

HighWire Research Project

Sustainable micro-business: can virtual guilds offer a solution?

Organisational Description - The Northern School of Permaculture

Edited following comments made by organisation 31 July 2013

Introduction

The Northern School of Permaculture was established by Angus Soutar, an established permaculture designer, having been trained by permaculture founder Bill Mollison in 1992. Angus was also a co-founder of the Permaculture Institute of North Britain, which 'follows the pattern of the traditional Craft Guild'. The Institute wishes to 'further the development of skill and practice in permaculture design'. The relationship of the School to the Institute could be seen in terms of 'overlapping layers' of intellectual property, going back to the 'pre-medieval concept of the commons'. The origins of this way of skill development are in the late 1990s where a small group of permaculture practitioners used the co-counselling model to support apprentices towards getting their diploma.

Philosophy

Permaculture has its origins in 'permanent agriculture', which in turn can lead to a 'stable social order'. From these origins, permaculture design now covers all areas of human activity. Permaculture is based on the principle that nature 'proceeds much more efficiently than human society', where applying natural principles to develop 'sustainable human settlements' can 'slow the onset of climate change and community disruption', which is now urgently needed.

The School itself is based on the principles of permaculture, in a quote from Bill Mollison in the original Permaculture - A Designers Manual:

"... we can build a global, interdependent and co-operative body of people involved in ethical land and resource use, whose teaching is founded on research, but is also locally available everywhere, and locally demonstrable in many thousands of small enterprises covering the whole range of human endeavours from primary production to quaternary systems management; from domestic nutrition and economy to a global network of small financial systems. Such work is urgent, important and necessary, and we cannot leave it to the whims of government (always short-term) or industry as we know it today."

The Northern School sees itself in a 'defensive' role, maintaining a 'lineage' of permaculture teaching working to overcome the 'dilution of principles'. Angus is 'second generation', having been taught by the founder of permaculture Bill Mollison, who created and copyrighted the intellectual property of permaculture, to be passed on by him to individuals who complete the 72 hour foundation course. His intention was to have the intellectual property maintained by institutes or 'academies', following the Russian academy model, where students were free to be creative, Angus is upholding this intention by creating the Permaculture Institute of North Britain. This succession process confers a legitimacy of practice on the Institute and thus the School (the Steiner School model), in contrast to bodies such as the UK Permaculture Association which seek legitimacy through an adult education model, where students receive certification that they have gained knowledge from a credible institution.

Peer support is key to how the Northern School operates, where even the initial foundation courses are run on a self-help basis, with participants encouraged to bring food to share, offer a venue and be involved in organising the course if they can't pay the full fee. In general, the Northern School operates without a lot of exchange of money 'on purpose', they are investing in training people in skills that will enable them to be more effective in any activity they choose to do, creating assets of people rather than money. This is against a background that the founding principles of modern society, particularly financial systems, could soon break down, putting a greater value on more sustainable ways of living. At present, students are advised 'don't give up the day job'.

Current Work

The Northern School describes itself as taking a 'holistic and ecological approach to design', in practice providing courses that are 'firmly based on our experience and practice as designers'. Their 'model is one of apprenticeship rather than "adult education"', with a 'person-centred' approach. They aim to reduce costs and paperwork as far as possible. It is not building-based, activities are co-ordinated through their website, which also allows for booking on courses.

They offer the 72 hour 'standard foundation course for people who want to learn about permaculture design' as 'planetary repair work'. No formal qualifications are needed for participants, only that they 'share the permaculture ethic of care and respect for all the living systems on the planet, together with a desire to put right the damage caused in the past'. They emphasise that it isn't all about the outdoors, although outdoor activities feature in the course. Students who go on these courses learn how to find their 'inner creativity', then go on to 'make small changes as they go about their daily business, changes that add up over the days and weeks'.

An example course is held in Scotland, the accompanying photos show a remote location, where 'accommodation in shared eco-cabins' is available, this communal aspect extends to 'open fires to sit round, and a large games hall'. The cost of the 5 weekend course to include this accommodation and all meals is £500, low for this kind of residential. However, this cost could be reduced even further, as 'if the fee is difficult for you to find, you are encouraged to negotiate with us', including 'community trading', which, according to a separate website is a way for people to 'sell their skills, goods and services to other people in their community', but using 'accounts' rather than actual money. The published syllabus for this 5 weekend course indicates that the majority of the time is given to understanding natural systems, then briefly considering how the learning gained can be applied to present-day human society.

After completing the 72 hour course, students can then apply for associate membership of the Permaculture Institute which entails becoming 'apprenticed to at least one full member of the Institute, and also to gain the recommendation of a second member'. They then work for at least a further two years to create a 'portfolio' of at least 10 design processes in a range of situations that is assessed by an experienced panel of permaculture designers according to published criteria. The advice given to prospective diploma apprentices includes 'building relationships' including supporting their tutors. They see themselves as 'pioneers' amongst existing systems that are likely to fail, thus they have developed a 'core system that does not depend too much on lots of money and technology' or 'work-net'. The diploma is based on 'peer-recognition' by a self-described 'interesting (if unusual) bunch of people'. Once students have been accredited, they then become a full member of the Permaculture Institute and are encouraged to become mentors to new apprentices.

The Institute is based on the 'time-honoured' model of professional institutes such as RIBA and the Institution of Civil Engineers. These have in common:

- A code of conduct

- A body of knowledge
- Maintaining educational standards.

The Permaculture Institute, together with its sibling institutes world-wide, hold the original intellectual property that defines permaculture, including the 72 hour course. These institutes offer 'resistance to dilution and attack', particularly from individuals who have taken the 72 hour course and then feel qualified to offer paid courses in turn (without going through the full apprenticeship). The Institute model thus creates a 'hierarchy of practice'.

The Institute website is an important tool, those who become members get access to the resources on the private areas of the site. This virtual community is facilitated by technology in a way that wouldn't have been possible even ten years ago. These resources form a 'commons', which can be self managed by the people who participate in it. In this, the commons becomes more like an eco-system, or self-managing human communities in history.

Stakeholders

Key stakeholders are the permaculture students who 'care about the way the world is and how it will be', together with a 'desire to make a better life for themselves and those around them' in terms of a sustainable society. Students are often self-employed, working on community projects and working towards running their own sustainable business. Students seem to be mainly women, although men do become involved as well. The staff are experienced permaculture designers, with a range of backgrounds including 'food security, affordable energy and community currencies', business management, education and health.

Other stakeholders include organisations such as the Refarming project linked to from the Northern School website, which applies permaculture principles to develop a technology led farming solution, using aquaponics, LED lighting and artificial environments to produce crops (and fish) that can be designed for flavour at the growing stage. Their farm in a container can be set up in an urban environment to grow food there and then at an accelerated pace but reducing 'food miles'.

The Institute is one of a 'global network' of similar bodies, inspired by the work of Bill and Lisa Mollison's original Permaculture Institute which not only co-ordinated the worldwide concept of what permaculture is, but also had a registry of accredited teachers. The Permaculture Research Institute is taking on this role, with the endorsement of the Mollisons, thus in effect becoming the overall body that oversees permaculture worldwide. In the UK, the Permaculture Association is developing its own registry, commenting that 'teaching is an activity where reputation is everything'. One difficulty that, in order to encourage the rapid spread of permaculture, individuals who had completed the initial 72 hour course could start teaching others straight away, leading to various individuals setting themselves up as permaculture teachers, 'hi-jacking' the core intellectual property in the process.

Publicity and Recognition

The Northern School and Permaculture Institute seem to keep a fairly low profile, relying on personal recommendations and getting to know people before they become formally engaged. This could be due to limited capacity, as each diploma-holding permaculture designer (who took years to gain this recognition) can only have 12-20 apprentices, who in turn will take years to gain their diploma.

Although the Northern School list the world-wide co-ordinating body Permaculture Research Institute on their website, there appears to be no corresponding recognition by the Research

Institute.

Potential Future Development

The Northern School website 'General Forum' is empty despite having been created months before, as is the Community Traders 'noticeboard'. Both of these could be developed further, as well as registering with the Permaculture Research Institute.

The Northern School of Permaculture has worked to the master-apprentice model from the beginning, so it could become 'like Linux', in terms of the School and Institute being based on shared expertise, a 'semi-private' body of knowledge of how to organise and deliver permaculture design courses. The content of these courses is part of the 'global commons', which open source technology enables to be shared around the world.

Social media is being used by permaculture designers, particularly Facebook. The Northern School maintains a Facebook page but it is not easy to find via search engines. However, the closed nature of social media channels such as Facebook and Twitter may not be congruent with the values of the School and Institute.

Considering the guild concept raises the issue of leadership and succession planning, where it takes years to find and nurture a successor. This is particularly an issue for the Northern School of Permaculture, where at the moment Angus is the sole person in charge.

Sources for this document:

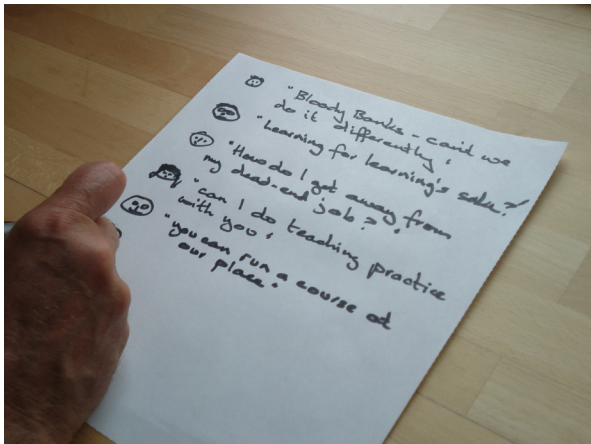
- Previous knowledge of the Northern School of Permaculture before the research project started.
- Conversations with Northern School founder Angus Soutar and other stakeholders.
- Email correspondence with the Northern School of Permaculture and with stakeholders.
- The Northern School website
- Publicly available information on the Northern School of Permaculture Facebook page
- Internet searches for the Northern School of Permaculture

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Design Process and Outcomes - The Northern School of Permaculture

Meeting with Angus and Krysia Soutar, co-founders of the Northern School of Permaculture



The design process was structured around a number of questions:

- Would you agree with these values?
- Are there any other values that would be applicable to the Northern School?
- Do these personas represent your stakeholders?
- What structures would work for the guild?
- Would the personas engage with the guild?
- What are the practical implications?
- Is this a useful research technique?

Would you agree with these values?

