.

If these three transformed variables are computed for each project and the associations of these new variables with project success status are tested, then significant associations can be shown between transformed variables one and two, and project success status. On the other hand, variable three relating to average pledge amount did not have a significant association.

Limitations of the Research

The number of research crowdfunding projects included in this analysis is only small – just the first round of eight *Research My World* projects. Within those eight projects, there are significant variations in their characteristics, i.e., amount of funding sought, duration of campaign, research topic area, and so on. Given these limitations it is possible to say that the observed measures of correlation indicate a potential association between variables, but do not definitively represent a causal link between them, and they do not provide a total basis for predicting project success.

Acknowledging the limitations of the analysis above, from the first transformed variable, it seems clear that social media can play an important part in contributing to the success of a crowdfunding campaign. Anecdotally, those describing their research crowdfunding experiences identify social media communication as significantly improving their prospects of project success (Perlstein, 2013). Notably, while crowdfunding per se is not new,

the harnessing of social media for viral marketing and mobilisation of online communities is a new development (Hemer, 2011). Social network effects take precedence over traditional economic explanations of participation and investment (Saxton & Wang, online early). Those seeking crowdfunding who have a higher "social capital" are likely to have a higher probability of success (Wu, Sun, & Tan, 2013). In this sense it can be argued that online crowdfunding is the quantification (monetisation) of one's (online) social capital (Hui et al., 2012).

Be Sweet and Retweet

In analyzing the *Research My World* projects, transformed variable one suggests that characteristics of the project principal's Twitter network are a significant factor in determining project success – indeed others have also made this observation (Lu et al., 2014). The NCapture programme is able to capture all publicly available data (Tweets and Retweets) originating directly from a specific Twitter account, as well as data arising from a search for Tweets containing specific keywords. Twitter project-related data was captured during the period of the crowdfunding initiative. The NVIVO programme was then used to convert the captured Twitter data into Microsoft Excel spreadsheets. In all, 3668 *Research My World*–related Tweets were recorded, representing 982 unique Twitter account handles and 7758 separate Twitter messages.

For each of the projects, the spreadsheet Twitter data were exported in comma separated values (CSV) format, and then imported into the Gephi programme to analyse the Twitter communication network embodied in the data for each project. Gephi can evaluate a range of standard network parameters that characterise the structure and topology of a network (Hekman & Brussee, 2013). The network path length between any two nodes (in this case, Twitter accounts) in a network is the shortest number of edges (links/hops between nodes) that must be traversed to get from one node to the other. If we consider the "direction" of a Tweet as being "from" the Tweeter and "to" the recipient of the Tweet, then we can assign a direction to network edges, and the directed path length between two nodes is the shortest number of edges in the same direction that must be traversed to get from one node to the other. If we consider one node in the network to be a reference point, then the Erdős number for any other specific node is the undirected path length between that specific node and the reference node. The four Twitter network parameters noted above as being significant are:

1. the diameter of the Twitter network – defined as the largest undirected path length between any two nodes in the network;
2. the average directed path length of the Twitter network – the sum of the lengths of all unique directed paths in the network divided by the number of such paths;
3. the average undirected path length of the Twitter network – the sum of the lengths of all unique undirected paths in the network divided by the number of such paths; and
4. the average Twitter network Erdó's number for project principal – the sum of all Erdó's numbers for all network nodes other than the project principal divided by the number of network nodes minus one.

All of the four network parameters found to be significantly associated with project success status (and components of transformed variable one) relate to the topological width of the project Twitter network – the more extensive the "reach" of the network, the more likely a project was to be successful. The number of project backers (and hence cumulative funding) was observed to increase with the number of network edges (communication links) and the overall diameter of the Twitter network (Lu et al., 2014). Further, Lu et al. (2014) propose that it is not just the size of the social media network that is important, but also how information is propagated within the network. By accessing the separate personal networks of those individuals in their direct social network, a crowdfunder can reach prospective donors who would otherwise be beyond their direct contact (Saxton & Wang, online early).

From transformed variable one and the wider literature, we are able to conclude that a crowdfunding principal or project should leverage the reach of their social network. They need to maximise the path length of their social media communications related to the project. This is not about sending lots of Tweets per se, but extending the sequence of Retweets and other rebroadcasts about the project to new/unique potential pledgers.

Show Me the Data!

