ENGN2225 Systems Engineering Design

Improving Existing Volunteer Retention for Robogals ANU

Abstract

A systems engineering approach is used to evaluate the existing Robogals ANU chapter system in order to increase the number of active volunteer members. Interest is a prime factor in volunteer involvement, yet this decreases upon 5-6 months of signing up. The main focus for design outcomes is encompassed within the workshop element. It is suggested for Robogals ANU to increase the number of lead volunteers, increase the number of general committee members and implement opportunities for active volunteers to gain internship or work experience.

1 Background

Presently, women in science, technology, engineering and mathematics (STEM) fields of education and employment around the world are underrepresented (Roberts 2014). This disparity is disadvantageous to innovation as careers in STEM fields are used to design and solve problems. With fewer women involved in these projects, qualities that are unique to women are overlooked (Corbett 2011). Robogals Australian National University (ANU) is a student-run chapter established in 2012 with the aim to increase female engagement and university enrolments in STEM. This is done through arrangement of interactive workshops for primary to college level participants at schools and businesses in Canberra and surrounding rural areas run by members (Robogals 2015). The difficulties with these initiatives are that workshops rely solely on volunteer involvement by active members. The number of active volunteers involved in facilitating these workshops decrease following initial sign up.

Low volunteer involvement is the prime cause of workshop cancellations and last minute postponements at Robogals ANU. These are inconvenient and damaging to relationships between Robogals ANU and the partnered schools or businesses. Negative experiences have shown to be a prime reason for discontinued relationships (Bitner 1995). Aforementioned aims require on-going relationships between the schools and businesses to allow continued reach to female student participants. Thus, retention of current volunteers for the long run will enable continued workshops with participants to engage and inform; setting the path in order for the long term objective of increasing females into STEM fields to be achieved.

2 Introduction

This report utilises a systems engineering approach to evaluate the current state of Robogals ANU's existing system with the intention to identify primary problems in volunteer retention. Analysis of the present system for the client, Robogals ANU, presents improvement suggestions to increase the number of long-term active volunteers.

A systems engineering process encompasses a whole-of-system scope over a lifecycle to improve outcomes by design or system modification. Completion of each stage of the systems engineering process yields inputs, design tasks and outputs that are further developed in proceeding stages (Leonard 1999).

3 Existing Sub-Systems

Analysis of the existing system presents a broad overview of the current system scope to aid reader understanding and highlight all facets of the ANU chapter workings. The organisational structure designates interconnecting and dependent relationships between elements in order for the system to function. Shown in Figure 1, a functional allocation sub-system tree has been adapted to the Robogals ANU system. The Management sub-system facilitates organisation of all Communication, Funding and Workshop aspects (further explanation regarding management roles can be found in Appendix A). Communication is the largest function due to the volunteer-run nature of the chapter; enabling interaction between volunteers, the management team, other Robogals chapters and partners such as schools, businesses and sponsors. Workshops allow Robogals ANU to achieve aforementioned aims, yet are reliant on communication to coordinate volunteers for the workshop, and funding for equipment, communication costs and travel expenses.

