Protecting New Zealand Native Birds: An Investigation of Founder Motivations of the Squawk Squad Collaborative Innovation Network

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Abstract. Student social enterprise is an ideal breeding ground for Collaborative Innovation Networks (CoINs) to thrive. Students and graduates are fresh with learning, are tech savvy, have uncolonised minds, and they default to working in non-hierarchical cooperative ways when working with their peers. This paper identifies the motivations of the founders still involved in the Squawk Squad initiative in New Zealand. Squawk Squad is a new social enterprise using smart sensors, modern trapping technologies, and a wider social network to tackle the problem of pests decimating the populations of endangered native birds. The ideas behind this social enterprise were developed by a team at a local start up weekend, and within six months, the team had launched a successful Kickstarter Campaign that brought in three and a half times its target.

Interviews were conducted with two of the founding members to identify what motivated them to work on and grow the initiative without clear tangible rewards. Themes were identified using open coding, and seven motivational concepts were identified. Many of the themes identified will not be new to those involved in CoINs research and its applications. However, this investigation does provide an interesting case study and may provide a new contribution regarding the role of technology and social networks in the democratization of conservation in New Zealand. This may have further relevance to academics and practitioners seeking to foster and grow student social enterprise and seeking to harness the power of the swarm and collaborative innovation networks.

Keywords: Student Enterprise, Social Enterprise, Founder Motivations, Collaborative Innovation Networks.

1 Introduction

One of the joys of creating student enterprise activities outside of the classroom, such as the AUT Kickstart Weekend at the Auckland University of Technology in New Zealand, is that the amazing can occur. The Kickstart Weekend is an event part of a suite of student enterprise and innovation activities on campus that is all about creating a safe container where many things can come together – learning, fun, randomness, fear of the unknown, serendipity, ideas, knowledge, diversity, passion – and they mix together under the pressure of a facilitated process as essential ingredients in network building and transformation. Bringing together students with different skills, smart brains, great vision, and lots of goodwill creates an opening for the possible and the new to be created.

Innovation weekends, like the one at our university, are happening the world over, and they bring people together who wouldn't otherwise meet; they create fresh networking and learning opportunities. People swarm around an idea during these events. Often after the event is over, the effort to maintain and drive the initiative further dissipates. Some, however, take a on a life of their own, grow and develop, and quickly generate a following. One such weekend ignited something special for Fraser McConnell, Alex Hannon, Racheal Herlihy and five others in their team as they transformed the beginnings of an idea into a viable solution at the Startup Weekend Auckland in November 2016. The formula that took the team to the winning podium brought together the three worlds of conservation, technology, and social media to tackle the threat of introduced pests decimating New Zealand's native birds. The Squawk Squad solution involved a combination of modern trap technology, smart sensors, solar powered base stations, satellite connectivity, and a mobile social platform that allows people to buy a trap, or take a part-share in one, and to receive updates when their trap has successfully eradicated a pest.

1.1 The Uniqueness of New Zealand's Native Birds

The land mass of New Zealand broke away from Gondwana around 65 million years ago. Ever since it broke from what is today's Antarctica, it has been an isolated island free from large mammals. It has developed a rich and unique range of plants, fungi, and animals. The level of distinctive biodiversity is as high as such world-renowned ecosystems as the Galapagos Islands, the ecosystem that fascinated the naturalist Charles Darwin and inspired his contributions to the science of evolution.

For reasons that are not yet apparent, New Zealand was not inhabited by many mammals (only two species of bats). Instead, our fauna became dominated by birds and insects. Birds became the predators, the scavengers, the herbivores, and the insectivores. They lived everywhere from the highest mountains to the seashore. With few predators, many lost the ability to fly and became ground dwellers. Insects evolved to extremes of the big and small, and occupied a range of habitats.

Since the arrival of humans, introduced pests have thrived in the rich and predator-free environment. The combination of opossums, stoats, ferrets and rats now sees an estimated 25 million native birds killed each year in the country's wildlife reserves

and forests. Of the 196 native species (Taylor & Smith, 1997) 56 bird species have been lost forever, and 77 are now on the endangered list, including the kiwi, the nation's national symbol (Hitchmough, Bull, & Cromarty, 2007).