The Gephi programme can also be used to visualise a Twitter communication network by presenting Twitter user accounts as "nodes," and the communication path (representing one or more Tweets) between two nodes as an "edge." In the network diagrams given here, edges are presented as curved lines and the direction of Tweets is clockwise around the edge. The width of an edge is proportional to the total number of Tweets recorded between the two nodes

in that direction, and the size of a node is proportional to the total number of edges (inward and outward) connected to that node.

Importantly, we were able to use these visualisations during the campaign period to advise participants on how to improve their social media performance.
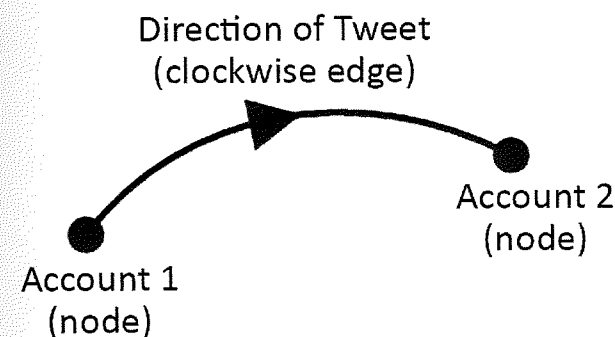

Figure 8.1: Twitter network visualisation schema.

While there is a single topological arrangement of the data for a given network, it can be visualised in many ways. Figure 8.2 shows all the *Research My World*–related Twitter network data arranged using the Yifan Hu layout algorithm (Hu, 2005) provided by the Gephi programme, based on the schema given in Figure 8.1, and with the nodes of the seven project principals that used Twitter as part of the campaign communication strategy indicated by large circles.
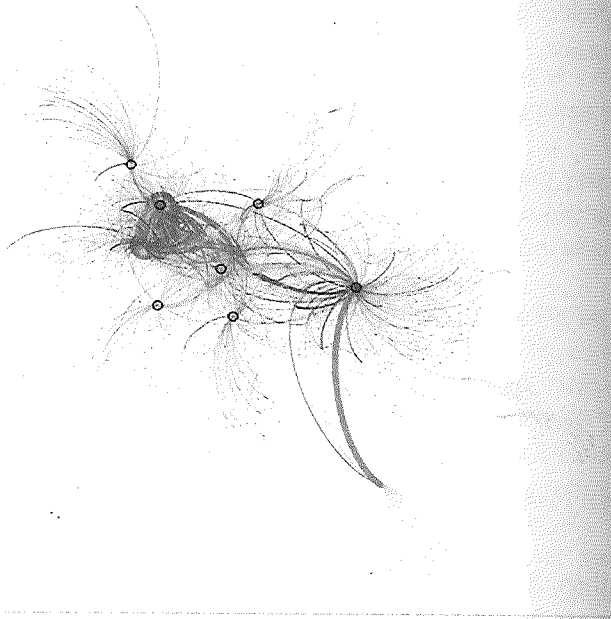
Figure 8.2: Combined Twitter network for all *Research My World* projects.

All of the projects were significantly interconnected in the Twitter communication space. The project principals were known to each other, and there was a wider team supporting the *Research My World* initiative, and together both of these groups provided significant promotion for all of the projects via social media. For comparison, Figure 8.3 and Figure 8.4 provide the visualisations for the separate Twitter networks for a successful project and unsuccessful project respectively. Figures 8.3 and 8.4 are presented using the same scale for node size and edge width. The network of the successful project in Figure 8.3 is clearly larger and more complex than that of the unsuccessful project in Figure 8.4.
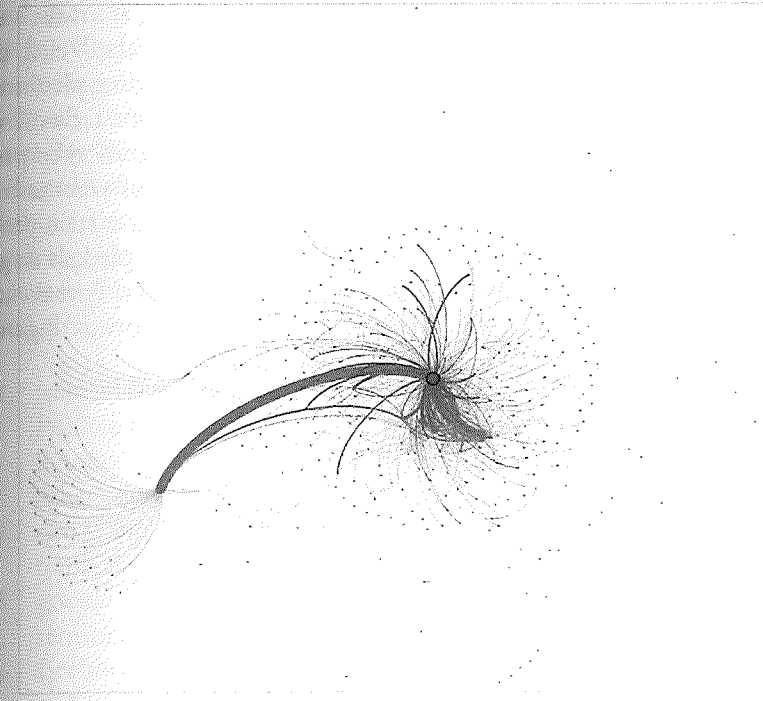