The core values for the Northern School of Permaculture were identified from analysis of the organisation description considering Schwartz (1992), Ryan and Deci (2000) and Hoggett (2009) as:

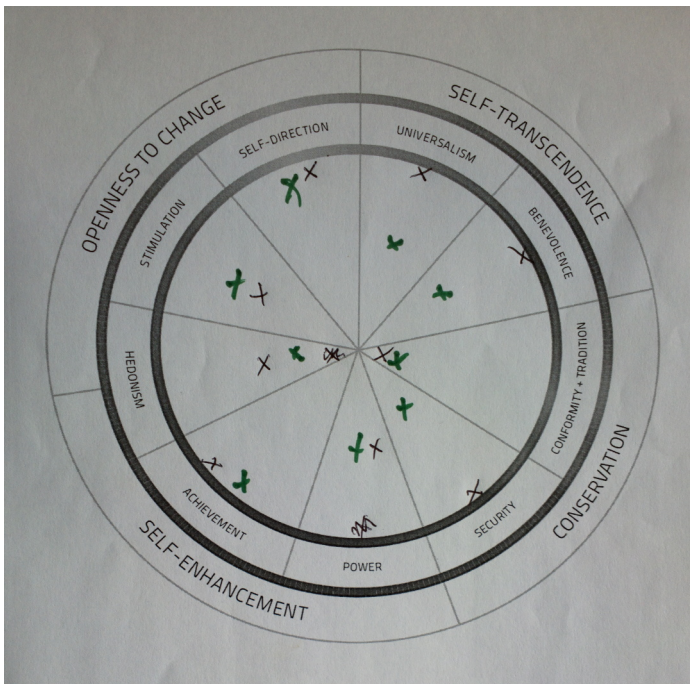
- Relatedness
- Universalism
- Achievement
- Repatriation
- Honesty
- Autonomy

They agreed with them all, particularly repatriation, not only in terms of dealing with the damage that modern society has done to the environment, but also in setting up an alternative structure to repair the 'damage' done to the intellectual property of permaculture itself.

Other values they would identify with include attribution, recognition and respect, the latter for other people's work in terms of acknowledging their authorship, together with:

- The power to change things.
- Safety and harmony of eco-systems.
- Risk-taking in organisational terms to achieve greater objectives.

Considering the values diagram as adapted by Holmes et al (2011) from Schwartz (1992), the Northern School identified the values below for both their students and facilitators:



The Northern School identified themselves as 'Yellow' on the 'Zones of Deep Values', which is described as 'Finding an appropriate way of being for a balanced and sustainable system' (Cowan and Todorovic 2000), however they see themselves as potentially going beyond this, avoiding the 'abuse of vegetational concepts' implied in this value system.

Other values identified by the Northern School from the 'Values, Beliefs and Behaviours' grid were:

- Accountability
- Achievement
- Balance (home / work)
- Commitment
- Community involvement
- Competence
- Cooperation
- Creativity
- Environmental awareness
- Ethics
- Excellence
- Fairness
- Future generations
- Health
- Honesty
- Humour

- Independence
- Integrity
- Making a difference
- Mission focus
- Personal growth
- Respect
- Responsibility
- Self-confidence
- Self-discipline
- Trust
- Vision
- Wisdom

Do these personas represent your stakeholders?

Six original personas were prepared beforehand, plus a blank one to add to:

- Caring Claire (wanting to make the planet healthy again).
- Worldly William (wishing to live in harmony with nature).
- Friendly Freda (it's all about relationships)
- Permaculture Petra (wants to get on with making a difference).
- Diploma Diane (success in achieving the award of a permaculture diploma).
- Resistant Robert (wonders about the legitimacy of the course).

They agreed that they represented stakeholders then offered many more, not named but expressing values, feelings and beliefs including:

- Being relaxed about change.
- Angry and want to know how to make a difference.
- Sad about the current planetary problems.
- Willing to undertake community cooperation.
- Leadership, both male and female.
- Children being able to learn about eco-systems.
- Angry about the current financial systems and want to do things differently.
- Gain satisfaction from learning for its own sake.
- Want to move on from their 'dead-end job'.
- Offering to participate in organising courses by teaching, publicising it, offering a venue, offering accommodation.
- Believe they can negotiate if they find it difficult to pay.
- Comfortable with reducing the gap between work and home life.

See photos on the next page.

"DIPLOMA" DIANE



"I DID IT,
FINALLY GOT
MY PERMACULTURE
DIPLOMA"

"PERMACULTURE" PETRA



"I LIKE THE
SCHOOL'S NO-
NONSENSE
APPROACH"

"FRIENDLY" FRIDA



"I QUICKLY
REALISED THIS
COURSE WAS ABOUT
THE RELATIONSHIPS
YOU MAKE"

"RESISTANT" ROBERT



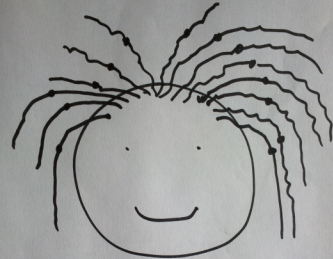
"WHO IS
ACCELERATING
THIS COURSE,
ANYWAY?"

"WORLDLY" WILLIAM



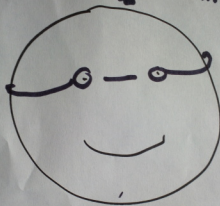
"I WANT TO
CREATE A
SOCIETY WHERE
PEOPLE LIVE
IN HARMONY
WITH NATURE"

"CARING" CLARE



"WE NEED TO
MAKE THE
PLANET
HEALTHY AGAIN"

Relieved about charge
angry people and
they want to know
how to make a
difference



about the current
planetary problems

Community
cooperation

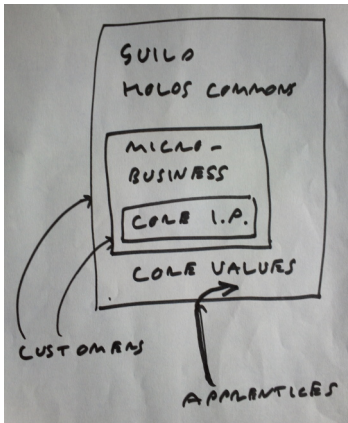
- "Bloody Banks - can't we do it differently?"
- "Learning for learning's sake?"
- "How do I get away from my dead-end job?"
- "Can I do teaching practice with you?"
- "You can run a course at our place."
- "I'll do the website/publicity for you."
- "Do you have special terms for the unemployed?"
- "Can I bring my child with me?"
- "I'll organise the meeting for you."
- "You can stay at our house."

Leaders

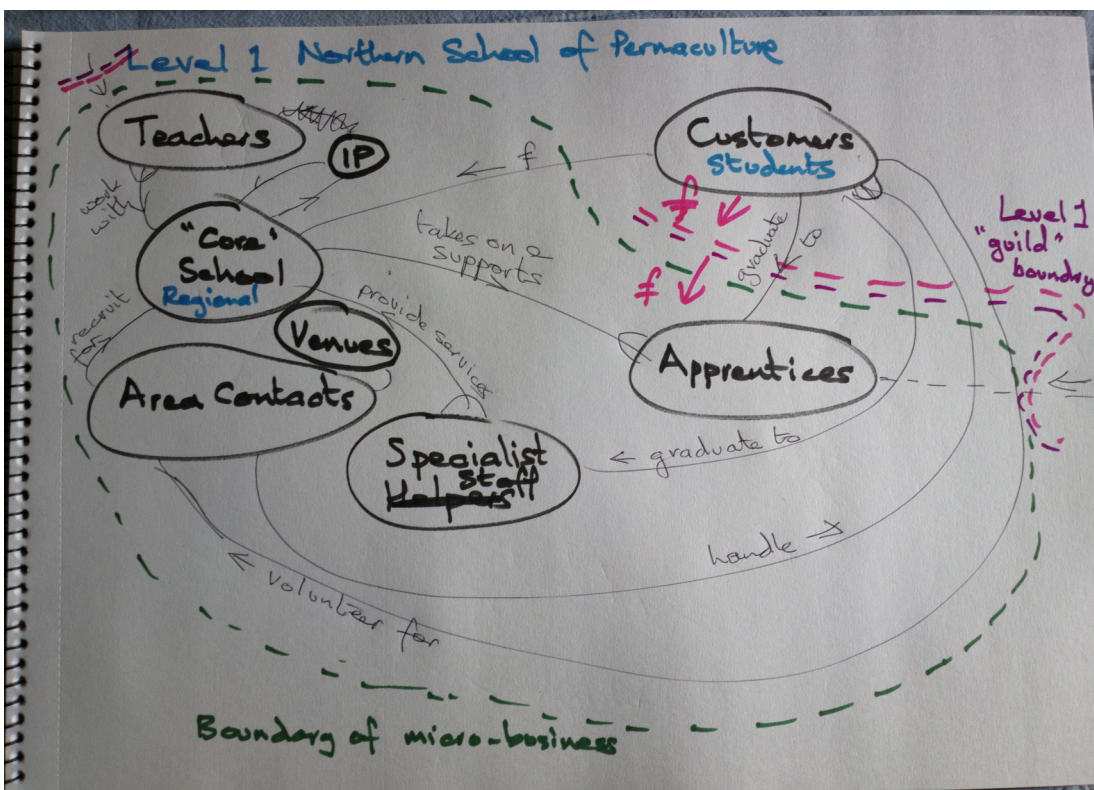
children
learning
about nature's
Eco systems

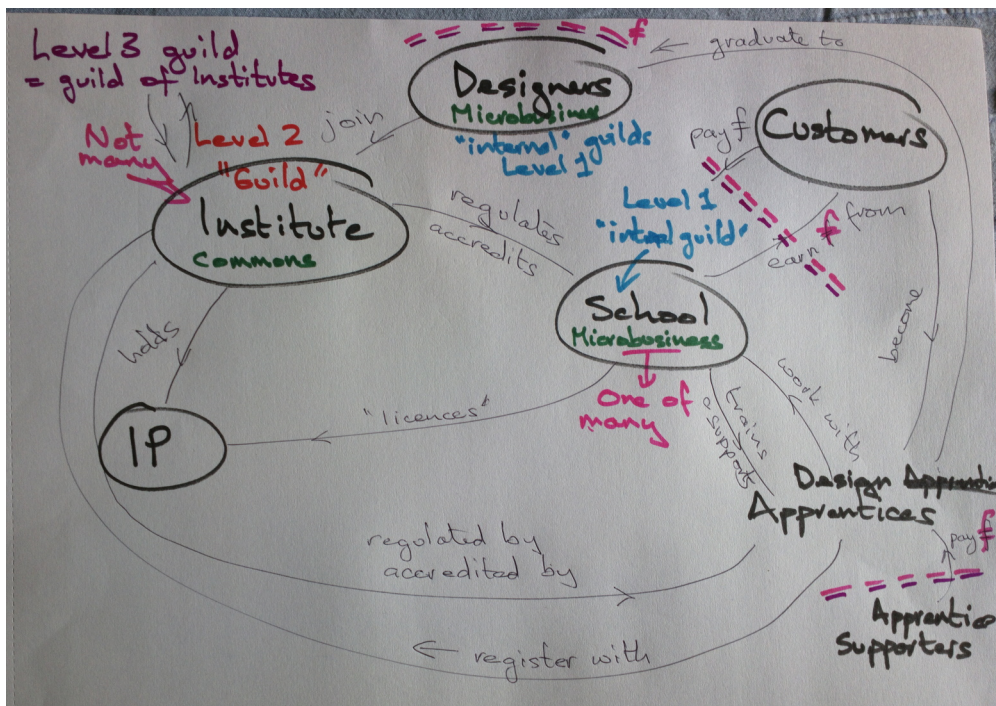
What structures would work for the guild?

