

Value excavation

Towards a process model for multi-value creation in multi-actor contexts in a circular economy

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Abstract

Sustainable and circular business models aim to address societal challenges, shaping the transition towards a sustainable (regional) development and a circular economic system. A task democratic product council is suggested to give shape to the necessary coordination for such transition, providing a platform for sustainability transitions of a specific product family within a specific geographical area. This unfolds against the backdrop of a growing urgency to take drastic steps towards a sustainable development and thus far inadequate responses by political systems and market dynamics. The political arena is caught in a short term focus

prompted by political tenure. The market suffers from amnesia and short termism. As a possible way out, this paper presents the ‘Bootstrapping a Product Council’ method that aims to establish such product councils for transition. In two cases, we illustrate how the method unfolds in practice. Given the immaturity of the cases, they do not fully capture the extent of our method, but already provide insights into its working. Although the bootstrapping method is still incomplete and is largely untested, first empirical confrontations show its potential.

1 Introduction

Sustainable and circular business models aim to address societal challenges, shaping the transition towards a sustainable (regional) development and a circular economic system. Circularity and sustainability are challenges in social systems that both qualify as ‘wicked problems’ (Jonker and Faber, 2021; Faber, Bootsma, and Pennink, 2022). Both present themselves as seemingly simple problems, yet when engaging with each, they show themselves to be ill-formulated, and information that may provide clarity is either absent or ambiguous (Churchman, 1967; Rittel and Webber, 1973). More pressing for this discussion, is that both witness the involvement of a wide array of stakeholders, either involved in decision-making or affected by it (see for instance Jorna, 2006). Lastly, consequences of chosen actions cannot be assessed up front, and strongly depend on unknown and unforeseen dynamics within the social system. The nature of wicked problems calls for a broad coordination effort, working on multiple aspects simultaneously, in order to be resolved. Given that the realisation of a sustainable regional or local development involves a wide array of stakeholders some form of societal coordination is required. Faber et al. (2022) bring to the fore the concept of *task democracy* as a way to shape such coordination. Their approach rests on two foundations: (i) shaping a democratic process for coordination of circularity efforts through *product councils*, and (ii) providing a means for rapid proliferation of this democratic process across echelons in society and across regions.

In our definition, a task democratic product council is a coordination platform for sustainability transitions of a specific product family within a specific geographical area. Conceptually, the product council brings together the task democracy model and sustainable business model thinking. This hinges on the principle distinction between liberal and task democracy. In contrast, task democracy leverages the reach of sustainable business models, arranging connection and coordination of its transitional potential to transition efforts of broader society.

The council consists of five actor groups with equal voting power: science, demand, government, supply and nonprofits. The actor groups are represented by their officials or their democratic networks. The council’s chair is independent. The product family may be broad (like building materials) or narrow (like PVC). Likewise, the geographical area may vary from local to global. Typically, a local product council would cover a broad product range,

while national or multinational product councils would focus on more specific product types. The geographical area preferably matches a governmental area, like a municipality, region, national state or continental community. The scope of a product council is limited to the sections of the product chain present in the geographical area. The concept is designed to be scalable and conjunctive, so networks of product councils can be established (Faber, et al., 2022). In such networks, local product councils may concentrate on local-for-local production, consumer behaviour, retail assortment, et cetera, while top level product councils may focus more on raw materials, regulations and manufacturing.

Product councils may run a duty cycle comprising three tasks. First they prioritise circularity and sustainability issues into a shared agenda. Second is initiating area wide transition campaigns. Third is measuring relevant sustainability trends and campaign impact. We argue that the product council model, given the urgency of sustainable development, should be designed for rapid proliferation. Faber et al. (2022) present four design criteria to this end, and a manifesto template according to these criteria.

A product council may ultimately represent all of society and therefore needs to bridge a wide diversity of societal value systems. The council is therefore political by nature and will need appropriate governance models and operating procedures. A basic analytical model to test this scoping is the *value-actor matrix* (Faber et al, 2022; Gerrits and Pennink, 2022), that conceptualises (regional) sustainable development. The matrix, partly based on the task democracy actor model, has columns for each of five actor groups (science, citizens, government, businesses and nonprofits)¹ and has rows for three major value types (social, ecological, economical). The 15 cells are empty, thus an invitation to be filled in with more specific ethical values, capital or trend indicators, names of representatives, et cetera, depending on the application purpose. Filling in the matrix will draw attention to empty cells, and this way the matrix may help in creating a more comprehensive vision and better mutual understanding between actor groups. The matrix may come to practical use in e.g., bottom-up or government-led group sessions and in product councils. The matrix may help to ‘excavate’ values from their matrix cells and to generate shared commitment for joint efforts.