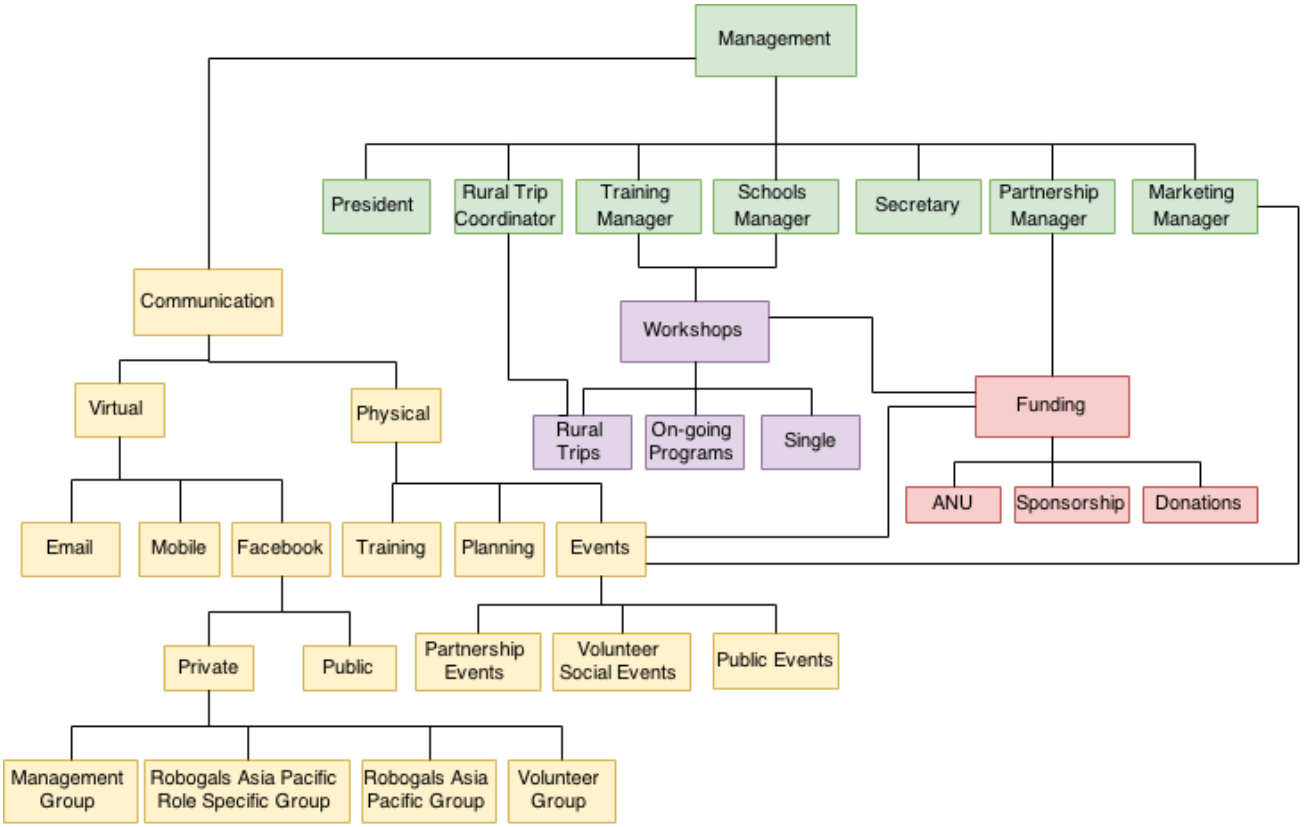

Figure 1: Robogals ANU Adapted Functional Allocation Sub-System Tree

4 Problem Scoping

Due to the large scale of the proposed system, problem scoping allows refinement of the system to gain a clear focus for later design concept ideas and analysis (Leonard 1999). This includes the

creation of system boundaries for the Robogals ANU system to define allowable scope and survey distribution to highlight and rank important problem areas within the existing system.

4.1 System Scope

A system boundary chart, shown in Table 1, outlines the scope of the Robogals ANU system by allocation of variables into endogenous (able to be controlled within the system), exogenous (unable to be controlled within the system) and excluded variables (Sterman 2000). Both endogenous and exogenous are of most interest, however, excluded variables are beyond the scope and will not be further considered.

Table 1: System Boundary Chart

Endogenous	**Exogenous**	**Excluded**
- Workshop date, time and length	- Workload of volunteers	- Engagement of students
- Workshop location	- Transport availability	- Student distractions
- Number of students	- Number of volunteers	- Amount of equipment
- Event date, times and length	- Volunteer availability	- Experience of volunteers
- Event location	- Volunteer engagement	
- Workshop activities	- ACT school holiday dates	
- Training date, times and length	- ANU teaching break dates	
- Robogals ANU Facebook page	- Knowledge of volunteers	
- Robogals ANU Facebook groups	- Available funding	
- Emails	- Application process of WWVP cards	
- Costs		

4.2 Problem Refinement

Two surveys were created to gain insight into key problems with volunteer maintenance, narrow down importance of these problems and highlight areas of strength that can be promoted or developed to improve retention of volunteers in the future. These surveys identify reasons why volunteers partake in chapter initiatives and causes for no longer participating; targeting current and past volunteers, respectively. A prior focus group was performed to brainstorm an initial set of answers for the two surveys. It is believed an aided survey will allow responses to be standardised and counted; translating qualitative opinions into quantitative data.

Surveys were created and accessed online through Google Forms. This assists survey distribution, participation and convenience. Internet surveys offer a faster, less expensive alternative to traditional

data collection methods. However, limitations of online distribution are that the survey is self-selected and honesty is not guaranteed (Lilien et al. 2013; Solomon et al. 2014). To increase representativeness, the survey for current volunteers was posted to the private volunteer Facebook group to complete (current volunteers only) and respondents to the past volunteer survey were individually selected based on individuals who have attended a workshop in the past shown by number of hours volunteered (data found in the myRobogals intranet database). Survey results remained anonymous to encourage honesty. A copy of both surveys and corresponding raw data can be found in Appendix B.

Data collected for 12 responding current volunteers noted experience, resume building and leadership building were equally the most selected motives for volunteering with Robogals ANU (75% selected). This was followed by responses of meeting people and volunteering (67%), workshop enjoyment and interaction with kids (58%), networking events (50%), Robogals community enjoyment (42%), travel and internship opportunities (33%), rural trips (25%), enjoyment of robots and social events (17%) and relation to courses or degree (8.3%). Of the 18 respondents from the past volunteer group, the main reason cited for discontinuation was that volunteers were 'too busy' (55% selected). Correspondingly, unsuitable workshop times during university or school hours (22%), graduated or no longer living in Canberra (16%), lack of organisation, coordination, communication, meaningful interaction, travel options and other involvements in a Robogals chapter elsewhere (11%), disinterest, lack of appreciation, workshop workload and generational differences between members (8.3%) were also factors. Survey options that went unselected by all respondents are not mentioned above and are assumed as unimportant.

5 Requirements Analysis

Problem refinements from survey replies provide a volunteer perspective on the present system. Requirements analysis, however, shapes the future design recommendations to the client's perspective. This increases likelihood of final outcomes to be implemented as importance of requirements to the end users (Robogals ANU) are identified and ranked. Technical performance measures (TPMs) act as quantifiable benchmarks to assess whether design requirements have been met and to what degree; using a common metric scale for comparison (Dym et al. 2009).

Client requirements and their respective importance rankings were evaluated from a meeting with selected members of the Robogals ANU management team. Translation of these into design requirements, TPMs (↑ denotes an increase and ↓ denotes a decrease) and their associated metrics are shown in Table 2. Importance rankings designate cost, functionality and ease of use, respectively.

Cost was noted to be a large restraint due to the limited funding of the not-for-profit organisation chapter. The Robogals ANU bank account balance was $2000 as of 24th May, 2015 (Li 2015). Yet, this amount is also allocated for spending on workshops, events and resources. Consequently, both upfront and ongoing costs need to be low in order for Robogals ANU to even consider and afford implementation of design outcomes. Functionality was ranked second as the purpose of the project is to maximise the number of active volunteers. This is in comparison to ease of use, which can be compromised based on the management team's motivation with the project. In spite of this, all management team members and the majority of active members are university students. Thus, minimising labour and time cost is ideal in order to decrease workload for the management team and active volunteer members.

