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Integrative re-use systems as innovative business models for devising sustainable product–service-systems

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ABSTRACT

Re-use implies recovering items from the waste stream to use them in identical or similar processes, mostly at consumer level. Currently, re-use is restricted to niches, but by 2020 the European Commission wants to mainstream re-use as a waste management option to increase resource efficiency. Ecologically oriented work integration social enterprises focussing on re-use (re-use ECO-WISEs) might help accomplish as they not only intend to re-integrate marginalised people into the labour market, but provide comprehensive re-use services (e.g. repair) and thus constitute a novel kind of Sustainable Product–Service System (SPSS). This paper contributes to a scientific framework for re-use ECO-WISEs by linking existing theoretical knowledge on SPSS to novel knowledge from three cases representing the variety of re-use ECO-WISEs in Austria. For analysis we use the so-called Business Model Canvas, adding a comprehensive stakeholder consideration. Results show that re-use ECO-WISEs contribute to all three dimensions of sustainability by helping reduce waste and increasing resource productivity and by providing jobs and affordable goods for disadvantaged people. Full implementation, however, will need additional efforts from all stakeholders involved, including the ECO-WISEs themselves, but also public authorities and society at large.

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1. Introduction

Resource efficiency and resource productivity have become major issues in the international discussion on sustainability: in the European Commission's "Roadmap towards a Resource-Efficient Europe" the EU demands that by 2020 within the EU-28 "recycling and re-use of waste are economically attractive options for public and private actors due to widespread separate collection" (EC, 2011). Already in 2008, based on the G8 Kobe 3R Action Plan (G8, 2008) in a similar Recommendation on Resource Productivity, the OECD advises strengthening life-cycle-oriented 3R policies (reduce, re-use, recycle) in order to increase resource productivity (OECD, 2008). This recommendation was reissued and clarified in the 2011 report (OECD, 2011). The European Commission (EC), however, uses a slightly different waste-related nomenclature in the Waste Framework Directive (EC, 2008, c.f. 3.2), based on a five-level hierarchy of reduction as the most desirable option, followed

by preparing for re-use, recycling, recovery, and disposal as the last option. Accordingly the internationally well-known 3R concept and the European approach differ slightly. Still, the EC Waste Framework Directive obliges all EU member states to implement waste reduction programmes until December 2013, including the "promotion of the reuse and/or repair of appropriate discarded products or of their components" (EC, 2008), thus aiming to mainstream re-use.

The Austrian reduction strategy has been integrated in the 2011 Federal Waste Management Plan (BMLFUW, 2011) and will be valid through 2016. The main idea pertains to transforming the system of second-hand shops or flea-markets into a professional system within the waste regime and providing affordable, effective "preparing-for-re-use" services and re-use products to reduce waste volume and extend product lifetime. This in turn involves a plethora of innovative product- and service-oriented processes like collecting, repairing, re-designing or remanufacturing and redistributing these waste-considered products. As in other EU countries, Austrian re-use initiatives go to great lengths to develop appropriate business models to establish new (sustainable) product–service systems (SPSS) as to re-use. The result mostly involves so-called ECO-WISES – ecologically oriented work integration

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social enterprises (Anastasiadis, 2013a): Having initially been founded to re-integrate marginalised people into the labour market, ECO-WISEs have recently grown into developing and implementing re-use business models. Still, up to now they have mainly succeeded in niches where people either cannot afford to buy new products or in lifestyle niches where sophisticated, well-to-do people appreciate high-end design products made from used materials (“trash-design”) (Neitsch et al., 2010).

Research on re-use SPSS business models consists mainly of top-public publications by practice-oriented institutions; scientific reflection and consideration are missing as well as a well-structured classification of re-use. Thus, we investigate appropriate features of re-use business models featuring SPSS characteristics, aiming to contribute to a scientific framework for re-use ECO-WISEs. We address the following research questions:

- (How) can re-use be classified as SPSS?
- Which elements of products and of services are involved in a re-use SPSS and what are their relations?
- What are the constituent features of a re-use ECO-WISE?
- What is necessary for re-use ECO-WISEs to become widely accepted, and what are potential pitfalls?

The paper is structured as follows: After outlining the method and cases we consider the theoretical implications of a re-use SPSS. Then we expand on the features of a re-use ECO-WISE business model based on the results of the case studies before discussing pitfalls and room for improvement.