After some discussion, they agreed with the offered structure for the guild, making a modification to involve apprentices within the guild (shown by the arrow crossing its boundary) rather than interfacing with it at its boundary.



They then elaborated on this structure to first create one for the Northern School of Permaculture (Level 1), which itself is a member of the guild of the Permaculture Institute of North Britain (Level 2). The Institute is negotiating to become accredited by the international Permaculture Research Institute, who are effectively setting up their own guild structure (Level 3).

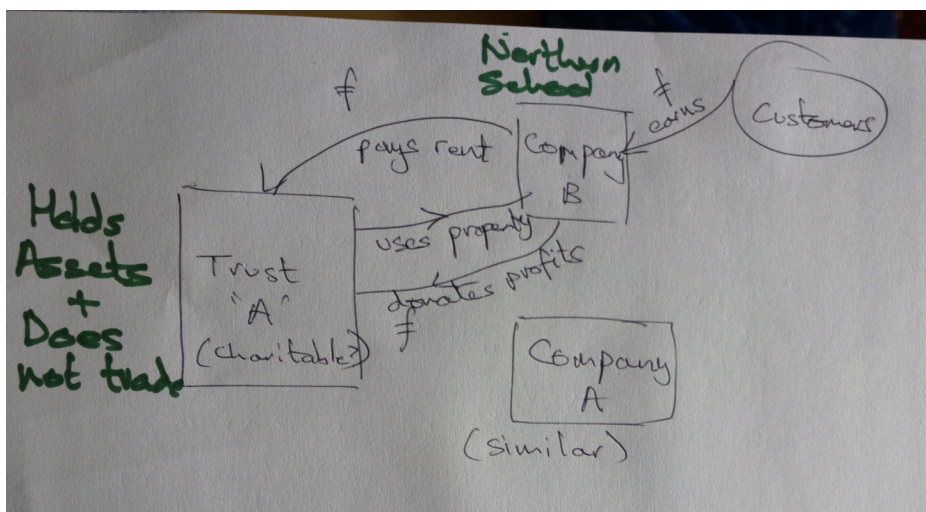




The Permaculture Institute holds the core intellectual property, but the School, operating as a micro-business, can develop its own core IP centred around the delivery of courses, while being able to draw on that of the Institute as a member of its guild. In turn the Institute itself draws on the original permaculture core IP. Each teacher who is accredited by receiving their diploma from the School can set up as a micro-business (and hence create their own guild), creating a 'fractal' structure of guilds within guilds.

The guild concept is very much aligned with the values of the School and Institute, a 'name for how we do business'. It is also a 'pattern' that fits with permaculture, promoting a 'village' way of being, an economy comparable in scale to a small medieval town or a current Swiss canton which can, however, exist within a modern city.

Considering governance of the guild, a small core group of about 3 individuals can undertake this task, but they in turn need 'clarity' about the governance structure, this is an example of the 'application of permaculture design in action'.



Would the personas engage with the guild?

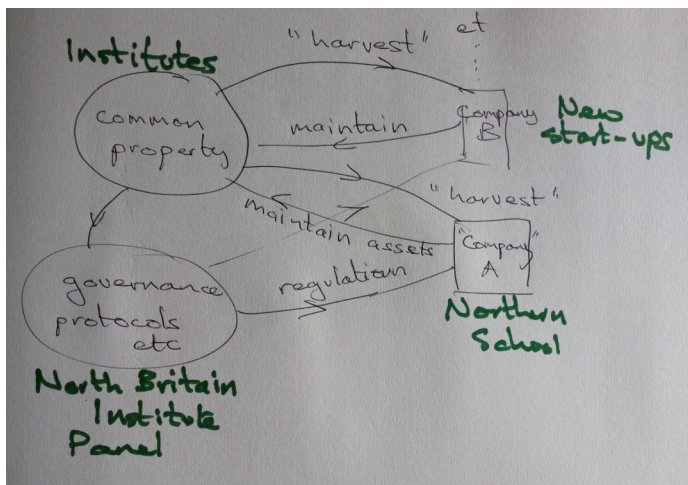
The personas could engage with the guild as customers, students, apprentices, permaculture designers, teachers and customers. They can become area contacts, offer venues and set up their own micro-businesses.

What are the practical implications?

There are 'no alternatives to doing this guild', as 'capitalism has changed' following the financial crises of 2008. In terms of the values of the School and Institute, they 'can't see any other way of doing it' in the development of a sustainable business, first develop the team and relationships, which then leads to the guild, then the micro-business is founded to undertake the work of the guild, eventually becoming viable as a business.

This process of growing a business through a guild means that there are 'no investors other than those who are working in it', and hence no external debt. This gradual process could mean a number of people can invest two hours a week in the project, only giving up their other work when there is a prospect of it offering an alternative way of making a living. Not everyone is in a position to offer this investment of time, however, particularly 'wage slaves'.

Making this gradual investment of time to 'organically' grow the guild and the business is a considerable commitment compared to going to the bank and getting a loan, but this ensures a self selection process of the 'most highly motivated people' being involved, who 'want to make a difference in the world'. Not everyone can be involved, 'we're not a charity'. Also, the business isn't burdened with paying a loan back, with interest. This process is succeeding in that permaculture courses offered by the School are paying teachers at a higher effective rate than those backed by the Worker's Educational Association within a more conventional adult education structure.



In practice, the micro-business could be more about several people getting some income from it rather than one or two making a full-time living from it. This could work as part of a portfolio approach, where each individual is a member of many guilds, participating in a 'matrix of interactions', gaining work from all of them.

Is this a useful research technique?

Participants agreed that it was, one commenting that they had 'enjoyed the experience, helped me think'.



References

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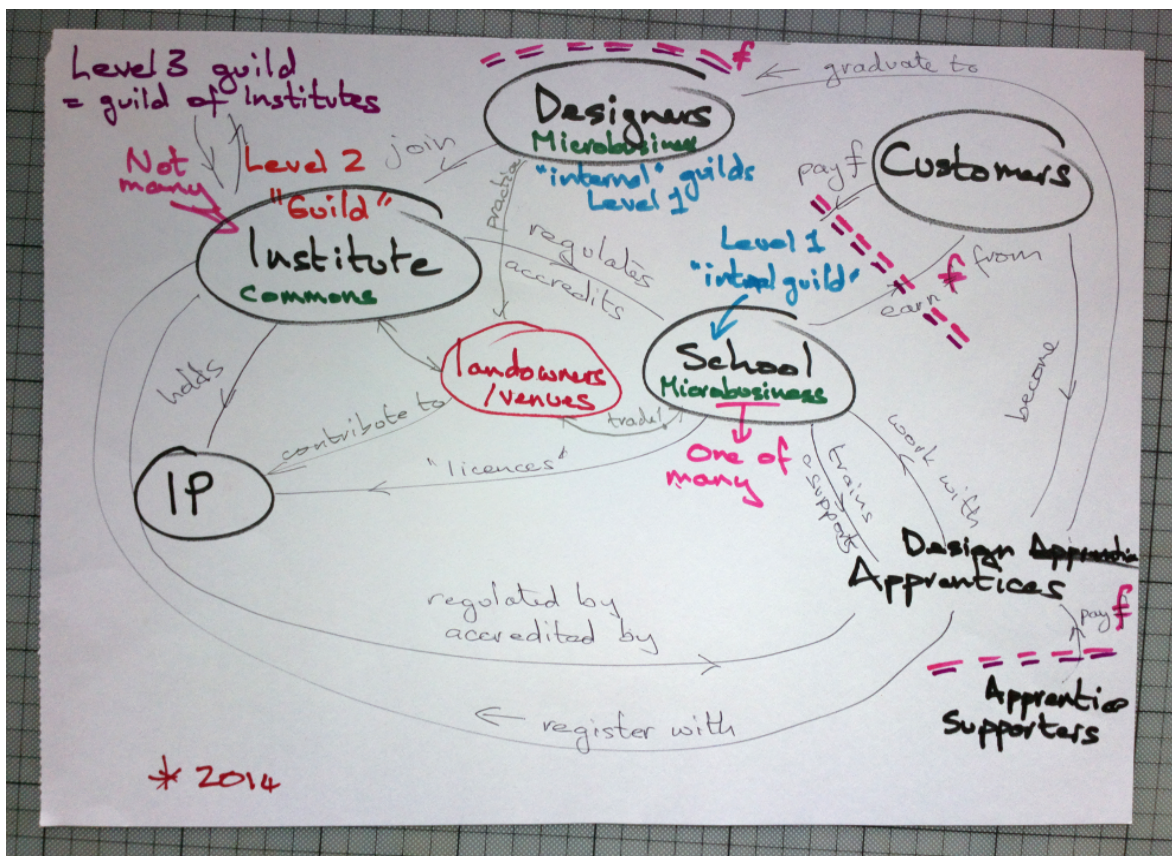
HighWire Research Project

Sustainable micro-business: can virtual guilds offer a solution?

Design Process and Outcomes - The Northern School of Permaculture

Meeting with Angus Soutar, co-founder of the Northern School of Permaculture at the CommEnt office, Darwen, on the 12th August 2014.

Draft for approval by organisation



1) Do these personas represent your stakeholders?

