



ALL MEMBERS INCLUDED - EXAMPLES OF DESIGN COLLABORATION WITH JAPANESE SOCIAL WELFARE ORGANISATIONS THROUGH SHARED DESIGN METHODS AND PROCESSES

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Abstract: In the last half-century, viewing disability as a social and human right enabled a raft of legislation achieving equal access to mainstream education, employment, and public services to be passed. Enabling equal human rights implies social inclusion. The benchmark for social inclusion has been heavily weighted on independent living and mainstream employment. For people with severe learning disabilities or mental health issues, it has been hard to secure mainstream employment and financial security. In Japan, in preparation for 2020 Olympics and Paralympics, the government and charitable foundations are striving to provide creative opportunities for disabled people. By introducing co-design based projects, this paper focuses on how the linkage of creative activities and the strategic use of design and digital fabrication technology underpinned by the collaboration of many parties - can enable new forms of financial and social empowerment for people with severe learning disabilities and mental illness who would otherwise have difficulty gaining mainstream employment.

Keywords: *Co-design, Social Welfare and Disability, Digital Prototyping, Design Workshop, Collaboration*

1. Introduction - Employment and creative opportunities for people with severe learning disabilities and mental illness in Japan

A 2016-2017 United Nations report states that the unemployment rates for disabled adults are at least twice those of non-disabled adults. (United Nations Division for Social Policy and Development Disability, 2017). Even with anti-discrimination laws and legislations in place, many nations struggle to assure secure employment for disabled adults. By 2045, 1 in 3 people and 1 in 4 people are expected to be over the age of 65 in Japan and the UK respectively (ibid.). An aging population will strain funding for care and social welfare, leading to further pressure on public services. Not knowing how to provide for disabled employees, is a common reason for employers being reluctant to employ them. Many expect high adaptation costs (even where local councils can help, few employers are aware of the system). For a person with a physical disability, adaption may be simple as catering for their physical needs such as the provision of accessible facilities and longer breaks avoid fatigue. However, for a person with learning disabilities or mental illness, the adaptation may be complex since each person's emotional, physical and mental capacity can vary. Not every adult with a severe

learning disability or mental illness can work from 9 to 5, five days a week. How can one provide employment and social interaction opportunities for these groups of people? Technological advances in computers and software have meant many more disabled people are able to work remotely and work without being tied to a specific place. Rises in digital fabrication and easy-to-use creative software have increased opportunity for anyone without formal training fabricate products easily. Utilising fabricated hardware, regardless of ability, increases opportunities for individuals or organisations supporting people with severe disabilities to engage in creative activities that generate income, thereby socially empowering them. By creating avenues for selling art works and selling design goods based on them, this can become possible - together with linking with cities, industries and designers.

In December 2016, a draft bill for 'Advances in the Promotion of Supporting Creative Activities for disabled people' (shogaisha geijyutsu shien suishin hou) was submitted to the Japanese Diet. In content and purpose, it was similar to the activity of Unlimited - the Arts and Disability festival held in conjunction with the 2012 London Olympics and Paralympics. The aim is to promote creative art activities for disabled people and provide vital environments to enable that and has had a positive effect on organisations working with disabled people by helping them to achieve their creative goals. Seeming positive at first sight, this draft bill's focus is on the art market and the sale of art works - a limited market in Japan compared to the USA or Europe since the purchase of contemporary art works for domestic display is not common. Few not-for-profit organisations have basic training in business and sales, know how to price the work or who to target in selling it to generate sufficient income. The draft bill only focusses on the art market without extending its horizons into art education or empowerment for the artists or their support network. To generate high quality art work, supportive expertise is crucial. When no clear strategic outlines are delineated, organisations wishing to strengthen art activities do not know where to start. Collaboration with designers through a shared co-design process and utilising fast fabrication and production techniques products may make this easier. To understand how design can help, it is important to look at the current situation of social welfare organisations providing work and activity programs, see what their creative outputs are and how designers or outside experts can help to frame new solutions.

