Challenges and support for scaling up upcycling businesses in the UK: insights from small-business entrepreneurs

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Keywords
Product longevity
Scaling up
Sustainable business
Sustainable production
Upcycling

Abstract
Upcycling is the creation or modification of a product from used materials, components and products which is of equal or higher quality or value than the compositional elements. Within the context of increased product longevity, it enables a reduction in the use of raw materials by extending the lifetime of used materials, components and products, thereby increasing material efficiency and reducing industrial energy consumption. If scaled up to a considerable level through appropriate interventions, upcycling could, in theory, contribute significantly to preventing environmental harm. In particular, upcycling-based businesses have been identified as one of sustainable alternatives to prevailing business models that are based on unrestrained access to virgin materials, in contrast with the circular economy. Previous research regarding upcycling has focused mostly on fashion and textiles and highlighted the potential of upcycling businesses, providing sector-specific suggestions for expansion beyond their currently niche status. There is a critical knowledge gap concerning ways of achieving the full potential of upcycling-based businesses across the whole economy. This paper therefore provides results from a study on the challenges that upcycling entrepreneurs face when attempting to scale up and how to overcome them, based on an exploratory workshop with 12 British upcycling entrepreneurs. It identifies the key challenges faced by upcycling businesses and presents a mapping of the systemic support required for overcoming them, with potential actors.

Introduction
Upcycling is defined as the creation or modification of a product from used materials, components and products which is of equal or higher quality or value than the compositional elements (Sung, Cooper, & Kettley, 2014; Sung, 2017). It is an umbrella concept which incorporates ‘creative’ repair (e.g. darning), reuse (e.g. redesigned and remade clothing), refurbishment (e.g. upholstery), upgrade (e.g. IKEA furniture hacks), recreation (e.g. fashion items from clothing) and more. Upcycling is both a form of alternative consumption in which people can engage (Albinsson & Yasanthi Perera, 2012), and a form of alternative production that environmentally-conscious entrepreneurs can utilise (e.g. Sung & Cooper, 2015). Within the context of increased product longevity (Cooper, 2010), it enables a reduction in the use of raw materials by extending the lifetime of used materials, components and products, thereby increasing material efficiency and reducing industrial energy consumption (Allwood, Ashby, Gutowski, & Worrell, 2011). The reduction in energy consumption contributes ultimately to lowering greenhouse gas emissions (Hamit-Haggar, 2012). It also reduces solid waste or, at least, delays the addition of waste to landfill (Bramston & Maycroft, 2013; Zhuo & Levendis, 2014). Thus, if scaled up to a considerable level through appropriate interventions (Van den Bosch, 2010), upcycling could, in theory, contribute significantly to preventing environmental harm.

Previous research regarding upcycling has focused mostly on fashion and textiles (e.g. Han, Tyler, & Apeagyei, 2015; Paras, Curteza, & Pal, 2016) and highlighted the potential of upcycling businesses, providing sector-specific suggestions for expansion beyond their currently niche status. There is a critical knowledge gap concerning ways of achieving the full potential of upcycling-based businesses across the whole economy. In other words, how could this niche practice of upcycling in different businesses be scaled up?

This paper therefore aims to provide some commercial insights for upsaling upcycling-based businesses across different product categories in the context of small enterprises in the UK.

Methods
This research used a workshop1 as a method for data collection. A participatory workshop with British entrepreneurs involved 12 upcycling businesses in the UK. Each participating business was asked to identify three key challenges they face when trying to scale up their upcycling businesses and how they could overcome these challenges. The workshop was facilitated by the researchers and attended by 12 upcycling entrepreneurs.

1 A facilitated event, normally lasting one day, for a group of between about 12 and 24 attendees which involves some degree of active participant action and interaction (Rust, 1998).
upcycling-based entrepreneurs was organised in March 2016 at the University of London.\(^2\)

**Sampling and respondents**

A workshop invitation was sent to 21 UK-based upcycling enterprises (identified through a Google search and word of mouth), Remade in Britain (a UK-based online upcycling marketplace: http://www.remadeinbritain.com/) and all identifiable upcycling-based makers (n=76) involved in Folksy (a UK-based online craft marketplace: https://folksy.com/). Workshop advertisement was also posted on 29 Hackspace/Makerspace google groups/fora (selected on the basis of the accessibility and activeness)\(^3\). Twenty-five people expressed their interest in participation, of which 12 eventually took part in the workshop.