Angus observed that the personas seemed to be 'compendiums of people' who engaged with the Northern School. Considering Resistant Robert, there were two kinds of resistance, that to how the Northern School approaches recruiting and training students and to the whole idea of permaculture. The latter individuals will demand, "show me something that works", where 'such a person is more likely to reject our rivals than us'. Appealing to such individuals entails under-promising and over-delivering, also asking them "is what is happening now sustainable", where 'they can only answer "no"'.

Angus found the personas 'fascinating', but there are also additional stakeholders that engage with the Northern School that aren't represented by the personas including the well-to-do (partly represented by Caring Claire but she 'cuts across economic divides'). The personas also don't represent people who are in a successful job, who have money and the right attitude but don't have a lot of time, often dropping out of the course. Such successful people are 'vital to keeping the whole

thing going, also retired people'. Retired people are partly represented by Angry John, in reality they are quite sensible people who don't go to extremes. Overall the personas have captured some of the 'very rich' stakeholder environment of The Northern School of Permaculture, but other stakeholders that are missing include the people who want to travel, particularly young people who don't want to go to university, feeling it's not worth their while.

Discussing potential stakeholders further they tend to either be under-employed and have no money or have plenty of money but are 'horrendously busy', over-committing and not being able to finish the course they have paid for. People who are attracted to permaculture feel 'trapped', where permaculture can be an escape route. These personal circumstances makes it difficult to find people who are at the right stage in their lives to be able to help get the guild model going. It needs 'land-owners with money', however even these individuals can have problems, like spending all their money on getting the land then not having basic facilities such as toilets for people to use while working on it. Part of this problem is the price of property in the UK, also issues of ownership and access to land. Projects that try to overcome the problems of ownership such as Incredible Edible in Todmorden with their 'guerilla gardening' on public land have their own problems with 'theft, vandalism or people saying no'. The problems that the Northern School are experiencing stem from societal pressures, particularly access to land and money. However, 'we have all the technology we would ever need'. The guild model de-monetises the process of building a business, but it involves people investing unpaid time and 'sharing risks and reward' to build it up. However, the same societal pressure that mean people don't have the time for volunteering or other unpaid work also impacts on their ability to help build a guild.

There aren't any personas with responsibility for bringing up children or caring for elderly parents, these individuals can 'disappear for weeks at a time', making it difficult for them to be involved. The guild model needs to be flexible with 'redundancy' built in so people can fulfil other commitments. The guild can become more of a 'way of life' rather than a job that is done at set times. The current pressures on people affects their ability to participate, modifying their behaviour despite their basic humanity and character, 'they have to be relatively free of pressures on family, money and interference from the State' to be able to participate in the guild. However, family relationships are now complicated, reflecting the 'break-up of the family in its broadest sense', and even where people have a good income and stable family there are always 'twists of fate' such as accidents. Overall, if people are busy with their own permaculture projects, Angus sees that as a success, but 'we need to capture some of that success'. Angus is 'most comfortable working with the landowners' at the moment.

2) How would the personas interact with the organisation?

The personas represent those individuals who are in a position due to their life circumstances of being able to interact with the guild but 'people have to come in themselves' not as a result of "marketing". Marketing can focus on values, where personas can help set up the tone of communications, enabling reaching people who can engage with the Northern School and 'repel the people who don't get it'.

Considering digital means of communication, there's currently a 'war' developing between those who use Facebook for all their online communications and those who do not, also between those who read and those who do not. Angus is fine with having a mixture of people on the courses, students have ranged from those in suits to Goths, but there is a problem with reaching them using digital media, which defies conventional market segmentation.

In terms of earning money, the focus has to 'come back to the School micro-business', this is where the money comes in. The guild model could be included in the course. 'From a financial point of

view this more of a hobby than a business' but the School is taking a 'strategic interest' in developing the guild, which makes it more than a hobby, even if it is not making much money at the moment. However, if the Northern School was run as a conventional business 'it wouldn't get off the ground' as 'discretionary spending is tightening all the time', so conventional trainers who demand payment in full upfront are likely to get no business. By offering staged payments and 33% discount for work helping to organise the course, Angus gets some business if not a lot of profit. He is concerned about the long-term viability of the guild after he retires, which could be in 10 years time, this is where the apprentices now can step in.

People who are getting involved at the moment appreciate the values and principles of the Northern School and are busy setting up their own projects, often in other countries, without direct supervision by the School. When the guild has stabilised from its present complex state to one where 'simple systems' can be set up, it will then offer opportunities to individuals who prefer a more structured work environment.

4) What are the implications for existing systems?

The value of on-line technology is a 'communication channel for people who already know each other', but Angus would 'question its value for people who don't know each other'. The guild is 'all about personal and professional relationships'. Angus offers the proposition that 'we can't build this on-line' but on-line communication can 'augment existing relationships' but 'can't build them'. On-line technology can be a 'tool' if 'wielded properly', but in the end 'people build relationships'. Current uses of digital networking technology such as Facebook or Twitter are a 'necessary evil', where users are having to 'keep up with it', including the fragmentation of those who choose one medium over another, such as refusing to use email in favour of Facebook. Second order tools are now appearing, which can post to multiple networks at once. Networks such as Facebook are 'not business productivity tools', they are 'entertainment tools', with the exception of Linked In. Networks such as Twitter and Facebook 'ignore hypertext', instead presenting a 'waterfall of information' that people passively absorb instead of seeking it out, which Angus finds 'psychologically worrying'. Such networks also facilitate bullying, 'in cyber-space no-one can hear you scream', where the separation afforded by technology and the lack of consequences lead to people behaving in ways that they wouldn't in person. Overall, the 'corporate takeover of the Internet will continue to diminish the utility of it', but its 'real potential is open source development'.

Angus couldn't have developed the Northern School without the Internet but it sometimes 'cripples development', not helped by 'IT fascism' from the government which is 'squeezing diversity out of the system'. The structure of the Northern School guild is 'complex so it has to be face-to-face', reflecting the complexity of its work but the work can be simplified to work online, breaking down into connecting, co-working and asking for information. A simple forum, such as those for Ubuntu, Drupal and Accounting Web would satisfy the requirement of a 'system that allows people to interact' (rather than the illusion of interacting as with Facebook), where 'if you make something complicated people aren't going to use it'.

Angus isn't sure if there is 'any connection between the personas and digital technology', but 'perhaps personas could be used to explore this'. Some people, perhaps the majority, find the Northern School initially through digital media, but 'word of mouth' is still important. There is still digital exclusion, in particular men who tend to be either 'nerds' or they 'can't be bothered with the technology', preferring to get out there and do things instead. However, their choice reinforces the 'digital divide'. In contrast, women are more likely to use digital media. Angus identifies the 'challenge of how we use digital media to reach people who don't use digital media', seeing it as a 'necessary evil', like owning a car. Angus himself works 'outside the digital world', giving training, growing plants and forming organisations. In creating a sustainable society, what role can digital

technology play?

3) How can the guild structure created in the first workshop be developed further?

Considering the guild structure from the last workshop, 'there's 10 years of work gone into this' which the last workshop helped bring out as a structure for the guild. The discussion in this workshop helped Angus to realise the importance of his experience during the past year of landowners and people who could offer venues as guild members, updating the model as shown in the photo on the first page. He emphasised that the School isn't about owning assets such as land or buildings, its assets are people and knowledge. At the moment the School doesn't exist as a legal entity, but 'will do at some stage'.

5) Is the use of personas a useful research technique?

Angus found the personas a useful technique, as a 'springboard for the whole process' helping with 'thinking about people', with the overall process 'crystallising out the lessons that have been learned'. The Northern School could use value-led personas in recruitment to gain an 'early indication if people will fit in', based on previous experience. Individuals who correspond to the personas of 'Bullshit Billy' or 'Manipulative Mary' won't be encouraged to participate, while 'Honest John' who shows a willingness to learn will be.

Angus feels that personas could be a valuable contribution to marketing, 'as an effective way of extending classical marketing practices into complex and digital worlds', in particular they could develop the concept of marketing archetypes further, particularly in the context of innovation, where archetypes such as 'early adopter' could each be represented by a persona that emphasises their values. Personas could be used to represent uses of ICT, such as how they use mobile devices and in general could be used in place of individual case studies and interviews to aggregate experience and avoid issues of confidentiality and statistical significance.

HighWire Research Project

Sustainable micro-business: can virtual guilds offer a solution?

Organisational Description - Shrimping It

Approved by organisation with minor edits on 9 July 2013

Introduction

Shrimping It was founded by Cefn Hoile, an 'inventor' who previously undertook web development work for BT. Cefn is keenly interested in open source software and hardware, including 'laptop Shrimping', customising old laptops to perform specific functions such as an MP3 player with 'colour graphic' display. The Shrimp is a development of an Arduino clone micro-controller originally used to customise laptops.

This project is a development of his PhD research at Lancaster University, which focused on alternative educational methods that engaged students on a practical level. Originally a website and Twitter feed offering information on how to build an Arduino clone from scratch and a forum for discussing this idea, Shrimping It evolved with a community of makers in autumn 2012, with Cefn starting by first offering designs as a 'resource for non-specialists' based on existing publicly available information, then workshops, then bulk buys of components to give away then finally giving in to demand and offering complete kits.

The discussions on Shrimping It's Twitter feed tell the story of the project's evolution, with a focus emerging from the community complementing the original PhD research. From the beginnings in August 2012 with the 'first Shrimp' and the first workshop in Morecambe, the project now has a portfolio of kits, workshop programmes and a community of facilitators in response to the high demand from teachers and adult education classes. It has now grown to the point where as a personal project it is 'getting out of hand' and could become a micro-business.

Philosophy

There are shortcomings in the existing education system, particularly in Science, Technology, Engineering and Mathematics (STEM) subjects, where an overly theoretical basis alienates pupils, particularly those in deprived areas. In order to reach these individuals, both as children or as adults, an approach that is personally motivating and meaningful to them is needed. The growing "maker" culture, based on cheap electronics and focusing on projects that can be made in a domestic environment from scrap materials, can potentially offer this motivating factor. Maker culture also relates to the one area of education that pupils do relate to, that of information technology, relating to academic research that indicates that people learn best when they are making something.

The Arduino micro-controller is a scaled down computer on a circuit board the size of a credit card. All the electronics are exposed, inspiring a greater understanding of how it works. The Arduino provides digital and analogue inputs and outputs and can be programmed using any personal computer with a USB connection. Both hardware and software are fully open sourced. Since its introduction in 2007, the Arduino has become the basis for many maker projects. Events such as 'Howduino' have been very popular, inspiring many to take up electronics who might have otherwise not done so. However, the cost of an Arduino plus supporting components can be in the region of £60, plus a computer is needed to program it. This puts it out of reach of those who might

benefit most from the learning afforded by this system.