Figure 8.3: Twitter network for a successful *Research My World* project.
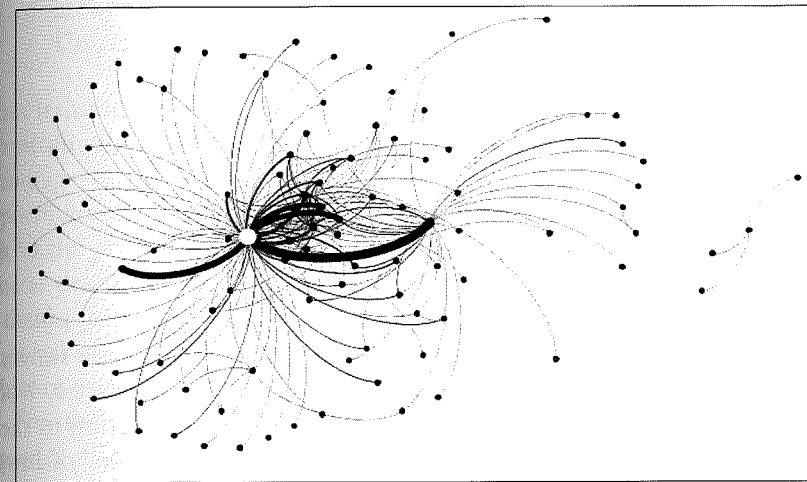

Figure 8.4: Twitter network for an unsuccessful *Research My World* project.

Again, acknowledging the limitations of the analysis above, from the second transformed variable, it seems clear that the amount of eyeball/click traffic into and out of the project website on the Pozible crowdfunding platform can also play an important part in contributing to the success of a crowdfunding campaign. This would seem to support the university's decision to partner with a major crowdfunding platform with vast amounts of website traffic. While not all page views may convert to a funding pledge, a certain percentage will, and an absence of page views represents potential pledges forgone. Some web traffic source information (limited to the high-level domain name) was available for the *Research My World* Pozible project websites. Figure 8.5 is a visualisation of the available traffic source information.
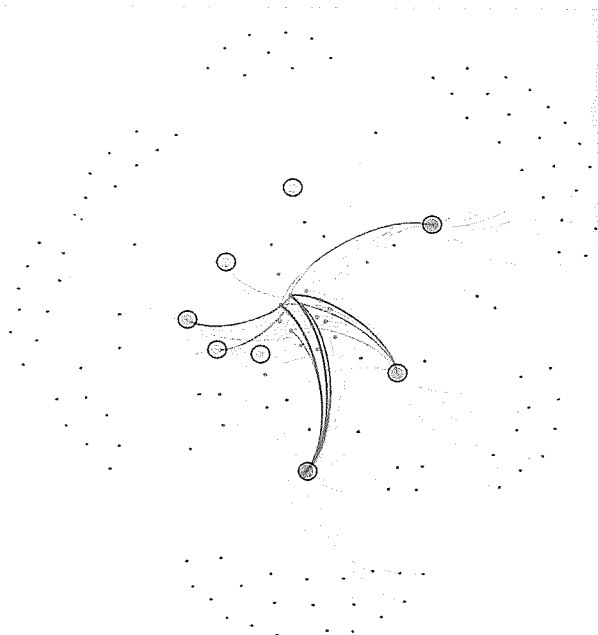

Figure 8.5: All inbound web traffic for the *Research My World* projects.