2. Art activities in Japanese social welfare organisations and the role of design

Unlike the UK (Appendix 1), Japan still has many publicly-funded social welfare organisations and workshops providing employment and care for severely disabled adults (called beneficiaries from hereon). This is especially the case for those with severe learning disabilities who would otherwise be cared for by their immediate family or local care homes. In Japan, three different types of programs are provided for people with learning disabilities, autism and mental illness depending on their severity - Type A Work Continuation Program and Type B Employment and Living Care programs. Each organisation provides one or more of these programs depending on the beneficiaries they serve. The outline for each program is shown in Table 1. In brief, Type A provides constant contracted work, whereby the beneficiary is an employed worker, whereas Type B provides vocational training for work for people unable to carry out contracted work in either Type A programs or mainstream workplaces (Ministry of Health Labour and Welfare, 2015). Living Care programs are not officially identified as a work program and focus primarily on providing basic living skills and caring for severely learning disabled beneficiaries through recreational activities such as art classes the majority of which are not supervised by experts.

In recent years many welfare organisation have used creative activities to generate income for their beneficiaries. For the past 20 years, organisations such as Able Art (see Appendix 2), Tanpopo no Ie and the Good Job Centre have paved the way for many organisations by advocating and showcasing creative opportunities for beneficiaries that combine financial and social interaction benefits for beneficiaries with severe learning disabilities, autism or mental illnesses. In these organisations, many are starting to explore such opportunities in the creative activities they provide. In the case of Tanpopo, they combine Type B and Art based living care programs to create a unique base. All the beneficiary's incomes are provided through this without government subsidy. Each beneficiary's income is calculated as:

Base income (3000~5000 yen) + Working Hours (120 yen / 170 yen per hour) + Commissions (e.g. art work commissioned for projects or utilised in design goods etc.)

One notable achievement with artworks has been in the commercial collaborations initiated via Able Art with manufacturers and retailers. The images are licensed and used for different collaborative products with industry such as for interior and such fashion goods as high-end socks and underpants. for which the artist gains a commission. Organisations like Tanpopo have demonstrated that a form of employment whereby income is generated through creative outlets are possible for severely learning disabled people outside of the mainstream employment market.

However, organisations such as Tanpopo no Ie are few in number, with the majority of those providing Type B programs and Living Care programs struggling to provide sustained income by creative means for their beneficiaries. The main reason is that: a) staff have to deal with complex care and facilitation tasks for each beneficiary b) the absence of art-trained staff to facilitate and strengthen art activities within the organisation c) not enough manpower or time to achieve output of high standard products within the organisation while conducting daily work tasks. Another factor is that many heads of social welfare organisations do not know the advantages and benefits of art activities since outcomes are so hard to achieve thus they focus primarily on the physical healthcare aspect of the program.

A recent study by Drexel University looked into the blood flow in areas of the brain related to rewards. It studied participants completing various art activities, including doodling, colouring and free drawing tasks. and showed an increase in blood flow in the brains prefrontal cortex. This regulates our thoughts, feelings and actions, and related to our emotional and motivation system and the brain's reward circuit. In short, the action of art-making resulted in significant activation of feelings of reward and accomplishment. (Kaimal G., Ayaz H., Herres J., Dieterich-Hartwell R., Makwanaa.B., Kaiser D.H., Nasser J.A., 2017) This means that art can have therapeutic qualities in helping relieve agitation and other behavioural and cognitive stress which in turn is a plus for welfare organisations looking for rehabilitative activities to help their beneficiaries.

Products created in many organisations are sold in niche markets such as those associated with disability arts or social welfare but are not showcased sufficiently in the mainstream market. The majority of such products lack strategic creative direction since few staff have been trained in art or design which in turn limits their audience. Where a designer utilizes the artworks as the basis for a series of products which can be branded and packaged in a such way that removes the amateur craft or disability stigma can have a profound impact. However, many are unaware that such organisations need help in enabling better creative opportunities and output for income generation through the creation of products utilising their unique artworks. The key lies in linking these two worlds to come up with joint solutions. Using rapid prototyping and digital fabrication may be the key for products to be made at reasonable cost and in multiple editions thus decreasing the initial production cost and increasing potential profits.

3. Developing methods to encourage creative growth

3.1 Initial design involvement Ayase Himawari-en Workshop

The author has been involved with social welfare organization Ayase Himawari-en (see Appendix3) since 2013.