The Shrimp strips down the Arduino to its essentials, then replicates it with inexpensive components so its functionality can be achieved for less than a tenth of the cost (£1.40 instead of £20) if the parts are bought in bulk. A re-useable USB interface completes the kit for a total price of about £3. As well as reducing the cost, makers of the Shrimp handle the components themselves, which can be assembled on a re-useable "breadboard", then soldered permanently on "stripboard" to build into a finished project.

This method of construction not only reduces the cost of the Shrimp, but it also 'teaches the fundamentals of electronics prototyping, such as the use of a breadboard, what a capacitor is, etc. etc. and exposes the details of what the micro-controller pins do', enabling people to get involved at the beginning of the design process. There are commercially available Arduino kits, which use a pre-made printed circuit board (PCB), which means that all the hobbyist has to do is follow a diagram without understanding how the kit is designed. The Shrimp offers more scope for flexibility and creativity and ultimately for deeper learning through 'comprehension and expression'. Others have applied this philosophy to make PCB to their own designs including a tiny version with surface mount components, this approach is encouraged by Shrimping It.

Current Work

Shrimping It offer workshops in Morecambe and elsewhere hosted by Cefn or independent facilitators who draw on information from the website and make use of the kits of parts offered by the project. One such workshop was held on 19 June 2013 at West End Impact Centre with Morecambe Arts Group, facilitated by Cefn and assisted by two others who were both interested in facilitating workshops themselves.

Facilitating the workshop involves a lot of preparation behind the scenes, starting with assembling the kits which involves not only gathering bags of components from the bulk boxes but also even before that, modifying the USB interfaces and "flashing" the Arduino software onto the micro-controllers. The presentation itself needs to be checked and updated if necessary, using the open source Inkscape running on the Ubuntu operating system. At the moment Cefn is doing the preparations and presentations on an ad hoc basis and not charging for his time, but future work may need a "donation" to continue as demand grows.

Cefn started with a presentation of the possibilities of using electronics, including illuminated clothing, laptop lids that respond to music with coloured lights and even an Angry Birds game controller. The presentation then described the Arduino micro-controller, and how the Shrimp was a build-it-yourself clone. Example projects using the Shrimp were handed round for participants to take a look at.

He then handed out bags of components and breadboards to plug them into. Step-by-step instructions were shown on the screen, enabling each participant to assemble their own Shrimp, even if they had no previous experience of electronics. Donated laptops running the Arduino IDE environment were used to download the software onto the completed Shrimps. After getting a single LED to blink on and off, participants then added more LEDs and downloaded the 'Persistence of Vision' program that enabled the completed Shrimp to spell out words when waved in the air. This had been programmed by Cefn using the typeface from a Commodore 64. Participants were from a very wide range of backgrounds and interests, however most managed to get it working, with only one declining to get involved, doing some drawing instead. They were then encouraged to take the kit home and experiment further, with other projects to try on the Shrimping It website.

At the moment Cefn is 'fielding requests from people' for paid workshop facilitation work, without the capacity to fulfil them, indicating lots of potential for a community of facilitators. This is even without any explicit promotion of the workshop offering.

Stakeholders

The key stakeholders, who could become the members of a guild, are the facilitators using the Shrimp kits for their own educational work with children and adults. Other stakeholders include teachers in local schools, who are very enthusiastic about the project and are prepared to pay for sessions using the Shrimp. The wider group of stakeholders include the open source and "mendr" communities, both of which have shown strong interest in the Shrimp.

Publicity and Recognition

The project has worked with Manchester's MadLab and the Catalyst Project in Lancaster, but gained a higher profile when they participated in the Makerfaire UK event in 2012, offering kits of parts for the first time. They were also Bridge Rectifier 'hackerspace' in Hebden Bridge in Feb 2013, also the MadLab event in December 2012.

Shrimping It has been covered on the Hackaday and Lifehacker websites, both very high profile within their respective communities. Cefn has joined in with the comments on both these websites, explaining the philosophy behind the project and offering detailed technical information.

The Shrimp has been incorporated into projects including urban aquaponics, turning everyday objects into touch controls, various robots and a wearable 'EEG Data Visualising Pendant' mood display. Groups such as the Southampton SouthHACKton are sourcing the components, replicating the Shrimp and offering their own workshops.

Potential Future Development

The workshop sessions on the 19th June was funded by Morecambe City Council potentially leading to further paid work, thus moving towards the possibility of Shrimping It becoming a business. Considered as a brand, Shrimping It offers the unique combination of documentation on the website, outreach work, accessible design and a viral eco-system, where face to face contact is key to passing on experience and knowledge. Shrimping It could develop a 'manifesto', awards and certification with Cefn 'influencing things', not quite a benevolent dictator. This then will create a core that a community can gather round which could develop into a guild. Part of creating the community could be some form of admission procedure to the shared workspaces, operating like current open source projects. The strength of the open source model is that others creating micro-businesses using the brand are not in competition, they strengthen the brand so that all benefit. Some form of affiliation procedure could ensure that this happens, almost operating as a franchise, reinforced by the manifesto. There needs to be a process of 'boundaries and scoping' to balance the core of Shrimping It with its community while maintaining a clear identity.

Establishing the Shrimping It project will involve getting 'makers' on board, also forums could be valuable to encourage sharing of projects and giving feedback on any mistakes, at the moment Cefn 'doesn't hear enough'. The website could have a clearer statement of objectives to focus the project, with the open source Github system enabling sharing and developing of projects including collecting 'bug reports'. Use of social media and podcasting could be helpful to promote the project, and Twitter is already a major channel in use through the @ShrimpingIt account.

There needs to be a process of getting the name out there to groups of people, including the maker

community and the open source community. This can be by attending events such as Barcamp Blackpool, aiming to stimulate activity and spread the word. However, this does leave the issue of how to involve those who aren't already involved in similar activities. One method could be informal communications, such as with local authorities and others looking for facilitators for educational events, this is where face-to-face working is important.

Cefn runs the Shrimping It website, thus there is scope for him to offer incentives towards a convergent community such as offering @shrimping.it email addresses. There is the potential for micro-businesses to develop around the core of Shrimping It. One such business could be sourcing and selling the component packs, others could be creating projects building on the kit.

Sources for this document:

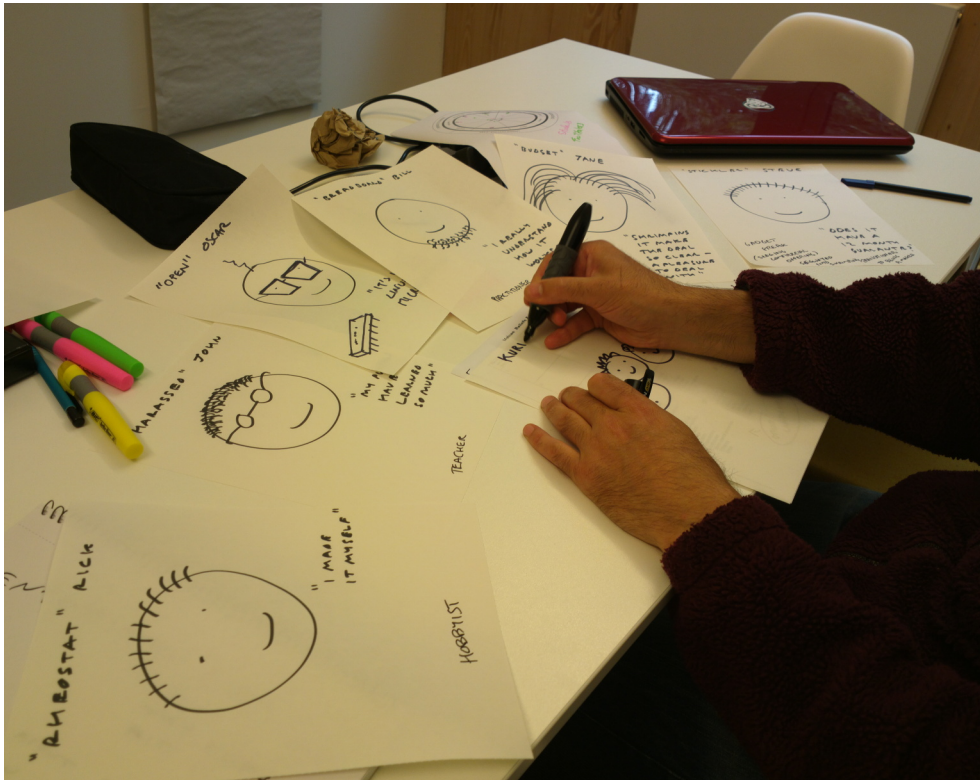
- Previous knowledge of Shrimping It before the research project started.
- Academic papers by Shrimping It founder Cefn Hoile.
- Participant observation of workshops facilitated by Shrimping It founder Cefn Hoile.
- Conversations with Shrimping It founder Cefn Hoile and potential independent facilitators.
- Email correspondence with Shrimping It and with stakeholders.
- The Shrimping It website.
- Publicly available information on the Shrimping It Twitter feed.
- Publicly available information on the Shrimping It Facebook page.
- Internet searches for Shrimping It.

HighWire Research Project

Sustainable micro-business: can virtual guilds offer a solution?

Design Process and Outcomes - Shrimping It

Meeting with Cefn Hoile, Shrimping it on 5 August 2013 at HighWire, Lancaster University



The design process was structured around a number of questions:

- Would you agree with these values?
- Are there any other values that would be applicable to Shrimping It?
- Do these personas represent your stakeholders?
- What structures would work for the guild?
- Would the personas engage with the guild?
- What are the practical implications?
- Is this a useful research technique?

Would you agree with these values?