The default approach of the Department of Conservation to tackling this problem is the controversial dropping of 1080 poison, initiated in the 1970s. 1080 is a poison that mammals are particularly susceptible to. However, ethical issues aside, the cost and distribution of the poison across 30% of the country's land mass, much of it in remote inaccessible areas, produces challenges of its own. Despite a range of community and grass-roots conservation efforts over the years, the pests are still winning. The Squawk Squad initiative brings a new innovation, a digital mind-set, and fresh thinking to the task, and seeks to place conservation directly into the hands of the population through their mobile devices.

1.2   Collaborative Innovation Networks

A Collaborative Innovation Network (CoIN) has been defined by Peter Gloor (2006) as "a cyberteam of self-motivated people with a collective vision, enabled by the Web to collaborate in achieving a common goal by sharing ideas, information, and work" (p. 4). Typical traits of CoINs include internal transparency, sharing, and direct communication. CoINs are ideal in social innovation as they see the initiators come together around a shared vision, they are altruistically motivated to tackle a problem, and they aim to bring about significant change.

Gloor (2006) identifies the five essential elements of collaborative innovation networks: evolve from learning networks; feature sound ethical principles; are based on trust and self-organization; make knowledge accessible to everyone; and operate in internal honesty and transparency.

1.3   Student enterprise and founder resilience

Uncovering the factors that contribute to founder resilience, especially following a collaborative innovation network-generating event such as a kickstart weekend, is important to identifying what influences ongoing success. A range of factors come into play after the energy and excitement of the event fades. Study, work, family, sport, church, and a raft of other commitments can take precedence. Such is the case with the Squawk Squad winning team of eight members dwindling to a core of three founders. Many questions surface, such as, what does this team do differently? What is keeping them going? What is driving them internally that sees the initiative continue? What were the barriers for others that were in the winning team that didn't see them continue in the core team? How do the remaining founders see their role moving forward?

These questions have led to the creation of the study in this paper, along with a desire to identify the important learning opportunities that do sustain a social initiative once the excitement, energy and container of an event conclude. Understanding founder resilience may contribute to developing more effective processes and thus better facilitate social innovation. If articulated and known, then perhaps they can be

identified and replicated in future social enterprise endeavors and contribute to the knowledge of known success factors in social enterprise startups (Katre & Salipante, 2012).

2   Method

Open coding was used to identify concepts within the transcripts of interviews undertaken with two of the founders of Squawk Squad. The development of the motivational concepts were intended to be both exploratory and explanatory. There was a desire to explore what the founders themselves might describe as guiding their own experience. Our aim was to integrate aspects of what was already known about how collaborative innovation networks form and evolve with what might be unique from the lens of this particular student social enterprise.

2.1   Research Question

The research question was: *what motivations have driven the growth and development of the Squawk Squad initiative?*

2.2   Research Design

Social entrepreneurs are reflective practitioners (Schön, 1993). They "think in action; that is, they practice while reflecting mindfully on their actions, in order to continuously improve both their theories and their practices" (Martin & Osberg, 2015, p. 6). They are interested in improving their own practice and the ongoing sustainability and functioning of the team they work within.

   As the initiators and hub of Squawk Squad, the founders were central to the study and were considered as experts who would be able to reflectively articulate their own experiences, and common synthesized themes would surface through interviews. The intent of the research design was to explore the founders' motivations and ways of looking at things; their experiences would be at the heart of the data generated. As the nature of personal motivation can be highly contextual and subjective, the investigation needed to be exploratory to identify any underlying attitudes, beliefs, and traits that were shaping the initiative's success. There was a need to identify the shared concepts by looking for patterns within and across the interviews, and to identify how they linked to each other as shared constructs that supported the ongoing resilience of the core team.

2.3   Open Coding Technique

The transcripts were brought together and coded using open coding techniques (Lincoln & Guba, 1985; Strauss & Crobin, 1990). Open coding involves "the naming and categorization of phenomena through close examination of data" (Strauss & Corbin, 1990, p. 62). The aim of the coding of each criterion was to develop clusters, and

ultimately category titles, that would capture the meaning of the motivations provided. A strength of this approach is that open coding is key to keeping the contribution and voice of the participants at the forefront of the synthesis. Open coding is an accepted approach in Grounded Theory (Glaser & Strauss, 1967), combining a pragmatic and interpretivist philosophy.

3　　Results and Discussion

From the synthesis of the coding, merging, and categorization, a set of seven motivation concepts were identified.

Table 1. Motivational Concepts of Founders.