¹ While these five actor groups show resemblance to the Quintuple Helix concept, their points of departure are fundamentally different. The Quintuple Helix model developed from the original Triple Helix model, and is in its core business-centred. That means that all efforts of identified actors serve the ultimate goal of businesses: innovation and shareholder value. The five actor groups identified in the task democratic model originate from the need for coordination of societal transition. Businesses are one of the actor groups, but their interests are not leading in the direction towards transition. Ultimately, the task democratic model aims to keep collective human behaviour within planetary boundaries and assuring principal social foundations, through the arrangement of the political system. The task democratic model is an instrument for representative democracy, complementary to liberal democracy. The distinction between the Quintuple Helix and task democratic models becomes visible e.g., in the role assigned to science and education. In the Quintuple Helix model, these two roles are conflated, and reduced to the task of schooling new employees. The task democratic model keeps them separate, assigning science the task of sense-making and interpretation of sustainability developments, and measuring the impact of collective transition campaigns.

In this paper, we suggest a stepwise method for initiating a product council, from scratch. The method builds on the manifesto template (see Faber et al., 2022) and a brainstorm canvas developed by the Noorden Duurzaam association. It may be used by bottom up and governmental initiators alike to set up an initiator team. Then, rather than formalising the council right away, the first effort is to initiate a small or medium scale circularity campaign, as an exercise or a proof of concept to gain support. Crucial in the campaign is horizontal and equal collaboration between five societal sectors, which creates a transition power that may not exist otherwise. The stepwise method to set up product councils has until June 2023 been tested partially in two cases in The Netherlands. This paper includes an account of these cases, a discussion of the results so far, an invitation to join this line of research and suggestions for further investigation.

In section two, we elaborate on the theoretical background of the approach we suggest. Section three suggests a first version of our method, followed by an elaboration of its application in two cases in section four. Lastly, section five provides final discussion and conclusions.

The mind map below (Figure 1) may help in navigating our research. Green boxes are contextual, blue is our 2022 paper, purple is this paper.

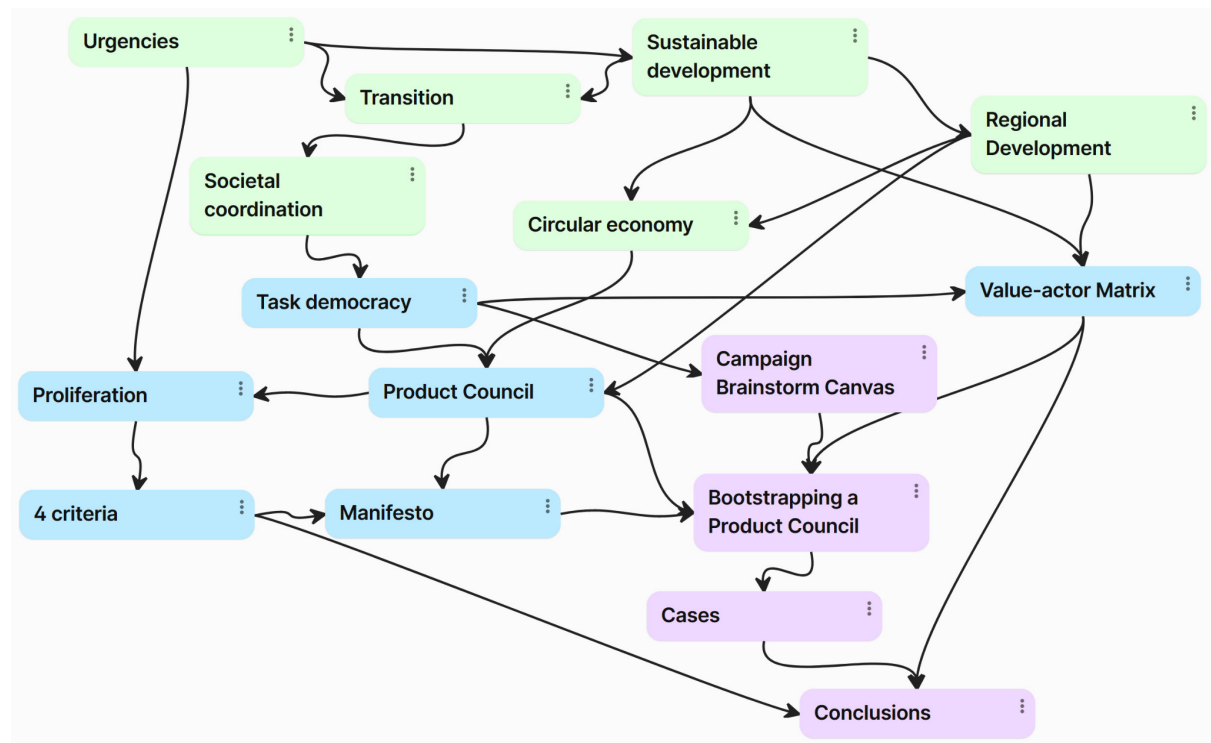


Figure 1 Paper mind map

2 Background

This paper unfolds against the backdrop of a growing urgency to take drastic steps towards a sustainable development (IPCC, 2023) and thus far inadequate responses by political systems and market dynamics. IPCC (2023) sketches grim pictures about the state of our planet under a global temperature rise above three degrees centigrade. Additionally, they provide several routes that may be followed, but need to be taken in the short term, to avoid most disastrous scenarios. Given the short timescale on which these developments take shape, the mechanisms we have in place for societal coordination (i.e., political states and markets), are incapable of ensuring a swift change of course. The political arena seems to be caught in a short term focus prompted by political tenure (van Reybrouck et al., 2018). Lastly, the market seeks for lowest price points and suffers greatly from amnesia and the inability to make long term plans (Pryce et al, 2011).