Ayase Himawari-en run Type A, Type B and Living Care Programs (see 2 for program details) providing employment and or care for 90 adults with learning disabilities (some also with autism) diagnosed with IQ level under 70. The amount of income from various workshops can vary from up to 10,000 yen (\$80) to as low as 5,000 yen (\$40) a month(as of 2016). Within the living care program, they provide vocational and creative activities, including a selective art class run once a week - participants mostly being people with severe disabilities (often. The majority of creative activity is not linked to any income stream except for Saori weaves (Appendix 4) made by beneficiaries which are

then made into craft products by parents with good intentions but who have no formal art training or design background. The result are well-made but amateur craft products that are clearly identifiable as welfare goods (A well made push would be sold at \$2, lower than the production cost).

The author then a PhD Student at The University of Arts Tokyo, approached Ayase Himawari-en in the hope to better generate income for beneficiaries involved in the living care program by utilising the art activities within through design. After observing the art classes for a few weeks, the author decided to initiate a short design project Hinamatsuri Project - under the Hinamatsuri (traditional girls festival) hoping to generate future ideas for in-house products under the Hinamatsuri (traditional girls festival). The 3 day workshop held at the University generated a wealth of ideas and prototypes by the four participating students. The results were exhibited a Shikadai Gallery in February 2014 for a week along-side similar projects that were held in Portugal and Sarajevo. Hoping to take the ideas further the author tried to negotiate with Himawari-en to produce some of the prototypes. However the response from Himawari-en's staff was "We are overjoyed as the designers came up who wonderful solutions using the art works." adding that "it would be difficult for us to make the products as we have no money or knowhow".

From the project two key issues came to light:

No production infrastructure to realize the design ideas (retraining beneficiaries through the steps of production, printers, folding machines etc.) within the organization.

Designers not knowing how to handle the material (where to cut, whether it is ok to change the drawings contrast or colour etc.) because of the lack of involvement with beneficiaries and their supportive staff.

In short the cause for difficulties in carrying the project forward came down to two vital facts. One fact is the staff involved were not actively involved in the design process meant they could not realise the value in the artworks they were help supporting to make. i.e. no empowerment within the art classes were achieved. Therefore it is key for the designer to having a open dialogue and relationship with the staff to enable discussions on how the ideas can be realized . Second is that many designers found it hard to handle the artworks because they were not at a sufficient quality level where they could be handled as affective graphic material. Not editing the art material too much is key as it is the intellectual property of the artists. Knowing who the artists is and creative process around the artwork may be a key source of inspiration for the designer to handle the material in the most appropriate way. Therefore, a shared creation process where each stake holder has a fair amount of input is key to create a truly equal participatory design process where the

3.2 8 Methods for Creative Growth

To solve the key issues above he author thought it was firstly important to create artwork that was a high enough quality to be used for design. The author developed 8 Methods for creative growth - simple assistive methods developed by the author which can be used can be use to enhance one's artistic talents regardless of ability, experience or expertise. By combining the assistive care skills of the staff and the author's (a designer's) knowledge on basic art skills, the author hoped that beneficiaries could have better ownership of their work, together with enhancing the staff's understanding of the design potentials of the art activities carried out in sheltered workshops regardless of their expert knowledge in art. Over a period of one year from February 2014 to February 2015 the author and staff worked with 10~15 beneficiaries with various learning disabilities taking weekly art classes at Himawari-en to develop the methods. Each method is summarized in the table below.