Table 2: Requirements to Design Requirements, TPMs and Importance Ranking

Client Requirements	ID	Design Requirements	TPMs	Metric	Rank
Cost	DR01-01	Low upfront cost	↓ Set up cost	$AUD	1
	DR01-02	Low on-going cost	↓ Maintenance cost	$AUD	
Ease of Use	DR02-01	Minimal labour cost	↓ Number of people	People	3
	DR02-02	Minimal time cost	↓ Time	Hours	
Functionality	DR03-01	Maximise active volunteers	↑ Active volunteers	People	2

6 Logic and Function

Standard use cases describe intended use of the Robogals ANU system under regular conditions (Cockburn 2001). Robogals ANU acts as the primary stakeholder, while other Robogals chapters and the ANU College of Engineering and Computer Science (CECS) are secondary stakeholders. The considered success scenario would be that a volunteer signs up to Robogals ANU, attends training, receives a valid Working With Vulnerable People (WWVP) card, responds yes to workshop notifications by either email or within the private Facebook volunteer group, attends said workshop and involvement in future workshops are maintained over the long term. Demonstration of the process in the perspective of a Robogals ANU volunteer is mapped in Figure 2. The logical flow diagram identifies all decision processes and inputs required to proceed (Hurt 2012).

Main areas of interest are the decision points highlighted in yellow. These shape the relationship between Robogals ANU and on-going workshop participation of the volunteer. In particular, the second highlighted decision point is not included in any feedback loop. Thus, it is a potential area of discontinued involvement; specifically if the decision returns 'N' regularly over time. The other decision point without a feedback loop affecting workshop attendance is the application acceptance

for WWVP cards. These however, cannot be controlled by the volunteer or Robogals ANU, unlike training and planning attendance. In this way, the two highlighted decision points of volunteers being 'interested' at important specified times in the volunteering process are prime factors in acquiring and maintaining active volunteer members. Robogals ANU must focus on maintaining 'Y' responses for these decisions at those particular times.

A new set of past volunteer data was collected from the myRobogals database in order to evaluate interest levels against time. The graph is displayed in Figure 3. Interest levels (dependent y variable) were based on workshop attendance in hours, while time (independent x variable) was measured in months from initial sign up until the last attended workshop. The limitation in measuring interest through this method is that interest measurement is restrained only to workshop involvement, despite other offered facets of physical (events, training, planning) and virtual (email, mobile, Facebook) communication function aspects within the Robogals ANU system (see Figure 1). This compromise can be justified as current volunteers rank experience, resume building and leadership building as the top motives for chapter involvement (see 4.2: Problem Refinement). These qualities are encapsulated within the workshop component of the Robogals ANU system, as opposed to Communication or Funding elements.

As seen from Figure 3, interest modelled against time exhibits S-shaped exponential growth (Martin 1996). Two trend lines were identified; black to include all scatter points and red encompassing only the main bulk of scatter points. The black trend line has overall larger workshop hour attendance. This is attributed to rural trips, whereby volunteers who attend rural trips are committed to facilitate workshops for a set number of days outside Canberra, thus larger hours invested per month. Alternatively, the red line is believed to be mainly single workshop volunteers. Despite segmentation of groups, the red line will be the focus as this holds the majority of past volunteers. One limitation of the data is that it is assumed workshops are continuous throughout the months to allow volunteers to attend when interested. This is not true, as some months there are no workshops scheduled such as over the Christmas break. In this way, the number of hours attended is influenced by the number of workshops organised for that month.

There is exponential growth in interest from months 0 to roughly 5 months. Interest is at its highest during this stage. A transition period occurs between 5 to 6 months (shown by enclosed dotted lines), and finally, a there is a decreasing slope following 6 months. Fewer workshops are attended and there is a correlated loss of interest. This period is the pivotal point in the volunteering process lifecycle (from high interest to lower levels of interest) indicating a solution to maintain interest must

occur during this time (between 5 – 6 months of volunteering). The end state of discontinued involvement is reached at an estimated 17 months of volunteering.