The urgency of the matter calls for an accelerated transition towards sustainability and circularity, involving a broad array of issues and actors (Faber et al., 2022). Transitions involve collaborative efforts between actors from different parts of society, culminating in the establishment of new, semi-stable configurations of institutions and infrastructure arranging specific parts of life (Geels, 2002; Geels and Schot, 2007). Bidmon and Knab (2018) identify the role of business models as a means to capture new perspectives on value creation and bring these to the necessary levels of maturity to establish a transition.

Given these urgencies, we ask ourselves what objectives may be set, and what corresponding normative models are available. In 1987, the UN published the widely used Brundtland definition of sustainable development (WCED, 1987), followed in 2015 by the 17 Sustainable Development Goals (United Nations, 2015). Rockström and Sukhdev (2016) sorted these 17 goals into a ‘wedding cake’, showing the dependency of the economy on society and of society on the biosphere. A similar analysis can be found in the doughnut economy model, requiring the economy to respect ‘natural ceilings’ en ‘social foundations’ (Raworth, 2017). Thomas and McElroy’s (2016) multicapital scorecard translates these notions to (1) carrying capacities of natural, social, and economic capitals (see also Porritt, 2007 or Gleeson-White, 2014) limited by thresholds and (2) use allocations. This way, they bring Raworth’s (2017) doughnut economics and its normative character towards integrated reporting practices for organisations.

Normative models for sustainable development tend to be holistic, asking for integrated state policies (Frissen, 2023). Frissen warns that such visions, even when backed by scientific data, may end up being totalitarian, subjecting all aspects of life to political control. He states that such sustainability visions will never represent all value systems in society, and thus will violate a core democratic value: plurality. This will evoke resistance that eventually may block progress. However, when the mere existence of a civilization is in danger, unity may be valued even higher, degrading plurality to a luxury (Mantheakis, 2021). With

sustainability issues increasingly being categorised as existential, that crossroad comes closer. Therefore, we consider researching alternative democratic decision making models that may produce more unity than liberal democracy is capable of, as urgent.

Task democracy is an attempt at such a model (Faber et al., 2022). It assumes the democratic state is and will remain to be based on liberal democracy. However, it positions the state also as one of five transition actors. In this capacity, government is on par with science, citizens, business and nonprofits. Each of these groups may be associated with specific non-transferable transition tasks, which makes the actor groups mutually dependent. Together, these actor groups may co-create society-wide transition campaigns, consisting of voluntary contributions by their constituency. This implies democratic representation of each group, capable of communication within the group and of negotiating with the other groups. In decision making about the objectives and joint activities of such campaigns the actor groups would have equal voting power. Equality may also be a beneficial and emancipating factor in negotiating collective compensations for disadvantaged groups in transition campaigns (Mantheakis, 2021). If this type of societal coordination produces synergetic society-wide campaigns, then a new and collective ‘transition power’ will have emerged, complementing the classical legislative, executive and judicial state powers (Montesquieu, 1748). One could say it would create a ‘*tetras politica*’ that, similar to the *trias politica*, respects plurality.

The task democracy model assumes voluntary contributions. The question however is, how plausible it is that voluntary contributions will lead to sustainable development and the realisation of a circular economy. We observe some empirical support for optimism. In a circular economy project in the municipality of Groningen, the Netherlands, a group of entrepreneurs discussed possible circularity measures. One group member stated he would not start on his own, but *as a group* they would not object to being *forced* collectively. As all agreed to this, a covenant could be reached which significantly reduced the usage of virgin materials (Noorden Duurzaam, 2013). This result shows that a level playing field may boost participation. An even stronger effect was observed in a laboratory experiment by Hauser et al. (2014). Subjects were asked whether they would be willing to consume less if that would secure the availability of resources for their grandchildren. It appeared that 68% would do so. While this might seem sufficient, the consumption pattern of the others would, in the applied economy model, still lead to resource depletion within four generations. To test improvement options, the team added a few words to the question: would you consume less *if everyone else does*? Now the positive response rose to a full 100%, unveiling the importance of group values and culture. To test for robustness, grandchildren were replaced by great-grandchildren. The 100% result remained, up to twelve generations (Hauser et al., 2014). While these observations cannot prove that voluntary support will occur outside of these specific contexts, they do give hope that research into society-wide decision making and market-wide collaboration models, like task democratic product councils, may yield useful results. They sustain the case for experiments.

This gives rise to the question of how to implement an experiment with a task democratic product council. The conceptual problem that arises now is that on one hand we want to experiment with a small scale low profile pilot project, for reasons of risk avoidance and expected low initial support, while on the other hand we want to test a model of full participation of five societal task groups, which would require a large scale high profile setup. In other words, how to 'bootstrap' a product council? Working towards a method we propose the following criteria.