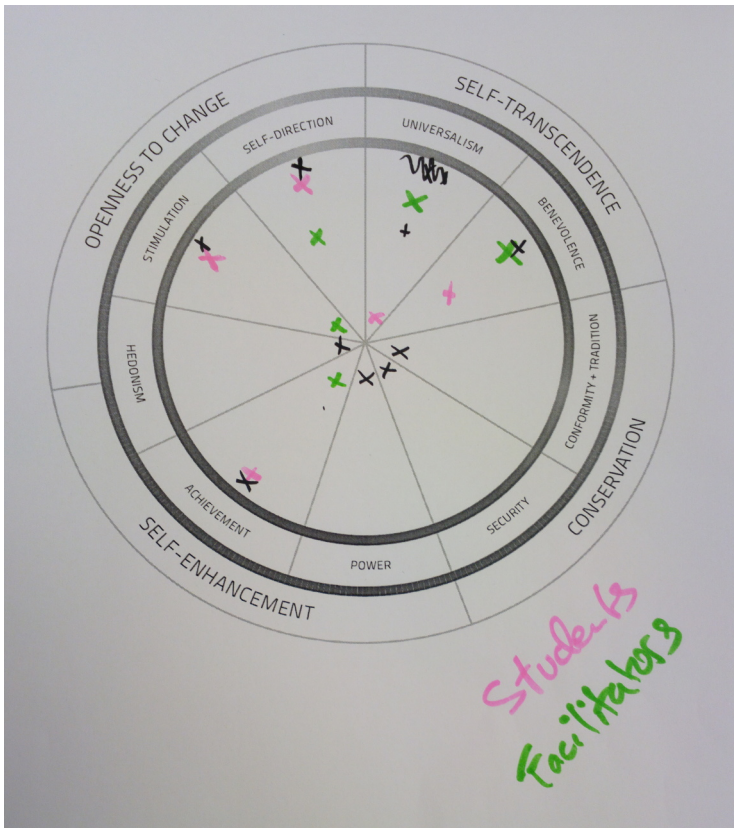
The core values for Shrimping It were identified from analysis of the organisation description considering Schwartz (1992), Ryan and Deci (2000) and Hoggett (2009) as:

- Transparency
- Honesty
- Competence
- Achievement

- Benevolence (added during the discussion)

Are there any other values that would be applicable to Shrimping It?

Considering the values diagram as adapted by Holmes et al (2011) from Schwartz (1992) Shrimping It identified the values below for both their students and facilitators:



Shrimping It identified themselves as 'Yellow' on the 'Zones of Deep Values', which is described as 'Finding an appropriate way of being for a balanced and sustainable system' (Cowan and Todorvic 2000). Other values identified by Shrimping It from the 'Values, Beliefs and Behaviours' grid were:

- Clarity.
- Community involvement.
- Enthusiasm (people choose the Shrimping It kits as they are 'cool').
- Humility ('we didn't invent this', all their work is built on the much bigger open source community).
- Making a difference.
- Open communication (spreading the word so the 'mission continues').
- Openness (open source).
- Quality.

The distinctive features of Shrimping It are:

- Allow development of prototyping skills.
- The kits are designed to allow an 'on-ramp' to electronics competence.
- There are a few designs that allow a 'curated experience', which can be a 'conduit' to other experiences.
- They are designed from the point of view of the person who knows nothing about

electronics.

Do these personas represent your stakeholders?

Five original personas were prepared beforehand, plus a blank one to add to:

- Breadboard Bill (experienced maker applying Shrimping It to their latest project).
- Budget Jane (school or council budget holder, drawn to the low cost of Shrimping It).
- Harassed John (teacher, using Shrimping It for the new curriculum).
- Rheostat Rick (enthusiastic maker learning new skills).
- Stickler Steve (not quite sure about it, looking for reassurance that it will work).

Cefn agreed they represented stakeholders, then added:

- Open Oscar (representing the values of open source).
- Foreign Johnny (the worldwide Shrimping community).
- Geek Daddy (buys high tech toys for the kids then plays with them himself).
- Kurious Kids (enthusiastic that they made it work).

See photos on the next page.

"BREADBOARD" BILL



"I REALLY
UNDERSTAND
HOW IT
WORKS NOW"

PRACTITIONER

"BUDGET" TANE



EDUCATIONAL
PURCHASER
POLICY MAKER

"SHRIMPING
IT MAKE
THE DEAL
SO CLEAR -
A PLEASURE
TO DEAL
WITH"

"HARASSED" JOHN



"MY PUPILS
HAVE
LEARNED
SO MUCH"

TEACHER

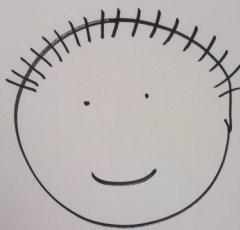
"RHEOSTAT" ALICK



"I MADE
IT MYSELF"

HOBBYIST

"STICKLER" STEVE



GADGET
FREAK
(SEEKING
COMMERCIAL
OFFERING)
SEGMENTED
INTO SHIRTING

"DOES IT
HAVE A
12 MONTH
WARRANTY?"
TRANSITIONING
TO BEING
A MAKER

"OPEN" OSCAR



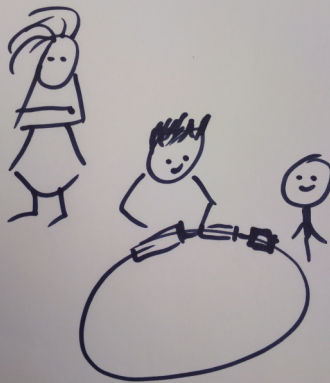
"IT'S LIKE
LINUX FOR
MICROCONTROLLERS"

FOREIGN JOHNNY

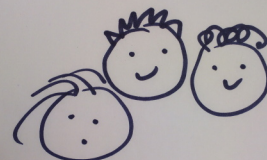


HOW DO I GET
STUFF IN DUBAI

"GEEK" DADDY



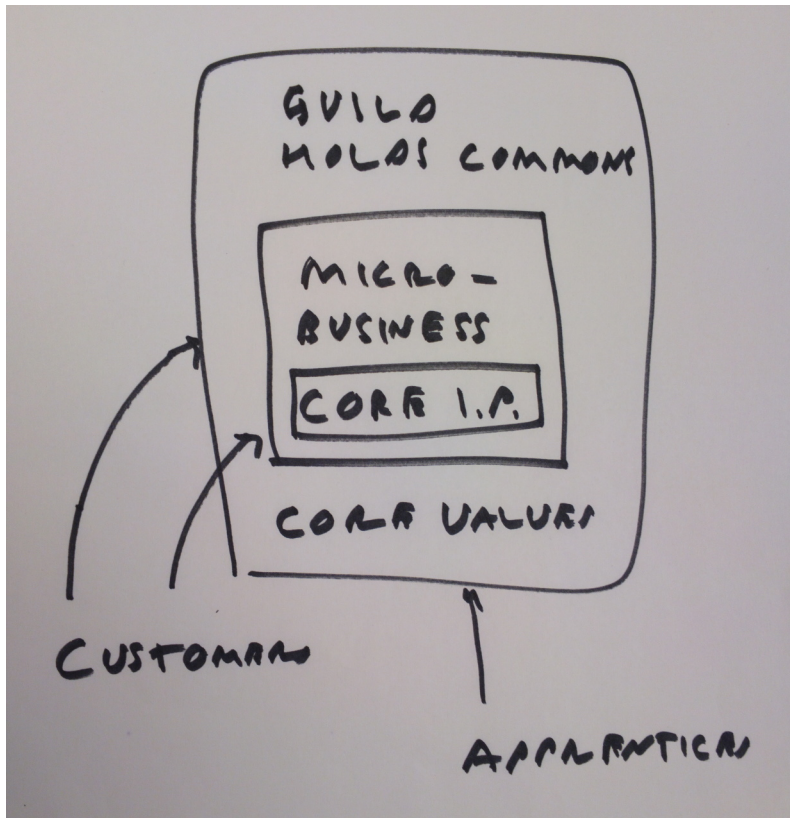
"KURIOUS" KIDS



"I MADE IT
FLASH!"

What structures would work for the guild?

Cefn agreed with the structure that was the starting point for the discussion (shown below), also with the statement that "the role of this research is in conceptualising the guild that is forming around Shrimping It". To illustrate this, he gave the example of a facilitator who effectively became an apprentice after approaching Cefn and helping out with some workshops. He then facilitated a high profile workshop at the BBC, becoming a fully fledged facilitator in the process. The guild in some respects is almost creating itself, one possibility could be to have a list of "approved" facilitators on the Shrimping It website, however this could be a problem if Cefn decides to let others access it.

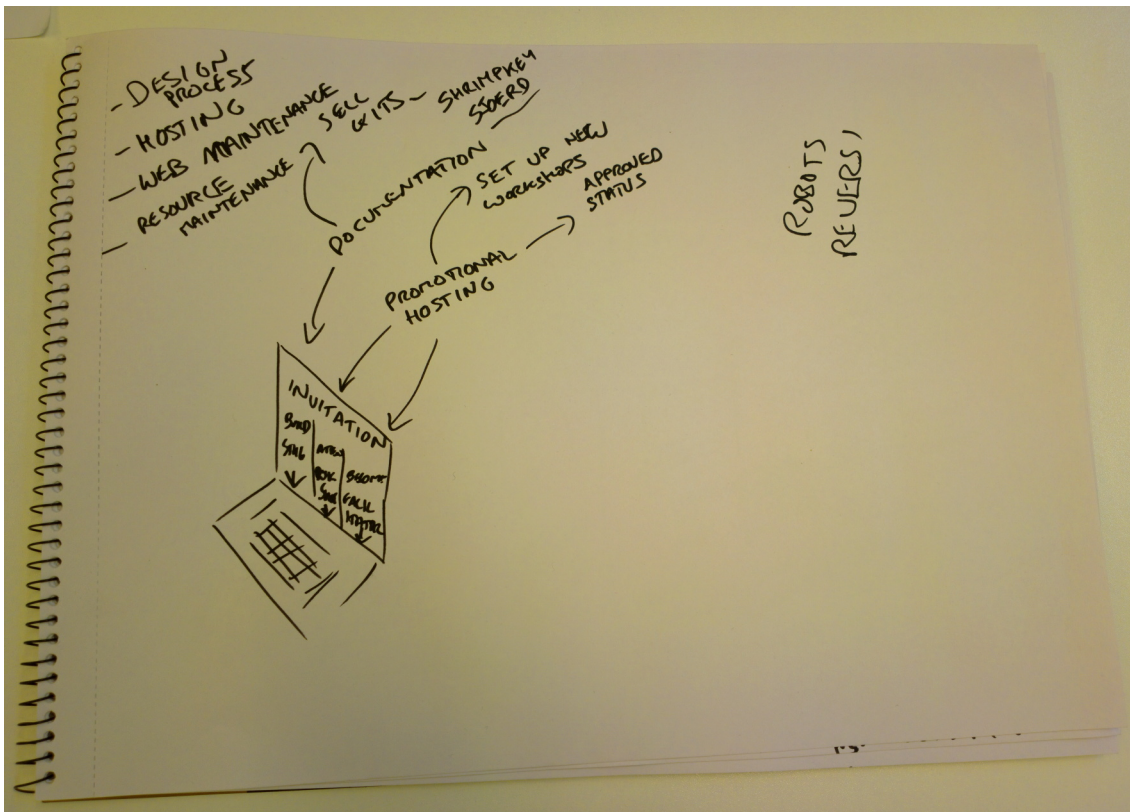


The guild concept could be promoted through the Shrimping It website, which could have three areas:

1. Build something.
2. Attend a workshop.
3. Become a facilitator.

Would the personas engage with the guild?