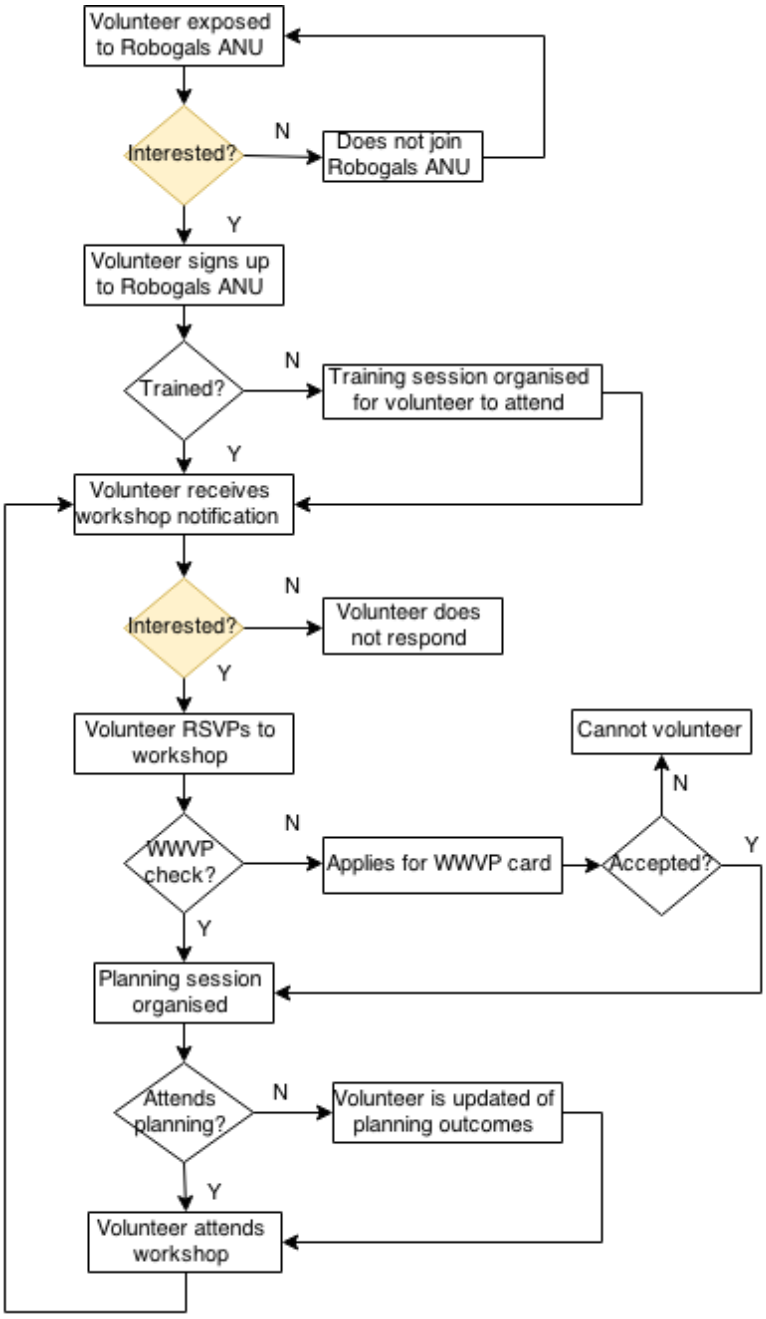

Figure 2: Logical Flow Diagram of the Volunteering Process with Robogals ANU
Yes is denoted by 'Y' and No is denoted by 'N'

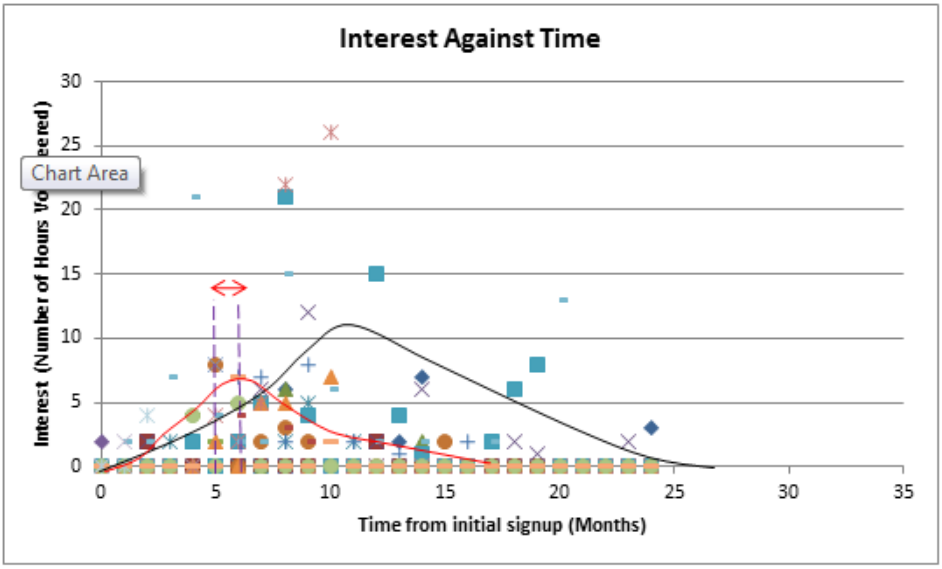

Figure 3: Scatterplot of Interest against Time for 26 past Robogals ANU volunteers

There is slight delay in training and WWVP check before volunteers are allowed to attend a workshop.