- The method for bootstrapping a product council we want to design should begin at the startup decision of the first mover. This is a person who is involved in a specific product chain, has sufficient knowledge and influence and is intrinsically motivated to make the product chain more circular or sustainable.
- The method should be of help to this person in gaining support, creating a group and in stepwise scaling up to a full scale product council.
- The method should help create conditions for large scale participation from five actor groups.
- The method should invite all participants to focus on multi-value creation, including ecological, social and economical values.
- The method should meet proliferation criteria, as we are not interested in bootstrapping just one product council but in large scale application of the concept, for impact in as many product chains and areas as possible (Faber et al., 2022). So, in order to proliferate, (i) the method should be *integrative* towards top down and bottom up efforts, in order to join these forces. Also, (ii) it will need to be *scalable* from local to international. Furthermore, (iii) it needs to be *diplomatic* as it creates a political decision making process, involving an array of value systems. Lastly, (iv) the method needs to be *intuitive*, so that any process facilitator can work with it. Applying these criteria to the concept of a product council has produced an open access template for a two page product council manifesto (Faber et al., 2022). Applying these criteria to a bootstrapping method may lead to a similar, compact result.
- When the method includes tools of any kind, then these tools preferably are open access available, user friendly and efficient. Tools may include survey tools, mapping tools, group facilitation tools, brainstorming tools, document templates, etc.
- The method should be sufficiently self-explaining. A community of practice should be in place where questions and support can be asked and knowledge can be shared.
- The method should be open access available in English and in other languages. Users must be able to upload their translations to a central open access depository. Users must be able to register so they can be notified of updates.

To summarise, the urgency of sustainable transitions and circular economy finds growing consensus. However, in liberal democracies, normative models for sustainability and circularity often represent single-value systems and will therefore encounter resistance that eventually may block progress. We therefore focus on a different category: models that innovate democratic decision making itself, like task democracy. In previous research we used task democracy to construct the concept of task democratic product councils and to condense this into a manifesto. In this research we focus on the process of bootstrapping such a product council. Lastly, we developed a set of eight criteria to be used in constructing and assessing a method.

3 Conceptualisation of method

In this section we develop our method for the development of a product council. We present this in a compact style without academic references, to provide an easy to copy template for case studies and practical experiments. The method includes steps to initiate the process of campaign development, which is a key to achieving impact. What follows is a series of considerations that together form the backbone of our method.

The method is called ‘Bootstrapping a Product Council’. Its purpose is to assist in establishing product councils that coordinate societal efforts for a circular economy. We borrow the term bootstrapping from the field of Information Technology, emphasising the ability of a computer to start itself. In the context of this research it refers to the situation of initiators, eager to promote sustainable development and circular economy and seeking leverage. Bootstrapping may seem impossible, but it can be done. At the same time, bootstrapping is not enough. It sets a train of events in motion but needs to be followed up by a less minimalistic and more comprehensive approach.

The method is intended for use by initiators, either bottom up actors in a specific product chain, administrators of networks such as industry branch organisations and consumer groups, or government officials such as MP’s, policy writers and public administrators. There may be a single initiator, or a small homogeneous or heterogeneous group. It is assumed that the initiators are familiar with and appreciate the notion of the value-actor matrix, which asks for full value awareness by all stakeholders. Also, basic insight is assumed in the task democracy theory, that builds on equality and task division between five societal actor groups.

The process unfolds according to the steps described in the diagram in figure 1. It starts with a first mover initiative. Next, the process unfolds around the main stages (I) Think tank composition, (II) Setting the agenda, and (III) Campaign construction. Once established, the product council has both a community and agenda in place to start development of

campaigns. For each of the smaller steps in the various stages, we provide a brief description below. Single and multiple steps of the process may be iterated.

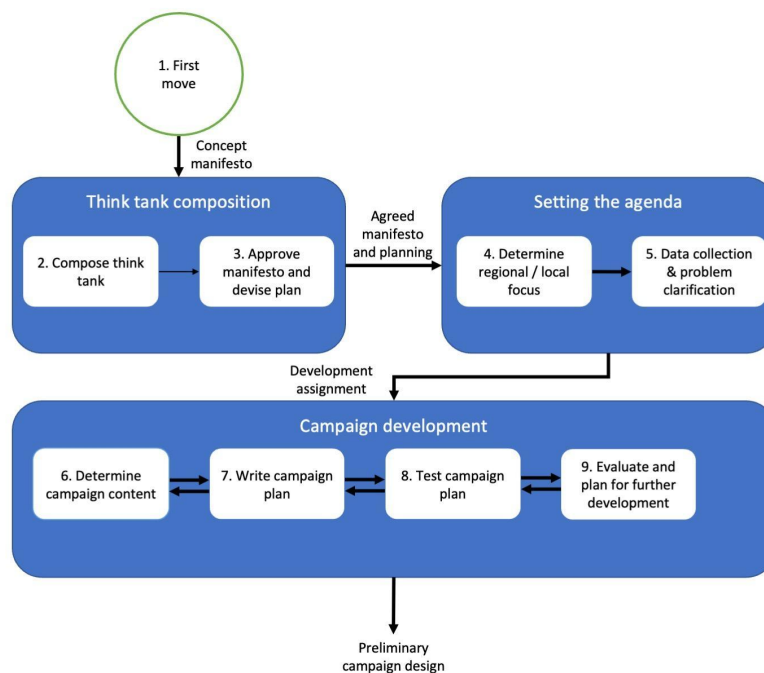


Figure 1 Bootstrapping a product council for sustainable development and circularity