The 12 participants comprised 10 females and 2 males. Nine people were between 30 and 49 years old and 3 were over 50 years old. Most businesses were sole traders (n=9), followed by private limited companies with less than 5 employees (n=2).\(^4\) Eight were full-time, 3 part-time, and one considered their upcycling as a hobby. Annual gross sales for most businesses (n=10) were under £10,000, followed by between £10,000 and £20,000 (n=2). The product categories they had were fashion items (n=3), home accessories\(^5\) (3), furniture (2), jewellery (2), cabins (1), musical instruments (1) and artwork (1).\(^6\) The materials they used for upcycling were mostly used timber (n=4), fabrics (4) and packaging (3).\(^7\)

**Procedures and analysis**

The half day workshop consisted of keynote speeches,\(^8\) small group activities and a whole group discussion. For the small group activities, the participants were separated into two groups (6 per group) and each group was supported by an expert facilitator. The questions for the small group activities were open-ended questions on challenges faced by participants in their upcycling businesses and the support required for scaling up.\(^9\)

During the group activities, the participants were asked to write down their answers on post-it notes and stick them on the mapping board, indicating the size of each challenge and how common they are, and the importance of each type of support and the level of demand for it. After each small group activity, the results were presented to the whole group, who then discussed the actors responsible for introducing the changes.\(^10\)

The presentations of the results of small group activities and the whole group discussion were audio-recorded and transcribed. The transcript and mapping results were combined and categorised for interpretation through manual coding.

**Results**

The results are presented below with three categories: challenges, support and responsible actors.

**Challenges for scaling up**

Five themes emerged in challenges for scaling up upcycling businesses: materials, the craft of upcycling, marketing, the working environment, and consumer attitudes (see Table 1 for a summary). Sourcing sufficient used/waste materials was regarded as a big challenge and storing materials as a small challenge by most participants. The craft of upcycling (including material collection) was commonly viewed as time-consuming and this was not reflected in the price. One participant stated, "There's a massive amount of time involved in craft and hand-making processes. [...] Some people say 'Well, it didn't cost you anything for the raw materials, so can I have a discount?' People don't appreciate the time it takes to source the materials."

Varied product quality and inadequate quality assurance were seen as big challenges by many participants. One said, “Maybe some customers have had poor experiences [with upcycled products] in the past, and don't want to go down that route? And there's no quality assurance, regulations, or insurance.” Working with damaged materials was a common, small challenge in upcycling craft. Most participants found marketing time-consuming, as put by one, "If you are making individual pieces, which will often happen with upcycled products, you've got individual photos, individual descriptions, which take time.” The distinctive nature of upcycled products was considered to make it more difficult to position such products in the market. Identifying suitable marketplace (both online and offline) was a common, medium scale, challenge in marketing. Regarding the working environment, most sole trader participants indicated that they have a problem finding a suitable space in which to work. They either work from home, dealing with limitations and problems (e.g. limited space for materials and equipment, interrupting family, disturbing neighbours) or pay rent for the work space, which can be expensive.

Consumer attitudes were mentioned several times. Consumers' preference for mass-produced products was commonly perceived as a big challenge. One participant said, “If your products are beautiful and consumers will..."
come in and look at them, but then they will walk away and buy something mass-produced from Debenhams […] because it’s from a known brand. That’s what they like.” Consumers’ perception of upcycling (either non-existent or negative), reluctance to accept alternative (or waste) materials, and fear of product failure were also identified as challenges to overcome. On these matters, participants’ comments included: “Upcycling is not mainstream yet and consumers don't know about it”; “Consumers have low confidence in longevity and material finish [of the upcycled product]”; “Different can be scary”; and “Consumers have preconceptions that you are trying to sell them rubbish;”

Support for scaling up
Five themes emerged in support for scaling up upcycling businesses: a) changing consumers’ perceptions, b) financial and business management support, c) marketing support, d) materials, facilities and tools, and e) network (see Table 2 for the summary).

Changing consumers’ perceptions turned out to be the most important support that upcycling entrepreneurs need. The participants emphasised the importance of education and communication to raise awareness and enlighten the general public about the value of upcycling, providing evidence of environmental sustainability of upcycling and using social media for public engagement. One participant stated, “The key thing is, first of all, education and communication to more people that what we are doing is the right thing.” Another said, “Teaching the right values to start appreciating creativity. […] Too many people walk past, enjoy the upcycled products, and then go to the shopping centre to buy products.”

Financial and business management support was regarded very important. Many participants agreed that grants, loans, and low business rates for start-up costs and equipment would be extremely helpful. They stated that support with funding bids and some tips and know-how for managing businesses in creative industry would be very helpful. Effective marketing and promotion support was required for both online and offline activities. The participants did not seem to know how best to utilise social media in particular. One said, “Can we do everything through Facebook or Twitter? You’ve got all these platforms, and is there anything to bring them all together so you don’t spend all your life just tapping away at the computer?” Another said, “The downside of doing the same thing on all the platforms is that people will start to turn off.”

Connections with physical stores and pop-up shops for product exposure and actual selling was commonly required. Stable material suppliers, places to work (away from home), and equipment hiring service were identified as fairly important by some participants. Hiring industrial equipment was considered especially important for productivity, as put by one participant, “If you do want to do that mass-produced in a sense, you always need to do repetitive bit of work to some products. How easy would it be to do that task if you could borrow industrial equipment?” Networks amongst upcycling entrepreneurs were commonly perceived as a potentially extremely helpful support. They anticipated that they would learn from each other by, for example, holding regular events, and dealing with workload peaks by sharing work.

Actors responsible for change
Mainstream businesses, the government and local authorities were identified as key actors to act on scaling up upcycling businesses. Most participants believed that mainstream businesses should take more responsibility for their waste and encourage its reuse rather than pay to get it removed. One suggested role of mainstream businesses was to create a database collectively (at a regional or national level) to list their waste and donate or sell it to upcycling businesses.