	Method	Details	Benefits / Changes
1	Changing the size and Material you work with	Changing the drawing size or drawing material the artists works with to further highlight already existing artistic strengths	helps artists to see good qualities in their own works. Gives new sensation which can lighten self confidence and motivation
2	Converting Movement into Art	Converting the person's favorite sensation and movement into a creative act	Helps people with severe cognitive ability or limited movement to create through the sensation of actions and movement
3	Making colour & shape templates	Colour-in templates with prime shapes and simple with thick outlines or black surrounding backgrounds	Better understanding of colour and composition. Many transitioned into drawing freely. Also has Therapeutic benefits (less aggressive behaviour)
4	Creating new tools	using everyday material and products to create art tools which can enabled new sensations and unexpected results	Expands creative ranges by introducing new tools and methods with different shapes and textures
5	Giving Encouraging words	guiding the person trough the creative process using encouraging words, and enabling independent decision making	Better self confidence and willingness to challenge new things. enabled more independent decision making
6	Selecting high quality inspirational material to work from	Provides new inspirational sources that matches the person's interest	expands creative horizons by providing material through personal interest and existing creative traits
7	Understanding the true meaning behind an artwork	understanding the meaning and reasons behind what they draw trough observation over a sufficient span of time.	making sure the appropriate supportive methods are provided with ought harming the person's self development
8	Using grid templates to encourage further drawing	teaching basic 3D shapes trough the use of guides and gridded paper. slowly adding primary shapes within the shapes to create drawings	Encourages people who have difficulty in drawing from imagination to draw freely without the fear of making a 'mistake'

Table 1: 8 Methods for Creative Growth

The author firstly observed every artist carefully over the course of the art activity, focussing not necessarily on what they draw / make but how they draw/ make things. The author realized that the artists could be separated in two types. One was that some liked the act or task of drawing something - either copying or drawing from their imagination on specific themes, with the specific aim of drawing something to their satisfaction. The second was that some of the more severely learning disabled artists enjoyed sensory pleasure whilst drawing. The two contrasting factors of goal satisfaction and sensory pleasure helped the author come up with a broad range of methods. Each method although inspired is not specified toward one group or another and was created of all age groups and abilities in mind. Art has also shown to have therapeutic value. For example, freely drawing for 20 minutes showed significant or greater reductions in negative moods and anxiety in people (Bell C.E. & Robins S.J. 2007). A recent study from a team in New Zealand found improvement in psychological outcomes simple colour-in activities have on the brain such as reduction of stress, agitation and depressive symptoms (Flett J.A.M., Lie C., Riordan B.C., Thompson L.M., Conner T.S., Hayne H. 2017) This can suggest that many of the 8 methods introduced can have therapeutic values which are much needed in social welfare organisations as one of their aims is to maintain each beneficiary's everyday wellbeing.

Initiating these ideas, the quality of artworks rose dramatically within a year. It was after seeing the drawings come alive in front of their eyes that started to see potential design ideas themselves and started discussing with the author. Trough this design patterns and stamps were made from the drawings, which were utilized in many products. Creating the 8 methods above helped the staff see the potential in the creative activities, become more active in coming up with ideas. In doing so, the staff and beneficiaries are no longer passive recipient of the design result but active contributor in creating high quality goods - as much as the designer.

4. Design based projects linking social welfare organisations with designers and industry through a co-design Challenge Workshop model

The Challenge Workshop model is a collaborative workshop model in Inclusive Design (Appendix 5), developed by Julia Cassim while at the Helen Hamlyn Centre for Design at the Royal College of Art (RCA). This knowledge transfer programme in the use of inclusive design as a tool for innovation explored and developed techniques in co-design practice using different design-led mechanisms (Cassim, J., Dong, H (2013)). The Challenge Workshops provide a process for disabled users in particular as well as those from socially marginalised groups, to work as design partners in a team with designers from the outset of the design process. Product ideas and prototypes are realised in a variety of locations and design contexts within a time span ranging from twenty-four hours to five days. By 2015, the workshops had been held in 22 cities in 13 countries with around 800-1000 designers participating. In 2009, with British Council funding, the first Challenge Workshop was held in Sarajevo in Bosnia Herzegovina (Cassim, J, Percovic, N (2011)). UK-based designers collaborated with local designers and organisations employing deaf craftsman to create a new range of design-based products and an accompanying brand to help generate better income for the craftsmen and organisations. One of the participating organisations Pismolik, has continued to produce design-based products after the challenge, increasing their profits year on year. In Japan, the first Challenge workshop involving social welfare workshops and artists with learning disabilities and mental illness was held in Sendai City, Miyagi Prefecture (see 4.1 below). Production of selected goods from the workshops through collaboration with industries was achieved.