Step 1 is labelled ‘first move’. This is the starting point of the method with the aim to form a small team of people that support the idea of a product council on a specific product family in a designated region. This team is henceforth known as the ‘initiator team’. In collaboration, the team turns the product council idea into a starter document: ‘the manifesto concept’.

The manifesto concept forms the input to step 2, ‘compose think tank’. The initial idea of a product council is disseminated to leaders / prominent people in society that may help to bring it to scale. From here on, this group of leaders forms the product council’s think tank. At the end of step 2, both the members of the think tank and the initiator team have announced their commitment to the process and are ready to proceed. Subsequently, in step 3 (‘approve manifesto and devise plan’) it is the task of the think tank to scrutinise the manifesto, assessing the feasibility of the product council and formulating adjustments. This leads to a consolidated and agreed upon manifesto. Furthermore, a plan of action is devised to implement the manifesto.

A selection of circularity or sustainability issues is made in step 4 ('determine regional/local focus'). The product council think tank composes a list of issues, prioritises these, and decides upon the issue to include in an experiment. Simultaneously, involved actors and values are elaborated. Step 5, 'data collection and problem clarification, is optional in our process. In case the think tank deems it has too little information about the sustainability issues identified previously, this step allows for further inquiry. The initiator team (see step 1) is at play to further clarify the prioritised issues of circularity and sustainability. For this, the team identifies relevant indicators and trends, and collects empirical insights on the issue and potentially the actors.

During step 6 ('determine campaign content'), the content of the campaign on the prioritised issue(s) is co-created by the initiator team and the product council think tank. The campaign canvas (see figure 3) is used as the core instrument in the development of the campaign. At the end of this stage, a filled-in canvas portrays the content of the campaign. The created campaign canvas (see step 6) is developed into a campaign plan by the initiator team in step 7 ('write campaign plan'). The details of the plan, in which among others tasks, timing, and budget, are specified. Subsequently, tasks are assigned to members of the initiator team and product council think tank. Step 8 ('test campaign plan') is all about reviewing the devised campaign plan with the intent to find its weaknesses and shortcomings, and determine its feasibility. The review leads to either further refinement and improvement of the plan, or when impossible to do so, its abandonment.

In contrast to step 8, step 9 reflects on the workings of the initiator team and product council think tank. This concerns both an assessment of the quality of the process as well as of its outcomes. Ultimately, the think tank members formulate final conclusions and decide on follow-up steps regarding the campaign plan.

The full method description is available in Noorden Duurzaam (2023).

4 Case illustrations

To illustrate the workings of our method, described in the previous section, we provide two cases. Besides illustrations how the method operates in practice, the cases are used as a learning environment for further enrichment. Because the cases we present are in early stages of development, they do not present a full-fledged product council yet. Instead, they exemplify how the process towards the development of these unfolds. We ask five questions to shape the learning process. Firstly, who is involved? The product council perspective is founded on the premise that five societal sectors are at play. If so, the cases should show this in practice. Secondly, when does each stakeholder group speak? Each stakeholder group represents a specific sector in society, which feeds to the expectation that each will speak out on subjects that matter to them. Thirdly, which stakeholder groups present what values and to what extent are these accepted by the others? This question extends the previous, in

that it focuses on the content of the contributions uttered by stakeholder groups and the values these bring to the fore. This builds on the proposition that the involvement of multiple societal sectors leads to a wider array of values coming into play. Fourthly, how do we mobilise actors? Because each stakeholder group represents a specific part of society, and these have been selected because of their prominent role within their peer group, they are expected to hold a position of influence. Fifthly and lastly, what impact may be realised? This question focuses on the main objective of the product council and is the consequence of all preceding questions. The idea here is that if all stakeholder groups are properly represented, they should cover a wide range of values regarding sustainable development and circularity, be able to bring decisions to a larger audience and gain their support, finally realising campaigns for change and impact.

Case 1 - reuse of materials in construction

A construction company based in the centre of the Netherlands aims to promote innovation and sustainability in its operations as well as upstream and downstream in their product chain. Specialising in timber frame constructions and prefab homes, the medium-sized company generates an annual turnover of approximately €70 million and has around 130 employees. The importance of collaboration is recognized, the construction company seeks to cooperate with different stakeholders being suppliers, customers, government bodies, scientific institutions, and nonprofits, to achieve sustainability goals. To facilitate cooperation, the company adopts the task democracy model and the bootstrapping method for product councils, which involves conducting workshops with all relevant actors to develop sustainable solutions.