Concept	Description
Learning	Both from others and the needs of the initiative
Educating	A desire to take learnings to others
Problem orientation	Focusing on the problem rather than attachment to a solution
Sharing of knowledge	A non-hierarchical and open approach
Driven with a goal	Driven members with a significant stretch goal calling them forward
Shared values	It's not about the money
Energy	Underpinned by freedom and creativity

Table I presents a concise set of motivational concepts identified within the interviews with the Squawk Squad founders. These are not intended to be exhaustive, but to represent a synthesis of those identified by the founders involved in the study. Each of the categories and criteria are articulated further with the following descriptions.

3.1　　Motivators

Learning. Learning was considered an important motivational concept for the founders. Being together with different people and the needs of the new initiative led to opportunities for learning exchange and the need for just-in-time learning. These were opportunities that wouldn't otherwise have been experienced.

> I've been doing a lot of our website and things like that, which is a lot of fun and lots of learning. So I've been learning different languages to get on that and part of the [learning] process. P1

> I get to learn in the process as well, good to learn lots of different skills, learn about or birds, it's all win-win for me. P1

> I've learnt so much…everything you learn needs to be used right then and there. It's not just learning just in case, it's learning just in time. Everything sticks with you so much more. P2

More than just skills and knowledge, team learning was also seen as an important

> I've learnt a lot around probably team management has been really interesting. And people management in general. P1

Educating. A deep motivation within the conception of the initiative was seeing a gap in the knowledge of young New Zealanders.

> So we want to start doing an educational piece and go out and educate about predator-free New Zealand, about our birds, about pests and about the Squawk Squad initiative. P1

> We're going out to engage school's through Squawk Squad so we want to, for example, get two year twelves in each school in the region that we install the project. They can come with us to install the project and see what conservation looks like in the field and on the ground. We can educate them throughout the day…they can take that back to the schools and speak at assemblies. P2

> …we actually educate a younger generation on what conservation means and how to protect our wildlife. P2

> I was in a school in Wanaka today educating them on Squawk Squad and conservation and what predator-free New Zealand means. It's awesome to see how enthusiastic these young awesome kiwis are. P2

A problem focus. One of the founders said that defining and focusing on the problem, not the solution, was a guiding motivator for him and he wanted to instill it in the team as a way of working together. For him it meant that addressing the problem was of primary importance, and there was less attachment to the solutions developed or how to get there. This meant they didn't get stuck on particular things or became demotivated.

> For me the biggest thing was really what is the problem we are trying to solve?... I was solely around what is the problem we are trying to solve. Which was saving as many birds as possible and engaging as many New Zealanders as possible. The more we can work on achieving or better solving that problem is what kept us moving. P2

> That's what made it really easy for us is focusing on the problem not the solution and it wasn't about the money. P2

Sharing of knowledge. Although there is a clear, passionate creator of the idea within the team, they take a non-hierarchical approach to their knowledge-sharing among the team members.

> We've got a really cool team and everyone shares knowledge really well I find, so we've set up a group Facebook [page] and the team members will share different books they're reading or 'you should check out this TechTalk'. We're always chat-

ting about that and it's always a really interesting conversation between the team…
P1

We've got a collaborative and very open team which is cool. P2

Driven with a goal. Being driven internally and seeing others in the same light came through in the interviews.

We're all quite driven and yeah, I find sometimes I struggle to work on different things but Squawk Squad I could work on all night. I just don't know, I'm just passionate about it. P1

A contributor motivation and also providing team alignment is the articulation of their stretch goal.

So we have got quite big goals. We want to in - I want to say three years, but it could be five, three maybe - we want to have engaged 100,000 people and yeah, we just want to get it running nationwide. P1

The attractor was definitely the bigger picture in how can we help New Zealand in a bigger and forward-thinking way?…that was the attractor. P2

Shared values. Several values resonated for the founding members. One of those values strongly evident was the altruistic and selfless virtue of not being in it for the money.

What we are doing is a benefit for New Zealand and it's not a money-driven project so people are a lot more willing to listen to us… they seem to be more willing to share what we're up to as well. P1

We set a bunch of criteria to run off and it was really quickly that we decided that this wasn't going to be about the money. This wasn't about zeros at the end of our wage. This wasn't about the success we were going to achieve for ourselves. We wanted to do something bigger than ourselves. P2

For me, I think actually for the team in general, the ones that have stayed, especially, that we were attracted to an idea that was actually making a difference rather than money – we're purpose over profit, that's what we kind of go by. P1

For me I think that [the values] is the main driver for sure as there's no money in it at the moment so that's the only driver. P1

I truly believe in trying to make a difference than making a dollar. P2

I will continue to work on it just without money, or hopefully with money, but I'll just do it because I love it. P1

Involving community. The other aspect identified and described as a value was in the way they worked together on involving the community. While it was seen as an

important aspect to value and to include in their working approach, it was also linked to achieving the initiative's purpose.