4.1 Examples of the Design Challenge workshop models in Japan

In Japan, the first Challenge workshop involving social welfare workshops and artists with learning disabilities and mental illness was held in Sendai City, Miyagi Prefecture. The workshop was initiated by Able Art, a non-profit organization selected as a model support program for ‘Creative Activities by Disabled People’ (Shogaisha no Geijyutsu Katsudou Shien Model Jigyou.) by the Ministry of Health, Labour and Welfare in 2014 - aiming to provide a nation wide model providing various knowledge and vocation-based programs to help provide essential knowhow on how to support and empower the creative activities of disabled artists along with how family members and support network can help support their activities. (Secretarial Office for the Model Support Program for Creative Activities by Disabled People, c2014). In conjunction with this two 48 hour design challenges were held in September 2016. Facilitated by the author open call for applications was made to designers, artists and supporting social welfare organisations and formed into 5 to 6 teams by the author and Able Art. Held at Sendai Zoo The 6 participating teams were set to create a series of family oriented goods that engaged a wide range of age groups, which also incorporated the Canadian Goose - one of the Zoo’s prime research subjects. Unlike previous challenges, three winning teams were assured that their ideas went into production if 300 lots. The selected ideas were refined post workshop and sold as part of Able Art’s Humora’s brand under the sub-name Zoomora, in pop up shops set up in various locations across Japan including department stores in Sendai, Shizuoka and Kyoto as well as at Able Art’s head office and gallery in Tokyo. Most products were sold out by September 2017.

Following the success, the author and Able Art teamed up with National Baseball Team Rakuten Golden Eagles (based in Sendai) the following year to produce a range of new official merchandise goods under their CSR scheme. The themes was to create new series of official towels, bags and memorabilia that a) targeted a new target group, and b) set a new design tone for the design goods which was different from Rakuten’s usual taste - which was very Americanized. The workshop was held within the stadium on a non-match day (August 2 to 3) where the artists were free to sketch and produce artwork based on Rakuten on sight. Three new towel and three bag designs were selected from three teams along with key holder designs to be submitted by all participating teams. The items are to be sold at Rakuten Eagle’s official stadium shop and around the city with profits going straight to the artists themselves. Depending on sales from 2018 onwards with talks being held about a second workshop in 2018. Part of the profits will go directly to the artists as it did in 2016.

These two workshop showed that it was possible for social welfare organization to collaborate with manufacturers and large corporation through the use of their art. However, this was due to two facts. One was the role Able Art took in becoming a mediator between the two parties, along with a clear briefing and design guidance and facilitation by the author (especially to the designers.) The second was that most of the artists who participated were highly skilled - the star players if you will. The question rose - what about those who are not stars? How could they too be involved more actively in the creation process.

4.2 Opportunities in the use of Digital Fabrication - the Shibuya Font Project

4.2.1 The FabCafe MTRL and Shibuya-ward Ethos

The Fab Foundation, founders of Global Fabrication Labs (also known as Fab Labs) describes them as being:

“A technical prototyping platform for innovation and invention, providing stimulus for local entrepreneurship. A Fab Lab is also a platform for learning and innovation: a place to play, to create, to learn, to mentor, to invent...connecting to a global community of learners, educators, technologists, researchers, makers and innovators “ (Fab Foundation, 2016)

Fab Labs originally started as a way to enable remote communities in developing countries to make their own manufacturing devices and products, The concept centered on enabling equality of production through the democratisation of access to technology regardless of background or status. However, in recent years, Fab Labs equipped with digital fabrication equipment such as 3D printers, UV printers, CNC and laser cutters are facing a problem particularly in Japan. Many of their paying members utilise the technology not to create new design outcomes but to simply produce pre-fabricated designs since the annual subscription is cheaper than paying a reprographic or production company to do the work In the hope of changing these trends, FABCafe MTRL was opened in Shibuya Ward ,Tokyo as a co-design space to enable local designers and engineers to collaborate and Shibuya residents to realise new socially-motivated design solutions.