Inward traffic links to all eight *Research My World* projects are shown as clockwise edges into the project nodes indicated by large circles. Nodes are sized proportionally to the total number of edges connecting to them, and edge widths are sized proportionally to the total number of inward web connections along that path. The overall network diagram shows three principal regions. First, there is a central cluster of inbound traffic sources common to most of the eight *Research My World* project websites.

Second, there is a ring around the central cluster containing the eight *Research My World* project websites, as well as a group of inbound traffic sources common to two or more of the *Research My World* project websites. Finally, there is an outer halo of inbound traffic sources unique to the *Research My World* project website node that they are located adjacent to. This diagram visualises the inbound website traffic information, but does not imply a rate of conversion of this traffic to pledge dollars. Examining the central region of Figure 8.5 more closely, five of these web traffic sources appear in the top six sources for all eight projects, in approximately the following rank:

1. (direct) – representing inbound traffic arising from users entering the Pozible URL directly into their web browser, from links bookmarked in users' browsers, from internal links within the Pozible website, and other sources not 'jumping off' from another web page;
2. t.co – the URL shortening service provided by Twitter, so inbound traffic from project URL links embedded in Tweets;
3. google – inbound traffic from this source is presumably from URLs returned via Google web searches;
4. facebook.com – inbound traffic from this source is from URL links embedded in Facebook posts; and
5. deakin.edu.au – the web domain of the university from which all the *Research My World* research projects originate, so presumably inbound traffic from links to projects in news articles on the Deakin University website.

From transformed variable 2 and the wider literature, we can conclude that a crowdfunding campaign should drive eyeballs to the project website AND encourage those viewers to share the project website with others. Every opportunity should be taken to include a direct, and if possible live clickable link to the project website in any third party references to the project. The general description of the project on the project website, and the message of thanks displayed to pledgers, should ask the reader to hit the appropriate social media share buttons. These simple techniques can have significant influence on a campaign's success.

For the successful projects, data were available describing the time sequence of pledges made. Figure 8.6 is the combined pledge timeline for all *Research My World* projects together. The columns give the daily totals of pledges, with the dollar amount scale given on the left vertical axis. The line gives the cumulative total pledges as a percentage of the total funding

requested by all projects with the cumulative percentage scale given on the right vertical axis.
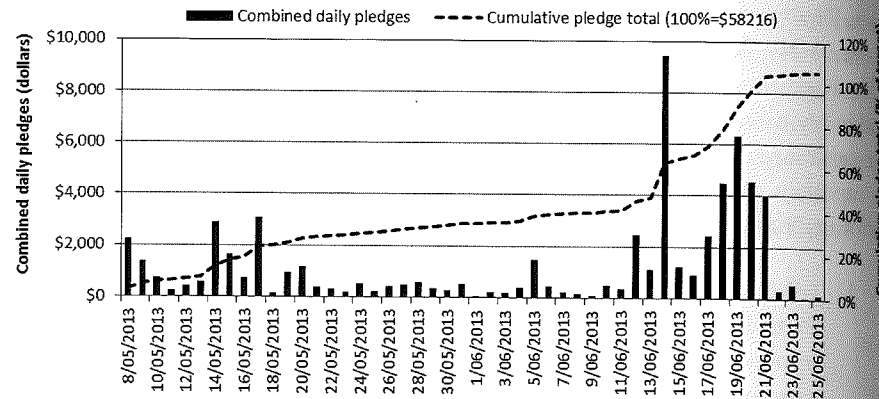

Figure 8.6: Combined pledge timeline for all *Research My World* projects.

While there is some variation in the individual project pledge timelines, they typically show the form apparent in Figure 8.6 – some initial activity, followed by some degree of lower activity producing a rate of pledges that, if continued, would not lead to a successful campaign. However, all of the successful campaigns experienced one or more relatively large pledges late in the day that carried them across the line. It's not clear whether the "crisis" of the impending project close-and-fail brings latent donors out of the woodwork, whether the same circumstance galvanises the project leaders in a surge of promotional activity, or whether some other factor is at play that dramatically increases the pledges at the end of the project. Understanding the characteristics of these late-appearing significant benefactors would be advantageous for future projects.