In this case, the focus is on the company's window frames, manufactured in their own carpentry factory. One innovative aspect is the circularity of the wooden window frames. By standardising the measurements and implementing a click system for fastening, the company wants to enable easy removal and replacement of window frames. Old frames may be refurbished in the carpentry factory for future use, effectively adding over 30 years to the typical 50-year lifespan. The executive team has identified challenges with standardisation, such as project developers and municipal officials often requiring customised window frames. Additionally, changing project dimensions over time and increased regulations pose further challenges for the company.

Standardisation plays a crucial role in promoting sustainability within the construction industry according to the executive team. It facilitates the use of sustainable materials, promotes circularity, and encourages collaboration. Standardisation ensures uniformity in processes and manufacturing materials (Plant, Harrison, Griffiths & Lam, 2010; UNECE, 2017). Benefits include lower production and procurement costs due to economies of scale, simplified and more affordable repairs and replacements, and increased resource efficiency

(Giama, Papadopoulos, 2012; Leffers et al., 2022). Certifications for sustainable goods and services enhance customer awareness and drive environmentally friendly practices (Plant et al., 2010). Standardisation also fosters the development of circular supply networks by establishing standardised procedures for waste processing and recycling, thereby promoting resource reuse (Leffers et al., 2022). However, challenges arise from potential neglect of local circumstances and stakeholder demands, leading to homogeneity and reduced innovation (Fawzy, 2017; UNECE 2017).

Prefab timber system construction, characterised by off-site manufacturing of wood parts like wall panels, roof trusses, and flooring systems, offers another avenue for sustainable development in the construction industry (Nagarjuna et al., 2022). This method reduces construction time, waste, and carbon emissions by utilising renewable and low carbon-emitting materials. Cooperation and co-creation among designers, manufacturers, and builders enables sustainable building practices and the use of environmentally friendly techniques (Tee, Davies & Whyte, 2019). Prefab constructions may facilitate the circular economy when they are designed for easy disassembly, resource reuse, and standardised components, reducing waste and promoting resource efficiency (Tee, Davies & Whyte, 2019; Leffers et al., 2022). By reducing the need for concrete, which contributes significantly to global CO₂ emissions during its manufacturing process, timber-based prefab constructions offer a more sustainable alternative (Nature, 2021).

The adoption of detachability as a key principle in sustainable building further enhances resource efficiency and reduces waste (DGBC, 2022). Detachable building components can be reused or recycled, extending their lifespan and minimising the need for new materials (DGBC, 2022). This practice contributes to reducing carbon emissions associated with the production and transportation of new components. Detachability allows for the easy replacement or upgrading of components, making them suitable for multiple projects and ensuring flexibility and adaptability (DGBC, 2022).

Sustainability and circularity may be pursued by standardisation, modularisation, design for disassembly and reusability, etc. Or, as the CEO puts it, “Disassembly is important, it runs parallel to standardisation. Manufacturing standardised building elements to be removable, enables a carpentry factory to refurbish these elements, extending the lifespan”. This requires market-wide collaboration, and a platform for coordination such as a task democratic product council. The executive team in this case indicate they appreciate the product council model for its predictable and equal distribution of influence between actor groups, and for its weighted decision making process using a voting system. They expect that the bootstrapping method, resulting in a preliminary campaign plan, will shorten the startup phase and generate support from stakeholders. They have no clear expectations yet of the impact a full scale product council would make, but want to find out.

Bootsma and Broecks were invited to participate in an initiator team, further consisting of two executives, an industry journal representative and a public relations consultant. The executive team clearly communicated their ultimate goals, which facilitated smooth preliminary scoping. Subsequently, discussions were held to determine the participants for the next stage, aiming to progress towards step 2: Gathering influentials for a Product Council think tank. They were successful in identifying prominent individuals from five sectors in the task democracy model who are associated with relevant organisations. Two individuals were selected from the science and government sectors, three from citizens, four from businesses, and one from nonprofits. The think tank may in due time develop into a full product council. Future members may be invited based on five criteria: (i) representing a majority or large groups in their respective sectors, (ii) holding positions of influence, (iii) expressing interest in contributing to circularity, (iv) being known for their focus on social, ecological, and/or economic aspects of sustainable development, and (v) being open and sensitive to different perspectives and opinions.

In the process of creating a product council for wooden window frames, the company is currently in stage 2. The initial idea of establishing this council was articulated in step 1, as the need to address the challenges and opportunities in the wooden window frame industry was recognized. The main focus for the product council is standardisation, aiming to develop a set of agreed-upon standards and practices. Currently, there are still 7 steps remaining to complete the product council.