Different symbols are representative of different members

7 Concept Generation

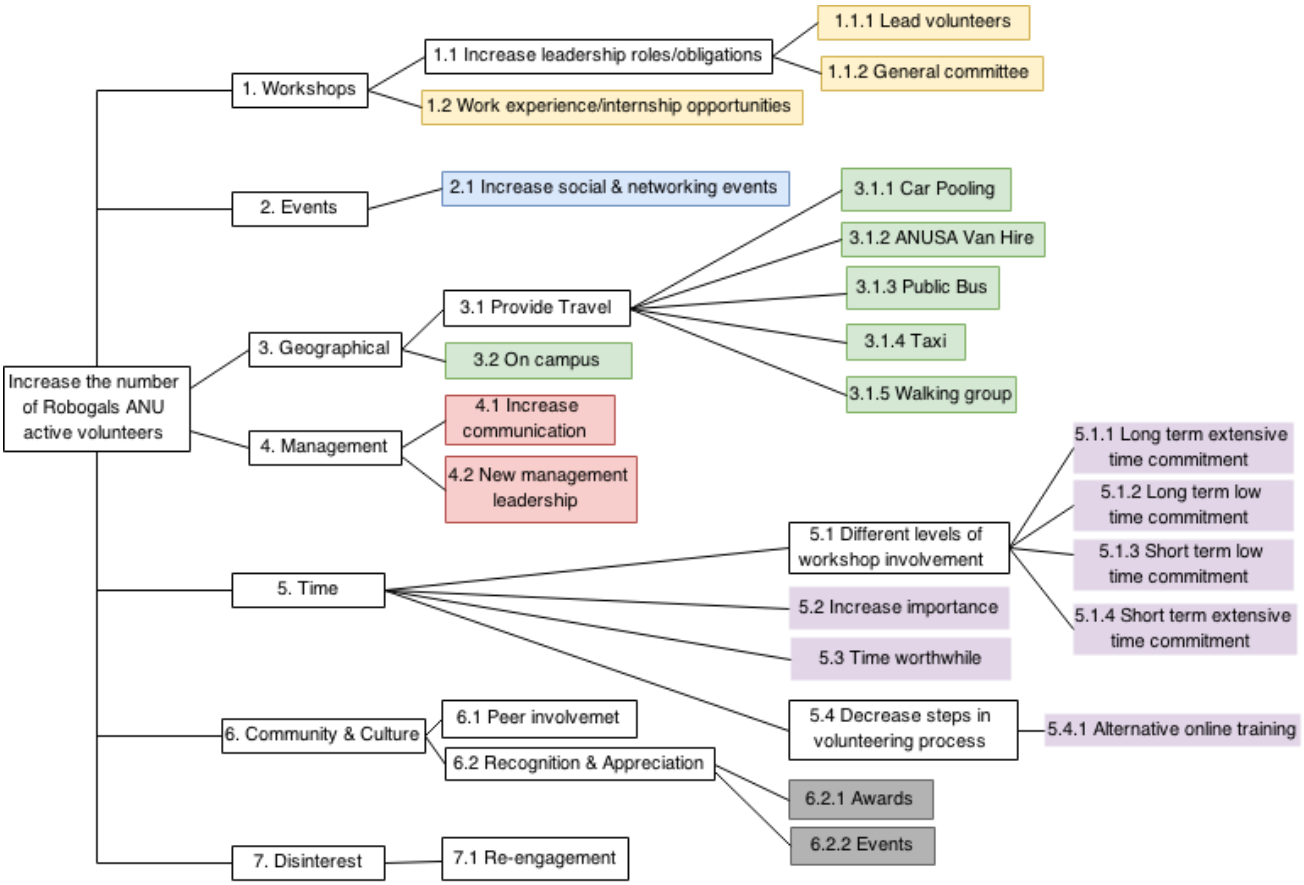

Figure 4: Adapted Concept Generation Tree

End points of the branches are highlighted as potential recommendations

An adapted concept generation tree, shown in Figure 4, explores ideas to sustain interest levels at the key points. These points are interest following exposure to Robogals ANU, interest following workshop notification and the pivotal point of 5-6 months after sign up. The tree is segmented into different partitions of workshops, events, geographical, management, time, community & culture, and disinterest aspects. Partitions are based on survey responses whereby allocations of all responses are segmented into relevant groupings (Table 3). Workshops contain the largest number of elements.

Branches from the tree show potential suggestions for improvements regarding the elements within its group, if applicable. Discussions for all aspects are proposed, as this stage, final outcomes are unclear. Presentation of a number of final outcome suggestions in consideration of assigned system boundaries will allow Robogals ANU to choose the ones that are reasonable for implementation within the system.

Table 3: Allocated responses from both surveys into aspect groups (see 4.2: Problem Refinement)

1. Workshops	**2. Events**	**4. Management**	**6. Community & Culture**
Enjoyment of workshops	Social events	Lack of communication	Enjoy the Robogals community
Enjoy robots	Networking events	Lack of organisation & coordination	Meeting people
Enjoy interacting with kids	**3. Geographical**	**5. Time**	Lack of appreciation & recognition
Experience	No longer live in Canberra	Workshops held during university/school hours	Lack of meaningful interaction
Volunteering	Involved in Robogals chapter elsewhere	Too busy	Did not enjoy community/culture
Resume building	Was not able to travel to workshops		**7. Disinterest**
Leadership building			No longer interested
Rural trips			

From the tree, highlighted potential recommendations are identified. Prevention of disinterest (7) aims to be prevented through the methods within segments 1-6. Design recommendations for workshops are to increase leadership and obligation roles and provide work experience or internship opportunities (1.1 and 1.2). These align with most selected current volunteer motives for involvement with Robogals ANU; those being leadership, experience and resume building.

Increasing leadership roles of current volunteer members, through assignment of lead volunteers or creation of more general committee representatives, will establish more value placed on roles and in turn, increased emotional attachment (Esmond 2009). A larger pool of perspective management team members for the following year is also a result which is desirable for the chapter. Robogals ANU has a new management turnover yearly. In which case, programs to improve leadership (4.2) may improve management outcomes for the system. These have time costs associated, however. In the case of too much obligation, there is a risk volunteers may turn away due to workload. This can be resolved by volunteers opting into these options rather than management selection. Work experience and internship opportunities are an incentive for continuation and may be organised through Robogals ANU partners. Such opportunities are in demand for students in the STEM faculties at ANU. Selection processes for volunteer members will also need to be considered due to the likely limited number of opportunities and the large number of interested volunteers. In this way, it is recommended that applications for work experience opportunities should be opened for selected volunteer members upon the 5-6 month mark after sign up. The suggestion is limited by the large time cost associated with organisation, but as well, developing strong ties with partners.

Included provision of travel to workshops informed as part of workshop notifications will increase interest for volunteers. An increase in convenience for students in turn increases their likelihood of attendance (Esmond 2009). Design requirements of cost and ease of use are compromised by alternative taxi travel and walking, respectively (3.1.2 and 3.1.5). For the number of people and equipment required for a workshop, taxi travel is expensive. Comparatively, walking requires many hands to carry equipment, cannot be sustained over long distances and has large time costs; despite low monetary costs. Feasible travel options include carpooling (3.1.1), ANUSA van hire (3.1.2) and bus services (3.1.3). These options are the most effective as carpooling will be essentially cost-free for passengers, ANUSA covers petrol costs for van usage, and bus fares are reasonably priced in comparison to other modes of travel ($1.45 for a one way concession)(ACTION 2015). However, ANUSA van hire requires a licenced driver and pre-booking 2 weeks in advance (ANUSA 2015). Similarly, carpooling requires a volunteer to have usage of a car. Both these modes are generally much faster than public bus transport depending on the bus route and weekday. In this way, they are preferable and incentives to increase the likelihood of carpooling for members that drive may be through reimbursement of petrol costs or payment of a small nominal fee. On-campus workshops (3.2) are an ideal case of convenience for students due to decreased travel time and travel costs but schools are occasionally reluctant to accommodate the large number of permission forms required from the parents of participants.