> You know, you could have run the risk of assuming it's a good idea and spent hours building it but instead with kickstarter we've built a community there and validated it. P1

> We have plans for when we do our installing, we want to invite those backers to come along on the day and be a part of that because that's very much what Squawk Squad is. The community. Without our community we are nothing, so we need those people. The more they can be involved, I'm sure the more they will share it as well and get more people involved, and hopefully everyone's out there helping rid the pests. P1

> They are also out there spreading the word because they want it to be successful so that they get their reward, they get their trap and their t-shirt and whatever, so you kind of create these little brand ambassadors and they're out there doing the work for you, which is amazing. P1

> We only look to make the data that we provide the feedback that we provide more and more engaging. P2

Energy. Energy was identified as a motivator

> Whenever I have a phone call with any of them, I have this burst of energy and I just start working on Squawk Squad. P1

> And I think as well our team, there is an energy and I think it just comes down to us being passionate about being passionate New Zealanders as well. P1

For one of the founders, the energy motivator also saw its roots embedded in freedom and creativity. Having the opportunity to follow through on an idea, to see it supported by others, and to put it into action and see it contribute to the initiative generated vitality.

> I really loved the startup energy and the freedom that I actually can be creative. I'll come up with an idea and I'll send that through to the team and they're like, 'cool let's try that, why not?' whereas I don't think you'd have as much freedom if you were working under a big corporate. P1

> And again, it's that energy. You know, everyone's excited and passionate about what they are working on and it's too early for dreams to be crushed. P1

The role of external validation wasn't considered a strong motivator by the founders. However, given their success in exceeding their $20,000 kickstarter goal by bringing in $70,000, along with TV and radio coverage, and an invitation to TEDx Youth, it would be hard to see the external validation not playing a contributing role in the ongoing motivation of the team. External validation has certainly provided momentum to the initiative, if not the founders themselves.

> We had a target of twenty thousand and we hit that in 10 days…so I contacted Forest and Bird and said 'hey look, we've still got twenty days left of our campaign, we could potentially fund enough for another project. Do you have any sanctuaries in mind? P1

This led to the kickstarter campaign funding three more projects, taking the initiative beyond a sanctuary in the Auckland region to becoming a national campaign.

> So we went from thirty thousand to raising just over seventy thousand by the end of our campaign, so we were pretty stoked by that. P1

> It's been pretty quick but everyone says they're quite impressed with how fast we've moved, and actually we did have team members that struggled with the fast pace; they just weren't used to that so they've dropped out from that. P1

> The Department of Conservation ended [up] writing about us on their website saying we were the most inspiring and innovative group there, and I think they are quite excited by a young group that are coming through in a space that's predominantly an older sort of person. P1

The next steps for Squawk Squad involve the public launch of their mobile platform in November and the efforts to grow their collaborative learning network and expand the network of interest. As these expand, it will be worthwhile seeing how the motivations of the founders change over time, as well as the impact from the concretization of an organizational structure.

4   Conclusion

For those involved in student social enterprise, Collaborative Innovation Networks (CoINs) provide a useful framework for considering long-term success. The study in this paper identified seven motivational concepts that can be encouraged as student social enterprises form and evolve. It provides some validation that following a collaborative innovation framework provides a useful roadmap for the next steps in the journey following a startup or hackathon style event designed to bring innovative new ideas, fresh thinking, and people together to tackle problems.

Emerging technologies and the rise of a digitized and connected world will continue to offer new and innovative ways of tackling some of our shared challenges in our environment and wider society. At the intersections of technology, data, and mobile connectivity, new opportunities arise, and we seek effective ways to assist people through processes and knowledge to effectively work together.

Orientating to shared values, having an open and shared approach to learning, focusing on the problem, energizing one another, and involving the community have all been motivators for the founders of the Squawk Squad initiative. These are likely to be common to many successful social enterprise initiatives and are worth making explicit within the process of an initiative's development moving forward.

For practitioners seeking to foster and grow student social enterprise, consider harnessing the power of the swarm and collaborative innovation networks. Like the bees,

let's see them take an innovative idea to reality through their swarm and learning network, and go out and make the world anew.

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