It is possible to examine the relationship between the time sequence of pledges and the time sequence of other project-related activity, for evidence of correlation. A useful measure is the cross-correlation coefficient (CCF). Time sequence data were available for Twitter and Facebook activity. The power of cross-correlation analysis is increased with the length and richness of the time sequence data, so the project with the richest pledge sequence combined with high levels of project-related social media activity was chosen for detailed analysis. Cross correlation analysis revealed that the strongest and most significant temporal relationship for total dollars pledged per day was with total Twitter activity per day (Tweets plus Retweets plus Mentions). This relationship is visualised in Figure 8.7.
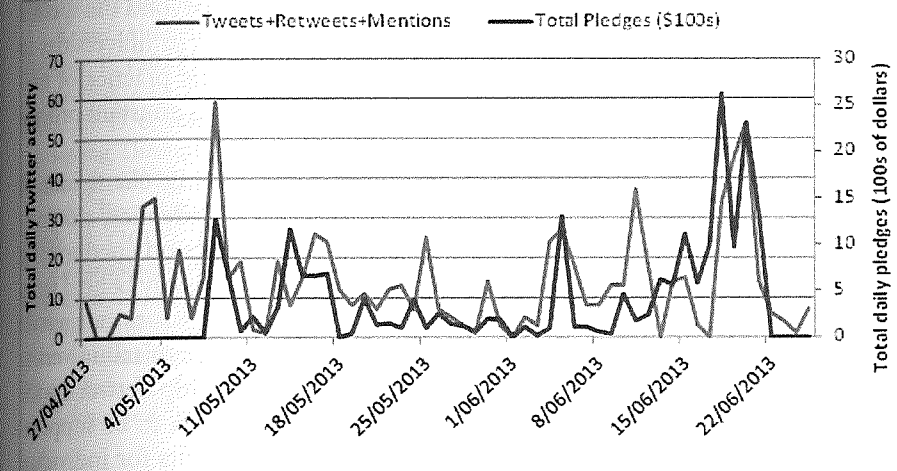
Figure 8.7: Timeline of pledges and total Twitter activity for one *Research My World* project.

Interestingly, the total Twitter activity per day had a stronger cross correlation with total dollars pledged per day than number of Tweets per day. This hints again at the importance of reaching, cultivating, and leveraging off a social media community for project success.

Conclusion

Following the successful first iteration of *Research My World*, Deakin University and Pozible continue to explore and expand their association. As this chapter is written they are in the thick of a third round of crowdfunding campaigns. Despite the evident challenges experienced by researchers there seems to be no shortage of eligible projects at Deakin and some academics have returned to the fray for a second effort. But the broader uptake from other universities has been slow.

As a new socio-technical infrastructure (what Nigel Thrift might call an "expressive infrastructure") crowdfunding vigorously exercises social media, mobile technologies, cloud computing, and post-modern financing behaviours (Thrift, 2012). And although it can be accommodated within familiar discursive frameworks, crowdfunding in practice remains a challenging activity for universities and university researchers to participate in. Without doubt, universities are in an important position to influence the evolution of research crowdfunding in the near future. The benefits are far reaching, providing opportunities for both universities and the public to engage with research

crowdfunding in order to realise wider social outcomes far beyond the specific campaign at hand. But as much as the perceived benefits (to universities in general and to researchers in particular) are aspirational, the practice of university crowdfunding is pragmatic and prosaic, a more or less constant process of micro-problem solving.

Successfully crowdfunding research requires unassuming champions in all corners of an organisation; an unlikely alignment of academics, administrators, entrepreneurs, and senior management. It also relies on encouraging researchers to extend their reach well beyond the horizon usually beheld from the university tower. In particular scholars are required to demonstrate a style of digital mobility and resourceful social impact that defies typical university systems for measuring merit. And so although the relationship between wide social media influence and crowdfunding success would seem to be supported by the project data, the career (or even workload) benefits for individual researchers are not yet evident.

How sustainable are university crowdfunding efforts? Ultimately, will the crowdfunding of scholarly research deter traditional investment or encourage it? Without more data, and more time, we can't yet answer this question. More evidence-based comparative research on different approaches and models, beyond the *Research My World* case study, is also urgently required. Perhaps we need to launch our own research campaign...

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