Time constraints for volunteers have been found to be the largest issue across all volunteering organisation sectors (Esmond 2009). The nature of volunteering is changing, and in order for the system to adapt to these changes, flexible workshop involvement (5.1), increasing perceived importance (5.2), assuring volunteering time is well-spent (5.3) and decreasing the number of steps in the process (5.4) are potential suggestions to cater for time restrictions. Multiple experiences for volunteering by segmentation of involvement levels will allow a volunteering opportunity for any member. This is a system within Robogals ANU already. Rural trips, on-going and single workshops are currently being offered. Increased marketing of these volunteering experiences may increase volunteer uptake of them. Interestingly, short term volunteering options can lead to longer term involvement for some volunteers (Esmond 2009). By providing multiple options, longer term involvement is promoted to both those who make time to volunteer, and those who only volunteer when they have time. Increasing perceived level of importance (5.2) in order for volunteers to make time for workshops is difficult and individual dependent, hence challenging to implement. Some volunteer organisations use impact reports for this purpose. Measuring impact is difficult, and it is too early to measure the number of females that pursued further STEM studies as a result of workshop attendance. It is a long term process without immediate results. This is a cause for some volunteers to lose motivation and interest in workshops. Decreasing the number of steps within the volunteer process (5.4), seen in Figure 3, to make the volunteering time worthwhile (5.3) could be an option through use of online training (5.4.1). As mentioned earlier, convenience is a driver for participation, yet training requires hands on activities with the robots and may not be effective if performed alone without access to assistance or guidance. A loan system for the robots and software may be implemented but equipment and resources are limited and risk and consequences of theft is too high.

Value, appreciation and recognition are underlying forces that can greatly improve the overall volunteering experience (Esmond 2009). Suggestions for improving the Robogals ANU community and culture include increased peer involvement (6.1), recognition-appreciation awards (6.2.1) and events (6.2.2) at the pivotal interest transition stage (5-6 months). These tie into suggested system modifications of increasing communication elements (4.1), and social and networking events (2.1) Increasing the engagement of peers from volunteer members correspond to an increase in emotional ties between Robogals ANU and its community culture. Active members are less likely to discontinue in the case of positive experiences and there is a larger social obligation to continue (Bittner 1995; Esmond 2009). Additionally, word of mouth facilitated by peer engagement is the

primary method of volunteer recruitment. In spite of this, volunteer acquisition through this method can be diversity prohibitive, and may lead to cliques to form; damaging community culture (Esmond 2009). The suggestion is compensated due to the benefits that increased active volunteers and peer engagement bring outweigh the lower risk of community damage.

Recognition, appreciation awards and events are currently implemented at Robogals ANU, yet are performed only once a year. Recognition and appreciation events will be most impactful during 5-6 months of sign up to maintain interest for longer. Awards and recognition aim to lengthen volunteer engagement with Robogals ANU for longer than the average 17 months.

8 Lifecycle Phases

Lifecycle analysis using a whole-of-system scope considers design over an entire system evaluated at major phases. This presents a timeline for problems and optimisations to be acknowledged early (Stasinopulous et. al 2008). The volunteering lifecycle for Robogals ANU is modelled by a stock and flow diagram, shown in Figure 5. This model was chosen as it is able to reflect the continuous and dynamic nature of inflows and outflows within the volunteer system, including system constraints and likely feedback loops (Martin 1996).

Positive experiences refer to past familiarities with Robogals ANU such as through the media, friendly chats with volunteer members or that the person formerly attended a Robogals workshop as a participant (not a volunteer). Communication refers to functional sub-system elements (see Figure 1) of physical and virtual communication including events and Facebook. Negative experiences encompass elements mentioned in the past volunteer survey; lack of recognition, lack of organisation, lack of communication, workload and so on.

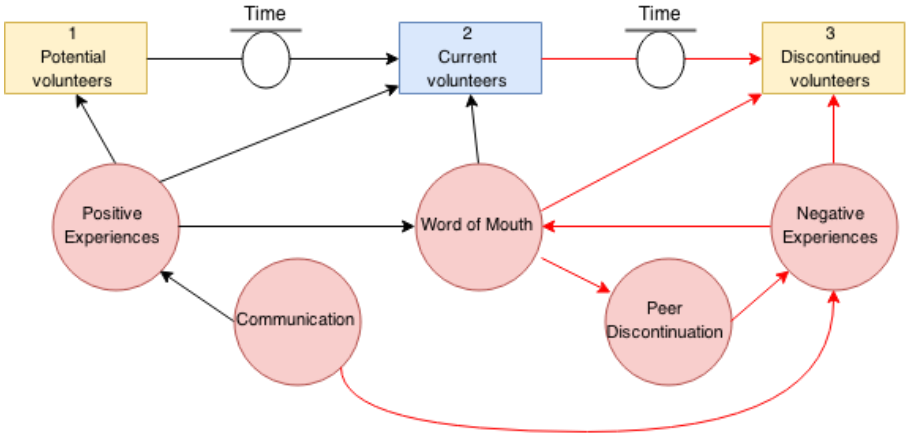

Figure 5: Stock and Flow Model for Robogals ANU Volunteering System Life Cycle
Black arrows denote inflow of active volunteers. Red arrows contribute to outflow of active volunteers