Case 2 - sustainable student housing

The project is a demonstration of an integrative approach to sustainable student housing. It combines several concepts in a living lab: bio-based, prefab, energy-neutral and circular tiny houses, cooperative and responsible living, and task democratic collaboration between all actors.. In the north of the Netherlands, the project aims to create a small number of prototype homes with a long-term vision expanding to 200 and eventually 1,000+ student houses. To manage the project, a group is formed consisting of innovators, researchers, investors, government representatives, entrepreneurs, and nonprofit organisations. The project participants represent the five actor groups of task democracy, being science, citizens, government, businesses and nonprofits. The project also has a supportive university on board, promoting experimentation, innovation, and collaboration. The project includes biobased, demountable, circular, and modular building methods in an attempt to reinvent building methods of student housing. The key to producing high-quality living spaces with minor impact on the environment is being realised by using local resources, recycled goods, biobased products and modular, reusable building elements. The project seeks to develop important insights and expertise in sustainable building techniques by combining research and practical implementation. The initiators of the project envision an autarkic small village

of 20,000 houses by 2030. They hope to minimise its footprint and to contribute to the transition towards a circular and bio-based economy.

Analysing the steps

First move: The initiator is an entrepreneur in plastics recycling, experienced in sustainable building methods. His plan is to build two prototypes for student housing, one biobased, the other circular. With this vision the initiator created a concept presentation, explaining social, ecological and technical requirements. To realise the project he invited influential people to join a think tank. The think tank was created and consists of two researchers, an investor, a government representative, an entrepreneur and a non-profit representative, all sharing the same interest. This composition almost matches the task democracy actor group model. Only users of the (yet to be built) pilot housing project are missing but are to be invited later on. As the project involves capital investments by some but not all participants, Noorden Duurzaam proposed a custom version of the product council manifesto. This arrangement gives the actor groups equal voting weight in decisions about common activities, while decisions about investments and exploitation remain private. The focus on the area was pretty straightforward since the initiator had already found a location to build the two prototypes and had the ambition to scale up the project in a relatively short amount of time. Since a university supports the project, gathering data was mostly done by junior researchers following programmes that also suit the project. Clarifying the problem mostly concerned the choice between non-sustainable methods of building construction and more sustainable alternatives. In this case, this includes locally grown and manufactured biobased insulation, and recycled plastic elements for walls, floors and roof. The buildings in this project will be cube houses that may be stacked vertically and horizontally. The project will promote sustainable materials, standardised products, removable components, utilisation of local resources, and strong collaboration. The filled in brainstorm canvas below shows campaign elements from which a plan will be written up. The following two steps, being testing the campaign plan and evaluating the plan for further development, still have to be accomplished.

The participants in this project expect that the task democratic governance model will help the project to succeed, because it involves commercial entrepreneurship and protects its interests, while at the same time creating neutral ground that allows for easier government participation. It is also expected that the governance model will help in scaling up to much larger projects, where larger groups of participants, including tenants, need to be involved in decision making. While a pilot housing project does not qualify as a product council in itself, it may turn out to be a stepping stone to e.g. a product council for recycled plastic building materials. The project thus has the potential to demonstrate how to build student housing in a way that is both sustainable and economically viable.