2. Method and cases

2.1. Description of the method applied

This paper aims to open up the field of investigating re-use oriented SPSS by applying a qualitative approach. To investigate the structure of the phenomenon, we reduce complexity by linking existing theoretical to novel case-specific knowledge and taking into account a problem of the life-world: establishing re-use as an SPSS business model (Pohl et al., 2008).

We applied Yin's (2008) case study methodology, by first devising a conceptual framework on how re-use and SPSS are related and can be integrated into a business model. To this end we performed an extensive literature review as to SPSS, business models, social enterprises (in particular ECO WISEs) and re-use, but – as expected – retrieved only few useful results as to the latter. Secondly, we selected the cases of three diverse Austrian re-use ECO-WISEs so as to cover the range of current re-use activities in Austria. Aiming to generalise theories (Silverman, 2013) the number of cases was less important than their diversity. The cases are briefly described in Section 2.2. In the third step we collected data, mostly documents (presentations, websites, protocols, observations, and inquiries on re-use activities in Austria). As for triangulation (Silverman, 2013) we also included meeting memos from personal observations and informal discussions. In step four we did a qualitative data analysis on the basis of categories taken from a slightly modified version of the business model canvas (Osterwalder and Pigneur, 2010), adding stakeholders as a category (cf. 4). In the last steps we moved away from “holistic viewing of the cases toward constrained viewing of the cases” (Stake, 2013). Still, as theory on re-use enterprises so far hardly exists, theory building and analysing the cases were done in an iterative approach. This is suitable, as our research aims at exploring and extending theory by investigating representative aspects of particular cases to portray the SPSS components of the re-use system in an integrative way (Yin, 2008).

2.2. Basic features of the cases

We elaborate in detail on three cases, chosen in order to represent a wide variety of re-use ECO-WISEs currently implemented in Austria. The cases differ as to their business purpose, type of enterprise, range of products/service and product–service ratio, procurement and marketing, but they are all WISEs integrating a social aim and depending on public funding as well.

2.2.1. “ReVital” as an example of a re-use network

ReVital (ReVital, 2013), founded in 2009, is an example for a re-use/repair network on a franchise basis in the province of Upper Austria. ReVital is both a brand name for re-use articles and an umbrella organisation that coordinates re-use material and compensation flows. Reusable items are collected in associated community waste centres, distributed to particular repair or refurbishing enterprises and finally sold in one of now fourteen specialised ReVital shops and other sales outlets. All these repair and sales shops and outlets are not-for-private-profit work integration initiatives. The network helps guarantee technically safe repairing and refurbishment at an attractive price.

2.2.2. “BAN” as an example of a re-use enterprise

BAN (“Beratung Arbeit Neubeginn” – Consulting, Work, Restart; BAN, 2013), founded in 1983 but currently undergoing massive changes as to the business idea, is a non-profit-maximising limited company in Graz (in the province of Styria) with some 50 employees, 30 of whom seek re-integration into the labour market. BAN procures its input from pick up and clearing out of flats or houses (for instance when these are sold), but also as an official City of Graz recycling centre. The output is sold in BAN retail shops, sometimes after having been repaired or refurbished in BAN's own repair shops. BAN is also involved in innovative projects, like establishing a return system for old furniture (in co-operation with two large furniture chains) and “Re-use Friday” (cf. Section 5). BAN has also taken part in teaching projects at the University of Graz dealing with procurement models for re-use items and awareness raising for re-use in general.

2.2.3. “Heidenspass” as an example of re-design

Heidenspass (“Huge fun”, Heidenspass, 2013), founded in 2005, is a Graz-based work project for young people from 15 to 25 years old in challenging situations (e.g. unemployment). Heidenspass offers low-threshold occupations. With no previous knowledge young people can work in Heidenspass by the hour up to a fixed amount per month to socialise, gain support, and qualifications towards succeeding in an ordinary job as well. Heidenspass is organised as an unincorporated association with open memberships for the juvenile as well as supporting members (e.g. customers). Heidenspass develops, produces, and sells products according to an upcycling or ‘trash-design’ philosophy, always bearing in mind utility and design. As for procurement Heidenspass offers bonuses for pre-defined amounts of special items (e.g. fancy plastic bags or records) people bring there.

3. The SPSS context of re-use

This section aims to explain how re-use systems can be analysed and understood as SPSS. Before doing so, however, we unpack the notion of “re-use”, as it has not yet become commonplace.

3.1. A definition of re-use

When defining re-use it has to be stated that the notion is ambiguous: 3R approaches consider re-use in a bigger, also

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