Critical variables involved in the Robogals ANU volunteering system lifecycle include the number of people who are yet to become volunteers, the number of people who are volunteers, and the amount of time it takes a person to become a volunteer. The system growth is restricted by the number of potential volunteers. This pool of people consist of the ANU community. Past data shows that these are past or present ANU students deriving from Science, Engineering or Computer Science backgrounds (data taken from the 2012 – 2015 myRobogals ANU database). Influences of positive experiences, communication, word of mouth, peer discontinuation and negative experiences are likely drivers that act to amplify and stabilise the volunteering system through positive and negative feedback loops (Martin 1996). For example, positive experiences can be spread by word of mouth, which contributes to an inflow in the number of current volunteers from the potential pool of volunteer students. Conversely, involvement within communication aspects such as attending a Robogals event may lead to a negative experience resulting in an outflow of volunteers. Peer discontinuation can also lead to decreased enjoyment and realisation that discontinuation is an option; hence decreases the number of active volunteers.

The loops amplify non-volunteers to become current volunteers (1 to 2), and stabilise current volunteers to become discontinued volunteers (2 to 3). Equilibrium is reached when the number of new volunteers equals the number of discontinuing volunteers. This is so the current numbers of volunteers remain stable. Figure 6 shows the process of positive and negative feedback that dictate behaviour of the stock and flow lifecycle diagram. Similarly, the interest against time graph (Figure 3) has the same shape as Figure 6 and can be linked with the stock and flow diagram.

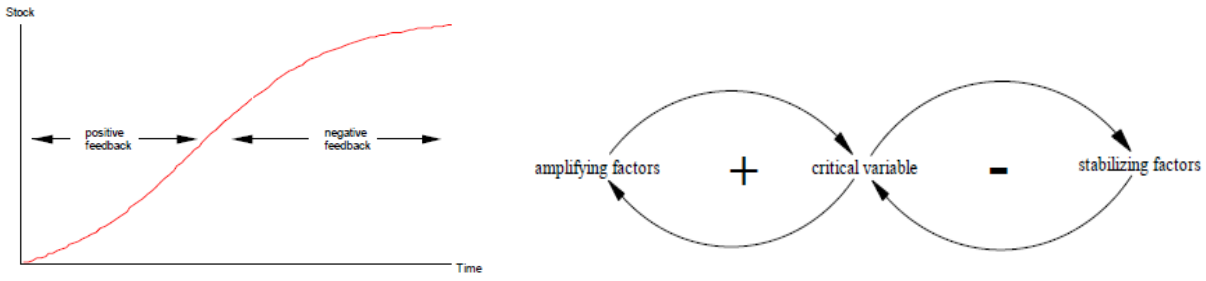

Figure 6: Positive and Negative Feedback affecting Applifying and Stabilising Factors (Martin 1996)

Signups to Robogals ANU are highest at the beginning of each semester, particularly during Market Day of orientation week (Robogals 2015). Amplification of the positive feedback loop dominates negative feedback, due to marketing communication efforts and resulting volunteer interest during this time. The positive feedback loop is not able to grow continuously due to the constraint of interested potential volunteer members. The number is fixed until new students who may be interested arrive on campus. Upon 6 months, dominance of feedback loops are shifted. Interest levels

drop and there is a decrease in current volunteer numbers. During this time, volunteers may feel underappreciated or too busy with university workload (attributed to the negative experience aspect). This feedback forces the number of current volunteers downwards toward stability. Upon the new semester, the pool of interested potential volunteers is replenished. Current volunteer base includes new volunteers and retained volunteers. The cycle repeats again. During minimal change in current volunteers, discontinued volunteers correspondingly remain low.

From lifecycle phase analysis, it is determined that exponential interest growth cannot be continuously sustained. Volunteer discontinuation is unavoidable; however retention of volunteer involvement in workshops can be increased for longer than the average time of 17 months after sign up. There is a regular turnover of volunteer members each semester. The influx of potential and new volunteers at the beginning of each new semester is an optimum time to increase suggested marketing of workshop involvement levels, as well as the communication aspect that volunteers believed was lacking during their time with the chapter.

9 Design Evaluation

There should not be just one design solution, but rather a number of system recommendations for which Robogals ANU may consider. This is because volunteer interest and involvements spans over many facets of the existing system and by consideration of multiple outcomes, it increases overall likelihood of success. All concept generation outcomes are shown in Table 4. It is believed a focus on workshop aspects will be most beneficial to both Robogals ANU and active volunteer members. From the perspective of past and present volunteers as main motives and allocated elements for volunteer involvement are encompassed within this system trait. Thus it should be strengthened. The volunteer perspective is significantly important due to the volunteer-run nature of the organisation. Increasing the number of lead volunteers and general committee members satisfies design requirements of cost, functionality and ease of use. Implementation of work experience and internship opportunities is not optimised for ease of use (time and labour costs for organisation), but it is believed this would bring a new light into the Robogals ANU system and an incentive for volunteers to sign up and enhance continued involvement for longer than 17 months. Considerations of other design and modification outcomes from Table 4 also hold value if costs and time permit, to promote future stability and growth of the Robogals ANU system. These will allow Robogals ANU to achieve the long term aim of increasing women into STEM fields.

Table 4: Concept Generation Outcomes

Workshop	- Increase number of lead volunteers - Increase number of general committee members - Implementation of work experience/internship opportunities
Geographical	- Car pooling - ANUSA van - On-campus workshops
Time	- Increased marketing for different levels of involvement (rural trips, single and on-going workshops)
Community & Culture	- Increase peer involvement - Appreciation & recognition awards and events
Management	- Increasing communication aspects - Implementation of a leadership program for new management
Events	- Increase the number of social and networking events

10 Further Work

Ongoing programs established this year would be beneficial in gaining more accurate and indicative interest against data information due to the constant number of workshops available for volunteers to attend each month. However, time is required for enough data to accumulate. Additionally, data collection from other more established Robogals chapters may give a better representation of volunteer retention over the long term as sample size was relatively small for this report.