In recent years, Shibuya’s Ward office has been the front runner in the promotion of diversity and equal rights for all (including minorities) in Tokyo. Under the theme of “Diversity Shibuya,” it was the first local ward in Japan to introduce the equivalent document for a civil partnership in 2016 (although this is not legally binding). In 2016, Shibuya Ward’s Disability Welfare office together with Shibuya’s Tourism Committee set out to use art works as the basis for design goods which would symbolise Shibuya’s diversity. For educational purposes, they decided to collaborate with design students from the Kuwasawa Design Research Lab (Kuwasawa from hereon) - a leading technical design college based in Shibuya. In October 2016, with the help of Ayumu Isomura, a Kuwasawa tutor and founder of the design firm Gradie, they conducted a two month design program whereby a team of students would visit 3 social welfare organisations with disabled artists and create design prototypes from them. One of the ideas was the Shibuya Font in which the student Sho Shirota came up with the idea of using the artists’ lettering to create digital fonts and patterns which could be downloaded as an online open-source. This became the start of Shibuya Font Project (see 3.2.) and its collaboration with Fab Cafe MTRL.

4.2.2 Shibuya Font project - collaboration or disabled artists, social welfare organisations, designers and digital fabrication

In April 2017 the author was invited by Isomura to become facilitator and project leader for the Shibuya Font Project. Taking on the previous year’s concept, the author felt that the design outcomes were rushed and highly edited, which did not highlight the organic and unique nature of the artists’ drawings and the drawing were not based on any subject or theme. Since one of the collaborators was the tourism committee, the author felt that by using Shibuya - a rich, diverse and energetic region in itself – as a theme could be a great source of inspiration for many of the disabled artists and design goods original to Shibuya could be made. Unlike Kyoto,Tokyo does not have many souvenirs of its own.Under the theme – ‘Shibuya to go - original Shibuya goods you can take

home!’ the author set out to create a series of digital design materials and products using FabCafe’s fabrication technology, which could become educational tools. Starting in June 2017, six design students were teamed with six social welfare organisations and asked to achieve the following stages and tasks over a three month period.

Stage 1: Over the period of two months, create a series of art works with the organisation’s artists and supporting staff that symbolise Shibuya city literally and figuratively.

Stage 2: Create a series of digital materials, patterns and fonts with the artworks and lettering

Stage 3: Develop a brand and series of prototype products using the material created above during a 48 hour Design Challenge workshop time frame.

The participating organisations varied in program types and experience in creative activities - ranging from Living care programs for severely disabled artist with learning and physical disabilities, to clubhouses for people with severe mental health issues. The author has had experience in helping support and run art activities within social welfare organisations for five years, facilitating each student and training staff from the collaborating organisations to generate artwork based on her “8 methods for Creative Growth” - a series of simple methods developed by the author with the staff of social welfare workshops. The generated artworks were assessed one month later and refined in preparation for the 48 hour workshop that was held at FabCafe MTRL in August 2017. During their refinement period, students and staff from the organisations learned how to prepare data for use with digital fabrication equipment. The technical design preparation for the workshop helped many first year design students who had little design experience. The students started creating patterns and fonts,



Fig.1. Design prototypes created by students in the 48 hour workshop held at FabCafe MTRL

getting regular online guidance from the author and Fab Cafe technicians to generate the appropriate design data for production. The 48 Hour Design Challenge was held at Fab Cafe MTRL from August 26-27 27, 2017. This time, the participants were limited to the designers and staff from the social welfare organisations. The first day kicked off with brainstorming sessions where the teams reviewed the drawings, grouped them and generated instinctive words that described them. The same was done for Shibuya. Through this, the team matched works describing the drawings and Shibuya to create an overall theme and generated a persona for the target audience that matched the theme. By defining the concepts of the design, a brand name encompassing the overall theme and concept was created. From the afternoon onwards until the second day’s presentations, students worked closely with Fab Cafe technicians to create initial prototypes. The workload was such that staff from collaborating organisations with artistic experience stayed and saw the process firsthand. The author was on hand to give design advice throughout.

As can be see above (Fig.1), a variety of high quality product prototypes were realised in 48 hours. The prototypes are being refined post workshop and will be exhibited at the ‘Cho Fukushi Symposium’ in November 2017 - a week-long, Shibuya ward wide social welfare event focusing on design and disability held every two years. The digital patterns and fonts are to be released on Shibuya Font’s website and will be used a resource for collaboration with local businesses and companies while the prototypes will be used as a model resource in negotiations for industry collaborations. The author and the project team are in negotiations with industries and outlets such as Casio watch, the interior brand Adastria and the Tokyu department store as of September 2017.