Many participants felt that the government should amend policies and regulations on waste, health and
forms of support for scaling up upcycling businesses with potential actors. Local authorities, mainstream businesses and the Arts Council, Crafts Council, Design Council and Research Councils could potentially play a major role.

Local authorities could: a) run reuse and upcycling centres along with recycling centres, serving as a stable material supplier; b) provide affordable workspaces and, perhaps, an industrial equipment hiring service; c) create or support a local upcyclers’ community; d) raise awareness by organising events and seminars; and e) offer financial and business management support. Mainstream businesses (especially manufacturers) could: a) create a database of their waste for materials provision; b) offer unused industrial equipment as a hiring service; and c) share their retailers and know-how of marketing and promotion. The Arts Council, Crafts Council, Design Council and Research Councils could: a) provide subsidies for workspaces; b) bring together upcycling entrepreneurs at a national level; c) transfer knowledge in effective marketing and promotion in business management; d) disseminate upcycling knowledge; and e) support upcycling research and related initiatives (e.g. funding, collaboration).

Central government could introduce policies and regulations to encourage more reuse, repair and upcycling.

Many of the suggested forms of support would be beneficial to hand-made/craft businesses or start-ups. Connections with retailers and an industrial equipment hiring service could benefit any craft businesses (e.g. Jakob, 2013). Financial support or help with funding bids, networks with other entrepreneurs, use of social media, affordable workspace, support for effective promotion, marketing and business management could benefit any start-ups (e.g. Bruneel, Ratinho, Clarysse, & Groen, 2012; Carson, Cromie, McGowan, & Hill, 1995; Chandra & Medrano Silva, 2012; Jensen & Koenig, 2002; Watson, Hogarth-Scott, & Wilson, 1998). Forms of support that are particularly significant for upcycling businesses are the provision of stable material suppliers, skills development for high quality upcycling, education and communication to improve consumers’ perceptions and beliefs about upcycling and upcycled products, and policies and regulations to encourage more reuse, repair and upcycling.

Synthesising the results, Figure 1 maps the challenges and forms of support for scaling up upcycling businesses with potential actors. Local authorities, mainstream businesses and the Arts Council, Crafts Council, Design Council and Research Councils could potentially play a major role.

Discussion

Many of the challenges to upcycling businesses are also common in hand-made or craft businesses or start-ups. The hand-made or craft process is time consuming, and such products require time-consuming marketing (e.g. Liebl & Roy, 2004; Rosner & Ryokai, 2009). Any such business needs sufficient space to store materials and suitable markets to sell products, and competes with mass-produced products (e.g. Dissanayake, Perera, & Wanniarachchi, 2017; Jaitly, 1989; Tung, 2012). Many start-ups are based in a garage or struggle to find affordable work space (e.g. Audia & Rider, 2005). Particular challenges for upcycling businesses are in: a) sourcing sufficient used or waste materials with consistent types and quality, b) working with damaged materials and assuring quality, and c) changing consumers’ perceptions and beliefs about upcycling and upcycled products.

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including use of the school curricula to instil the value of upcycling in children. The higher education sector could play a crucial role in providing evidence of the environmental benefits of upcycling and equipping young adults with a new mind-set more open to alternative forms of consumption (cf. purchasing mass-produced goods). Art and design departments and business schools, in particular, could seek funding to work with upcycling businesses.

Among all the potential forms of support suggested by participants, improved materials provision, communication and education for the general public (e.g. television programmes, media coverage, community events and curriculum enrichment), tax benefits and subsidies for upcycling businesses, and grants and subsidies for upcycling research and related initiatives have been identified as priority interventions (considering potential impact and feasibility) for scaling up upcycling (Sung, 2017).

Conclusions
This paper investigated challenges and support for scaling up upcycling businesses across product sectors in the UK through an exploratory workshop with 12 British upcycling-based entrepreneurs in small businesses. It described British upcycling entrepreneurs’ perceived challenges, with an indication of their size and importance, and the support required for scaling up their businesses, with an indication of the importance of and demand for each form of support. It mapped the systemic support required to overcome challenges, with potential actors.11

Acknowledgments
The initial data collection and writing-up was funded by Nottingham Trent University with support from the RCUK Energy Programme’s funding for the Centre for Industrial Energy, Materials and Products, grant reference EP/N022645/1. Further analysis and writing-up was funded by Nottingham Trent University’s Materials Research Seed-Corn Fund. We would like to thank Sarah Kettley and Julian Robinson for facilitating group discussions.

References


House of Fraser (2017). Home Accessories [online] accessible at: https://www.houseoffraser.co.uk/home-and-furniture/home-accessories/055.0.0.0.0.0.pl


11 Building on this research, the ongoing inter-school collaboration project between the School of Architecture, Design and the Built Environment and Nottingham Trent Business School at Nottingham Trent University investigates challenges and success factors for scaling up upcycling-based SMEs mainly utilising wood and textiles in the UK with systems thinking approach.