The personas represent people who are engaging with Shrimping It at the moment, hence they could all potentially engage with the guild. At the moment there is an informal apprenticeship, this is about 'managing the reputation' of Shrimping It. It works very much by "the law of two feet", people can engage with the project if they wish to and Cefn can promote anyone on the Shrimping It website at his discretion.



What are the practical implications?

Considered as a micro-business, Shrimping It has 'notional' products in the form of designs, plus actual products in the form of kits. These are complemented by services providing workshops.

The guild could play a role in 'brokering opportunities to learn'. It has evolved as a common resource led by the needs of stakeholders, particularly teachers who are affected by changes in the UK curriculum which favours the Shrimping It approach.

Shrimping It needs resources, there are things to be paid for, plus Cefn's time which can be accounted for in cash terms. A recent example was the decision to use 'battleship' numbering in presentations to enable components to be located accurately on breadboards during workshops.

In terms of Shrimping It offering paid work, bagging kits and selling them for twice wholesale price is worth doing for the time it takes in financial terms. Designing new kits takes time which is not necessarily paid for (but MadLab did pay for the Persistence of Vision design) but the time taken will be eventually paid for in terms of kit sales. Cefn is considering Kickstarter-type funding for future designs. All designs go in the public domain. Selling kits, plus facilitation work, which starts at £300 per day but can go up to £1,500 a day, could enable Cefn to make a living.

Considering the value of openness, this has created a market for Shrimping It with the community creating the capacity for a business at its core, taking a 'small share of a big opportunity'. A strength of this approach is that it evolved organically, with no outward investment needed. Shrimping It might have worked as a more conventional business, selling educational electronic kits with copyrighted designs.

Considering 'what are the advantages of the open source model', one is 'good vibes', which comes back to values, and a personal 'resonance with open source'. It would be possible to create zero

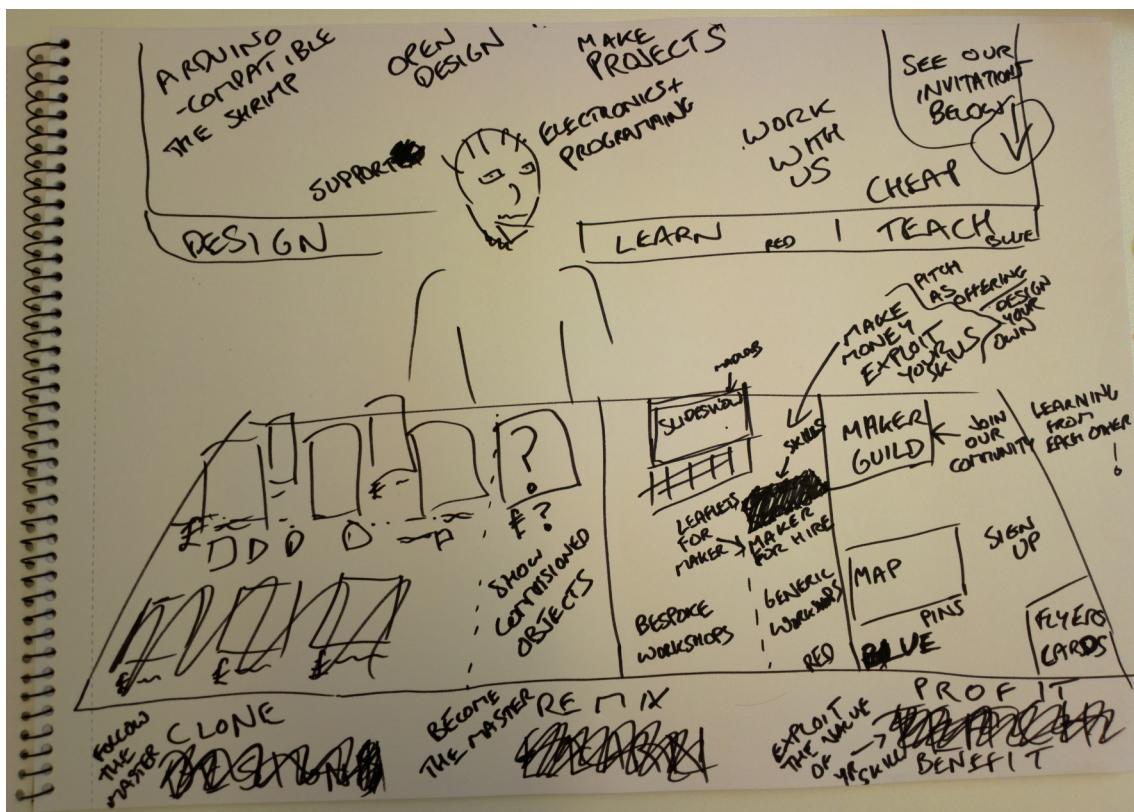
capital businesses without applying the principles of open source, one example would be a laser cutting service. A business working to closed source principles offering learning materials could work as a business. However, in Cefn's case making money is not the primary task, but Shrimping It has ended up making money anyway.

One strength of the guild is that it creates designs that the micro-business can sell, so the IP generated by the guild benefits the business which is taking on the role of servicing the guild. People will contribute to the guild because they know they can benefit. This is already happening, with a design using the Shrimp to recreate the Makey Makey project, which turns any object into a USB keyboard, available on Github. Shrimping It can trademark its name to protect its core IP and ensure that anything done under the Shrimping It name is appropriate. In this way, copyright can be used to defend freedom.

The guild could be put into action quickly starting with the Maker Faire in Manchester on the coming Saturday, where the guild could help marketing and enable people become more aware of a larger entity and what it can do for them. There are precedents in traditional unions and professional organisations so the guild concept should be a familiar one to people attending the faire. The guild could extend from Shrimping It to Cefn's laser cutting activities, which could be another business.

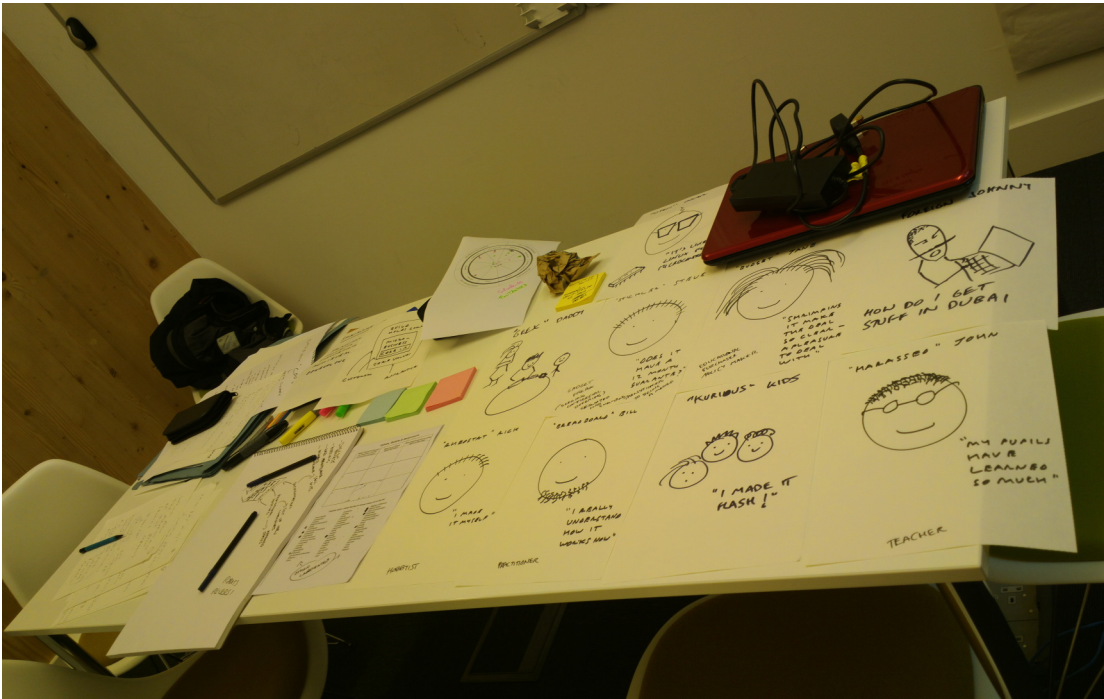
Promotion of the guild could enable people to make the transition from a hobby to a business, including dealing with issues such as:

- Marketing.
- Sharing best practice
- Practical advice
- Shared insurance
- Help on their journey through 'design, learn, teach' or a parallel but just as rewarding 'clone, remix, exploit'.



Is this a useful research technique?

'Yes, the assets really drove thinking'.



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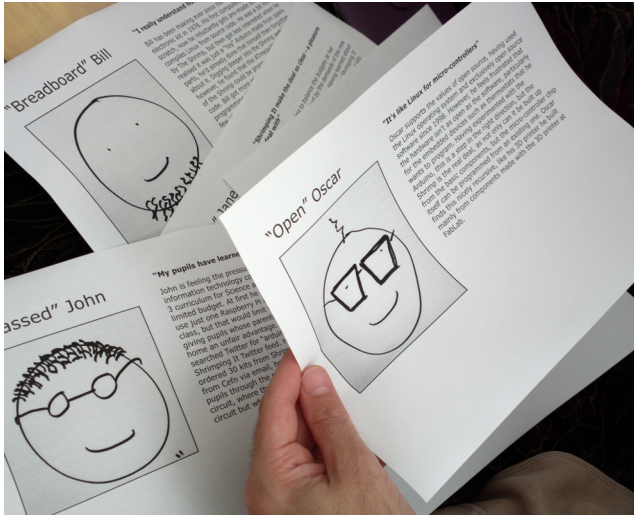
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HighWire Research Project

Sustainable micro-business: can virtual guilds offer a solution?

Design Process and Outcomes - Shrimping It

Meeting with Cefn Hoile, founder of Shrimping It at their office, Morecambe, on the 13th August 2014.