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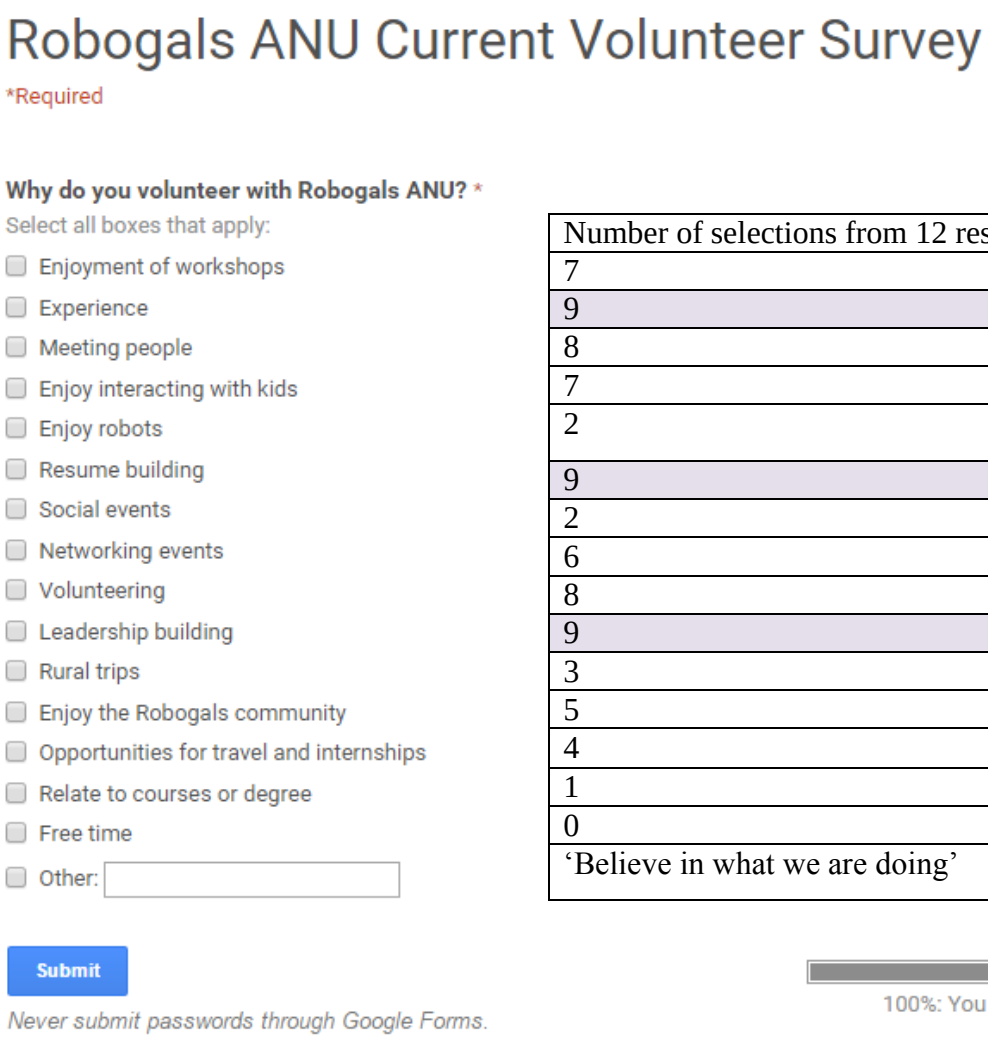
Appendices

Appendix A:

Table A: Robogals ANU Management Role Descriptions

Role	**Description**
President	Leads, supports, and checks on-going progress of Robogals ANU executive team and is generally the main point of contact for Robogals ANU and its stakeholders.
Secretary	Organises and records meeting minutes, manages reimbursements and financial aspects.
Training Manager	Initiates training and workshop planning sessions for Robogals ANU; acts as the main point of contact for volunteers.
Schools Manager	Organises all workshops (ACT and rural), updates chapter statistics, manages equipment and volunteer database; acts as the main point of contact for schools and any workshop interest.
Partnerships Manager	Create and maintain relationships with partners, manages financial aspects and the main point of contact for partners.
Marketing Manager	Organises and manages promotion of all events (social, networking and public).
Rural Trip Coordinator	Manages volunteers, workshop planning and travel for rural trip workshops.

Appendix B: Survey Form and Results



Number of selections from 12 respondents
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1
0
‘Believe in what we are doing’

Figure B1: Current Volunteer Survey and Results

Robogals ANU Past Volunteers

*Required

Why did you stop volunteering with Robogals ANU? *

Select all that apply:

	Number of selections from 18 respondents
Too busy	10
Graduated	3
No longer interested	1
Workshops held during uni/school hours	4
Workshops held during weekends	0
Workshops held after school hours	0
Have not updated training	0
Lack of organisation and coordination	2
Lack of communication	2
Was not able to travel to workshops	2
Lack of appreciation and recognition	1
Did not enjoy community or culture	2
Lack of meaningful interaction	2
Too much workload to handle for workshops	1
Generational differences between volunteer members	1
Gender of volunteers	0
No longer live in Canberra region	3
Are involved with Robogals Chapter elsewhere	2
Other:	‘Too many assignments’ ‘Part of Robogals Regional’

Submit

100%: You made it.

Never submit passwords through Google Forms.

Figure B2: Past Volunteer Survey and Results