The FabCafe workshop showcased the possibilities of developing quick high quality prototypes not seen in previous workshops and was a great design educational experience for the students involved. For the social organisation staff seeing the design and fabrication process first hand helped them realise the role they can take within the design process. Knowing what sort of drawings or art works and how they can be utilised in design made them realise the importance of generating and selecting appropriate art material for the design and helps them think of how they can collaborate with designers and outside partners in the future. Knowing they do not need to do everything helps them realise what they have to focus on - supporting the artists with their expertise of social welfare support.

5. Conclusion

For co-design / participatory design process to work effectively, it is key that each stakeholder (to the design result) needs to know what they can do and how their skills can be utilized / used in the design context. In order to do this facilitation is key - and the skills of the facilitator is put to test the most. Their experience, knowledge and technical skills become vital in doing so. The author’s experience and knowledge on working with social welfare organisations, her technical experience and knowledge as a graphic designer, and as a workshop participant and facilitator, enabled a consistent and mutual dialogue to be created between the organisations’ artists and staff, city office the students and FabCafe - as there was a broad understanding on both theoretical and technical aspects. This may be a key component for future co-design projects, since the mixing of diverse experience, expertise, skills and knowledge is key in solving present and future social issues are becoming more complex and intertwined.

The Author hopes that the project examples shown in this paper may pave the way for increased income for many disabled people. However, it must be stressed there should be assurance that income can be generated for the designers as well. In order to achieve this, what is needed is a clear guideline contract regarding copyright and percentages given to parties who have contributed in the final design product and outputs. Without this, the onus will always be on the designer “helping” or “solving” problems for disabled people or their supporting network, and the true goal of collaboration and co-creation cannot be achieved regardless of what the design process achieves. Also for these types of products to be realised, there has to be design and business trained mediators who can help negotiate and realise the production of such products. These mediating roles -similar to those of the creative director or producer will become vital in future to enable design goods based on the art works of disabled artists to break through into the mainstream market.

As shown in the Design Challenge with FabCafe MTRL, presenting clear design results through rapid and digital fabrication prototyping - the artists and their supporting communities together with the designers become equal stake holders in negotiating future collaboration and deals. The agreement is based not only on the ethical need to help disabled people. Instead the focus is put upon the creative talent and resources that the artist holds and how they can contribute to better design outputs for products and services for society as a whole. The projects also show that mainstream employment is not the only answer to gaining employment for disabled people. Employment simply is one method in getting a sustained income. Through collaboration, supportive methods and strategic design inputs, together with the necessary financial support, new streams of sustained income can be realised, where people with disabilities are not simply supported because of what they cannot do but supported

through what they can do - creating interesting art works that can become a rich design source for design that can reach many people far beyond their surrounding environments.

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Appendix

1. Since the closure of Remploy in 2010 - a government run workshop for severely disabled people in the UK, many severely disabled adults were left with no where else to go, unable to secure employment from the private sector.
2. Able Art Japan is a non-profit organization founded in April 2007 with the purpose to create an environment where people with disabilities can make a living through art. Their main aim is to represent the artists and manage commercial use of their works where , their paintings, illustrations and calligraphies can be licensed for advertisements and product designs. They host art based events and workshops creating opportunities for disabled artists and their family and their supportive network to connect with the non-social welfare world.
3. Adachi No Sato Welfare Organisation was established by a Adachi-ku Te wo Tsunagu Kai- a parents's group with children with learning disabilities in Adachi Ward, Tokyo in 1996.As of 2014, 11 sheltered workshops (Sogo Fukushi Shisetsu) as well as 20 group homes and 1 full-time care facility provide work, living, training and vocational support for over 793 individuals in the Adachi area.
4. Saori weaving was developed in 1972 by Misa Jo as a simple form of weaving technique that could be done by anyone regardless of weaving ability. Because of its simplicity, many social welfare organizations adopted it as part of their Type B work-continuation program to generate income.
5. Inclusive design is a form of co-design methodology where designers and people often marginalized from the mainstream design process to develop products or services that are accessible to many regardless of background or ability that can be used within the mainstream market