Draft for approval by organisation

Shrimping It has progressed since the last workshop in August 2013, in particular there is now a larger group of facilitators who are holding workshops independently and asking questions of Cefn, "what is best practice". This includes workshops recently held at the British Computer Society in London. The week before this workshop, Cefn set up a repository for information and sharing best practice on GitHub, called the Guildhall. Its historical connotations seemed appropriate for a system that enabled meeting about practice. Cefn invited people to the Guildhall who were doing stuff relevant to Shrimping It to get a 'spectrum of views', even down to should a switch to fit on a breadboard have two (less confusion) or four pins (fits better on the board). Even though such a detail might seem trivial, it could be a deal-breaker for a workshop participant who can't get their circuit to work as a result. Another issue is if the Arduino compatible micro-chips given out to participants are left empty or pre-programmed with a 'blink' program to reassure them that the chip is working. The Guildhall works to not only share experience but establish a consensus on these kinds of issues seeking to 'regulate the debate'.

1) Do these personas represent your stakeholders?

Cefn considered each of the detailed value-led personas in turn:

- Breadboard Bill was 'resonant', he could name several individuals that were represented by Bill.
- Budget Jane represents such stakeholders as Lancaster and Morecambe College who have ordered £1,700 worth of kit so far. They find that Shrimping It offer an accessible local source of components (the College is unable to order direct from China or from mainstream component suppliers), also they know Cefn could help 'defend against failure' with advice when needed.

- Harassed John again met with a positive response.
- Rheostat Rick, 'lot of that going on'.
- Stickler Steve, 'true'.
- Open Oscar, Cefn liked the 'recursive' aspect.
- Foreign Johnny, 'great', was amusing.
- Geek Daddy and Kurious Kids, Cefn found this one very funny.

Cefn found the extra detail of the personas could inspire a 'desire to think of the personas and their point of view'.

Stakeholders that were missing from the personas included:

- Code Club members, such as those from Hack Oldham.
- The facilitators who are choosing to represent Shrimping It, such as those from Wuthering Bytes who wish to 'replicate what we are doing' and are now engaging with the Guildhall.
- Other significant stakeholders are those who 'send us orders', including a local schools project using the Shrimp to create data loggers for sensors to measure turbidity in the estuary. Another is a school in Newcastle who have ordered lots of solderless breadboards, choose to order from Shrimping It because it 'feels right' and they 'believe in what we are doing'.
- Artists, who are using the Shrimp to create interactive artworks, including the Glasgow School of Art.
- Peer projects including Carduino, who are also building kits and could be possible collaborators, also the Shrimp PCB project, where they sharing how to make it.
- Delegates to workshops, particularly teachers who are not conversant with information technology and 'can't see the point of it' and who need teachers who are familiar with the technology to promote the potential for cross-disciplinary working, including 'hand-holding'.

This growth of interest in the Shrimp and orders for components means that the project is now paying for itself, with funds received through PayPal fully covering the costs of further supplies of components. In addition, Cefn is gaining income from holding workshops.

2) How would the personas interact with the organisation?

The Guildhall has a 'narrow scope', aimed at 'people whose interest and knowledge is teaching', mainly workshop facilitators to share expertise. It uses the Github repository system for online interaction to create a 'place for a guild of @ShrimpingIt facilitators to agree best practice on kit preparation and workshop design to teach learners how to prototype devices'. Other stakeholders are 'more likely to be consumers', the nature of Github is that it tends to be exclusive in that people who are less familiar with how open source software works might find it forbidding, however the issue tracker is easier to deal with as it is 'like an email box'.

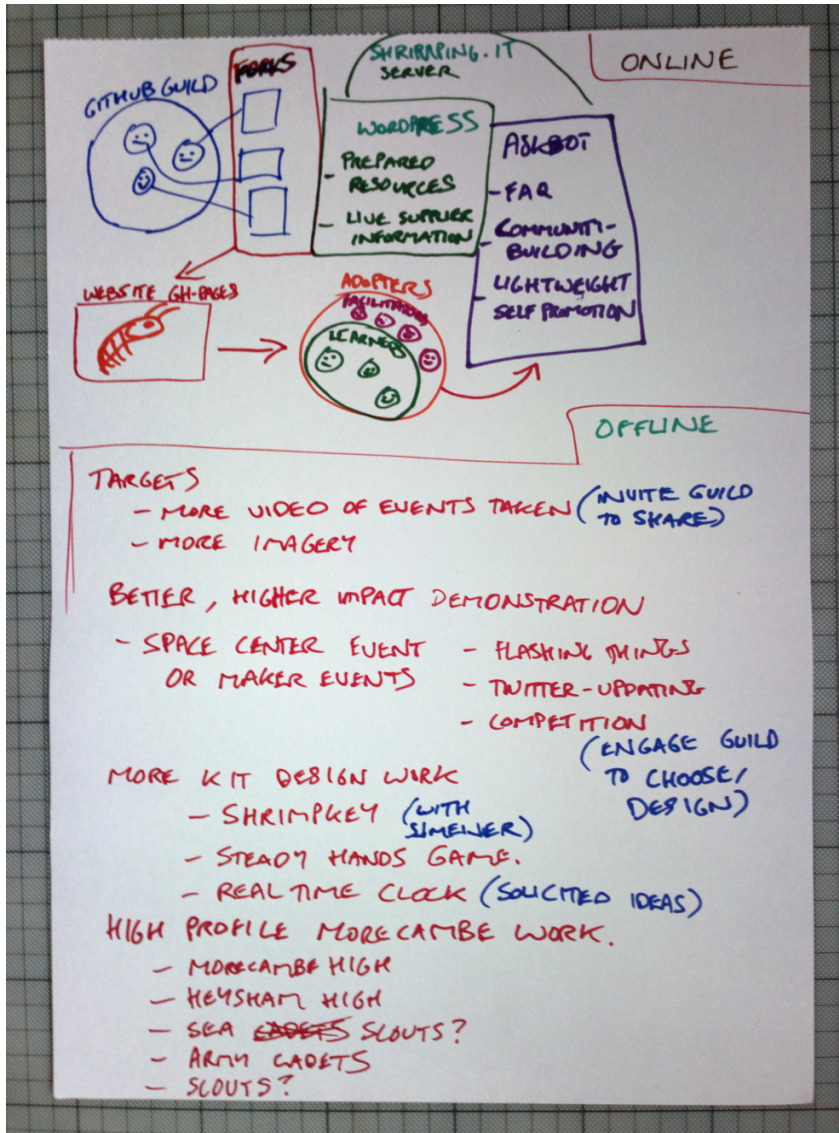
Shrimping It's current main online medium is Twitter, plus email. The website hasn't been updated for a while but there is a section at the top of the front page that shows recent Twitter items. Cefn acknowledges that the website 'needs re-visiting' and 'cleaning'. Cefn is also considering setting up AskBot, a 'self-administering FAQ', which could work with the guild. Its self-administering quality reflects how Shrimping It works, people doing things independently but in the spirit of Shrimping It.

Considering these issues led Cefn back to the purpose of Shrimping It, which was to reach the people 'left behind' by those who like technology for its own sake. These people want the technology to do something, meaning the workshops aimed at them need to consider 'what could be

useful to people's lives', and offer 'a context for those for whom technology is not the be-all and end-all'. His project to recreate the Makey Makey Arduino based keyboard emulator will need a 'fun demo' to succeed in the workshops.

3) How can the guild structure created in the first workshop be developed further?

Cefn drew a diagram of how the guild structure could be developed both on-and off-line, shown in the photo below.



4) What are the implications for existing systems?

Considering AskBot further in the context of the guild structure, Cefn aims to be 'not to be too prescriptive' about how people use AskBot, but will 'invite people to use it in certain ways'. Cefn thinks Twitter could be used to create 'a kind of guild' by asking followers about potential projects, 'what should it do', as he did recently at the start of developing a Shrimp-based Real Time Clock. The guild model promotes 'interaction around a task', which is a good reason for using GitHub, as it offers tools to facilitate this kind of interaction. Facebook couldn't offer this kind of interaction but Google Docs could.

The system would need to be able to allow 'representation of our intent' where 'it is interesting to

imagine a system that could co-ordinate people around an intent'. Existing systems are text-based, a new system would be 'content-orientated around intent in a guild'. At the moment, systems like GitHub work by filing issues, a system that could work with intents would have to be able to show the 'top ten' intents, but allowing some to be more visible.

The first week of using Guildhall, plus discussions with individual facilitators over Skype, is raising more fundamental 'pedagogical issues'. The proposal by one facilitator to pre-program the chip with 'Blink' could at one level seem trivial, but on another level it changes what the workshop is about and the values driving it. With an empty chip, the participant experiences programming it themselves, but with a pre-programmed chip they can only experience changing that program. Their 'emotional arc' of discovery changes as a result, which can be significant when currently people are often 'blown away' on realising they can make a working electronic circuit.

Wikipedia could be a better system than GitHub, as it allows for 'talk pages' that are not present in GitHub, where the rationale for choices can be discussed, but GitHub allows for raising issues which Wikipedia does not. The system would need to allow for the kinds of discussions that Cefn has been having over the past week, 'reflecting on pedagogy' and highlighting the importance of values. Other facilitators are now starting to realise the importance of values, acknowledging that people can choose to differ, but they need to be able to make the difference clear. Wikipedia offers a 'meta-data bolt-on' which could facilitate these discussions about values, while the GitHub issue tracker is threaded with authorship. However, neither system can 'preserve structures of data' when dealing with an issue such as 'what is the ideal lesson plan'. Stack Overflow is 'not unlike AskBot' but also offers 'reputation'.

The ideal system might have to be created from scratch, starting by considering the tasks the guild would need to perform, then the data structures and the user journey for each task. Such a system could be built independently for a number of guilds, then it would be possible to 'see what the commonalities are' including how their business models work. The new guild system could have elements of GitHub, Wikipedia, AskBot and Stack Overflow. Creating and comparing these new systems could be a research project in itself.

5) Is the use of personas a useful research technique?

The personas promote reflection and gives it a structure, where reflection is in itself a tremendously useful research technique. Using personas can give a reason to talk about activities, where so much is about relationships.

Cefn isn't sure if having more detail is useful, but it might be possible to have a questioning process that challenges the persona a bit more, considering how they would seek help. Personas could be used as a stimulus, where people can 'recognise the characters' and can see what they are about in terms of values. Cefn wonders if 'design questions could be approached through personas', such as one representing workshop participants who are 'nervous' and feel they 'need permission' to engage with it.