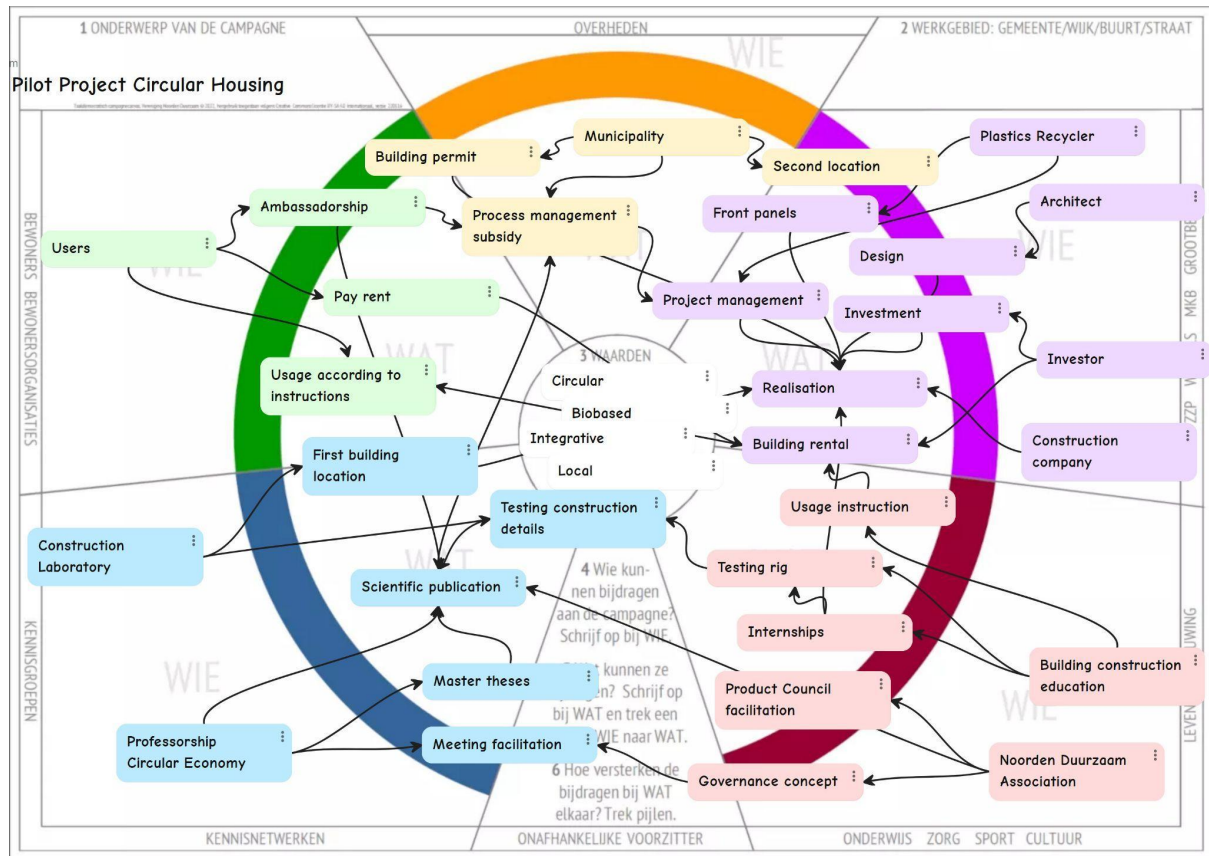


Figure 3 Filled in Campaign canvas

The filled in campaign brainstorm canvas above illustrates the process of finding synergy with a five sector think tank. The canvas is used in a specific order. First, the topic and geographical area are jotted down in the top left and top right corner respectively (the area is omitted in this anonymous example). Then the centre field is filled in with core values. Next, the outer rim is filled in with specific organisations that may contribute to the campaign. Thereafter, suggested contributions are noted in the inner circle and connected with their origin. Lastly, contributions are connected to each other to show synergy. The process is iterative and typically evokes creativity, energy and enthusiasm as more synergy arrows are drawn.

5 Discussion and conclusions

In this paper we have constructed a method to be used by intrinsically motivated initiators wanting to set up a task democratic product council for circular economy. The purpose of such a product council is to drastically speed up circularity transitions for a specific product family in a selected geographical area, and to do so in a way that is easy to copy across echelons in society and across regions. The main ingredients are (i) previous work on the product council concept, including a value-actor matrix and a manifesto template (Faber et al., 2022), and (ii) the task democracy model, including a brainstorm canvas (Noorden Duurzaam, 2021).

Constructing a method required finding middle ground between a low profile small scale pilot project and a high profile large scale democratic experiment. The solution we chose was a stepwise iterative process starting from a single initiator, scaling up through influentials, postponing institutionalisation and instead focusing on a brainstorm process that creates energy and perspective.

The two cases we presented have been used to learn how the process unfolds in practice, how actors operate when crafting campaigns for sustainable development, and what and how values are articulated abstractly and concretely and may be enacted in practice. We have witnessed that the collective process enables a further differentiation of the debate on values, leading to a sense of consensus on these values and how to act upon them.

Neither of the two cases completed the method in our data acquisition time frame. The first case is about window frame standardisation and works directly towards a product council. Here we learned how influential people can successfully invite more influential people. The second case is about recycled plastic building materials and focuses on a technical proof of concept first. From the onset, the think tank had a task democratic composition, which proved to be valuable in creating a synergetic campaign draft.

In both cases, participants were well aware of global sustainability urgencies and strongly motivated to take action locally. The cases share a focus on temporary housing, which is a strong social concern given the influx of migrants in The Netherlands. Equally, participants from all five actor groups expressed their desire to shift their industry towards circularity. In terms of the value-actor matrix, all 15 cells get attention. On the other hand, financial considerations remain dominant, probably resulting in socially and ecologically suboptimal solutions.

Proliferation of the bootstrapping method was prepared but not realised yet. The method is open access available for download, was presented during the NBM 2023 conference and will be submitted for publication on various platforms. A community of practice is planned. Overall, the results are modest but encouraging. We encountered no real roadblocks or strong contraindications of the design of our method. The value-actor matrix kept the method developers and the cases focused on the full scope of the sustainability challenge, excavating all 15 cells. The task democracy model was received with interest. The

bootstrapping method appeared useful as a global guideline. Participants have high expectations. Real impact, on the other hand, is still a mile away. Product Councils may be vehicles for this impact, as long as they systematically involve all required societal sectors in a non competitive setting as described in task democracy theory. Bootstrapping of such an undertaking takes place in small steps to handle risks involved in novel coordination models. Our process method, and instruments applied within various steps, provide the necessary footholds to shape these steps, to create a proof of concept and to build confidence.

As a research group, we intend to stay involved in both cases and report future findings. Our strategy is (i) to diversify into other local product chains and (ii) to scale up a successful case to a national task democratic product council. We recommend research elsewhere in the same track, as well as variations with e.g. different decision making models. Furthermore, we are looking for suitable methodologies for knowledge creation on multiple value-creation.

The bootstrapping method described in this paper is still incomplete and is largely untested. However, given the urgency of sustainable development we chose to share our thoughts and results in an early stage, and invite scholars and initiators to get in touch, to exchange what we know, to collaborate on experiments and to improve transition theory.

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