



**Mondragon  
Unibertsitatea**

Goi Eskola  
Politeknikoa  
Faculty of  
Engineering



**NBM2024**

Donostia - San Sebastián • 3 - 5 July 2024

**SUSTAINABLE BUSINESS MODELS  
FOR THE DIGITAL, GREEN AND  
INCLUSIVE TRANSITION**

Book of abstracts

<https://www.newbusinessmodels.org/>



# **9<sup>th</sup> International Conference on New Business Models NBM2024**

[ BOOK OF ABSTRACTS ]

Editors:  
Dr. Dorleta Ibarra Zuluaga  
Dr. Juan Ignacio Igartua Lopez

## **Mondragon Unibertsitatea**

Faculty of Engineering  
Galarreta Campus  
Hernani, SPAIN  
July 3 – 5, 2024

## COLOPHON

Edited by Dr. Dorleta Ibarra Zuluaga and Dr. Juan Ignacio Igartua Lopez, with support from Obdulia Velez Perez, Jone Arroitauregi Aranburu, and Irantzu Casanellas Altzelai.

Conference Chairs: Dr. Dorleta Ibarra Zuluaga and Dr. Juan Ignacio Igartua Lopez.

We thank the numerous authors and reviewers without whom these proceedings would not have been possible!

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## CITE/REFERENCE AS:

Ibarra, D. and Igartua, J.I. (eds), (2024). Book of Abstracts of the 9th International Conference on New Business Models: Sustainable business models for the digital, green and inclusive transition. Mondragon: Mondragon Unibertsitatea Publishing Service. <https://ebiltegia.mondragon.edu/handle/20.500.11984/6405>

ISBN: 978-84-09-62978-7

DOI: 10.48764/kgk7-va07



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# TABLE OF CONTENTS

<b>WORDS OF WELCOME</b>	<b>8</b>
<b>CONFERENCE THEMES AND TRACKS</b>	<b>9</b>
<b>1. EXPLORING THE SYSTEM LEVEL</b>	<b>10</b>
1.1 Collaborative business models for inclusive transition	10
1.2 Ecosystems in support of sustainability	10
1.3 Business models for transition: empirical observations and theoretical foundations of business models fostering societal transformation and transition	11
1.4 Collaborative and circular business models in the global south	11
<b>2. EXPLORING THE SECTORIAL AND ORGANISATIONAL LEVEL</b>	<b>12</b>
2.1 Innovation and data-driven business models for sustainable transformation	12
2.2 Business model experimentation for circular economy: close, slow, narrow, regenerate	12
2.3 Rural community-led business models	12
<b>3. EXPLORING THE ORGANISATIONAL IMPACT</b>	<b>13</b>
3.1 Sharing economy business models for sustainability: design, functioning and impacts	13
3.2 Management and accountability for sustainable business models	13
3.3 New business models in times of crisis	13
3.4 Assessing and managing the sustainability performance of business models	14
<b>4. EXPLORING THEORETICAL AND METHODOLOGICAL FOUNDATIONS</b>	<b>15</b>
4.1 New theoretical foundations of business models for sustainability	15
4.2 Actor engagement in sustainable (circular) business models & circular ecosystems through design thinking and other practices	15
4.3 BYOT: Bring your own tool	15
<b>CONFERENCE PROGRAMME</b>	<b>16</b>
<b>MONDRAGON DISCUSSION PANEL</b>	<b>17</b>
<b>OPENING KEYNOTES</b>	<b>18</b>
<b>CLOSING PANEL DEBATE</b>	<b>19</b>
<b>CONFERENCE TRACKS AND ABSTRACTS</b>	<b>20</b>
<b>TRACK 1.1</b>	
<b>COLLABORATIVE BUSINESS MODELS FOR INCLUSIVE TRANSITION</b>	<b>23</b>
<b>TRACK 1.2</b>	
<b>ECOSYSTEMS IN SUPPORT OF SUSTAINABILITY</b>	<b>31</b>
<b>TRACK 1.3</b>	
<b>BUSINESS MODELS FOR TRANSITION: EMPIRICAL OBSERVATIONS AND THEORETICAL FOUNDATIONS OF BUSINESS MODELS FOSTERING SOCIETAL TRANSFORMATION AND TRANSITION</b>	<b>46</b>

<b>TRACK 1.4</b>	
<b>COLLABORATIVE AND CIRCULAR BUSINESS MODELS IN THE GLOBAL SOUTH</b>	<b>58</b>
<b>TRACK 2.1</b>	
<b>INNOVATION AND DATA-DRIVEN BUSINESS MODELS FOR SUSTAINABLE TRANSFORMATION</b>	<b>69</b>
<b>TRACK 2.2</b>	
<b>BUSINESS MODEL EXPERIMENTATION FOR CIRCULAR ECONOMY: CLOSE, SLOW, NARROW, REGENERATE</b>	<b>75</b>
<b>TRACK 2.3</b>	
<b>RURAL COMMUNITY-LED BUSINESS MODELS</b>	<b>87</b>
<b>TRACK 3.1</b>	
<b>SHARING ECONOMY BUSINESS MODELS FOR SUSTAINABILITY: DESIGN, FUNCTIONING AND IMPACTS</b>	<b>92</b>
<b>TRACK 3.2</b>	
<b>MANAGEMENT AND ACCOUNTABILITY FOR SUSTAINABLE BUSINESS MODELS</b>	<b>96</b>
<b>TRACK 3.3</b>	
<b>NEW BUSINESS MODELS IN TIMES OF CRISIS</b>	<b>107</b>
<b>TRACK 3.4</b>	
<b>ASSESSING AND MANAGING THE SUSTAINABILITY PERFORMANCE OF BUSINESS MODELS</b>	<b>113</b>
<b>TRACK 4.1</b>	
<b>NEW THEORETICAL FOUNDATIONS OF BUSINESS MODELS FOR SUSTAINABILITY</b>	<b>126</b>
<b>TRACK 4.2</b>	
<b>ACTOR ENGAGEMENT IN SUSTAINABLE (CIRCULAR) BUSINESS MODELS &amp; CIRCULAR ECOSYSTEMS THROUGH DESIGN THINKING AND OTHER PRACTICES</b>	<b>135</b>
<b>TRACK 4.3</b>	
<b>BYOT: BRING YOUR OWN TOOL</b>	<b>145</b>
<b>EPILOGUE</b>	<b>151</b>
<b>CONFERENCE FOUNDER</b>	<b>152</b>
<b>CONFERENCE TEAM @MONDRAGON UNIVERSITY</b>	<b>152</b>
<b>THE BOARD OF THE INTERNATIONAL CONFERENCE SERIES ON NEW BUSINESS MODELS</b>	<b>152</b>
<b>ABOUT MONDRAGON UNIBERTSITATEA</b>	<b>153</b>
<b>ABOUT MONDRAGON</b>	<b>154</b>

## WORDS OF WELCOME

In the intellectual landscape of contemporary academia, the International Conference on New Business Models (NBM) stands as a cutting-edge forum spearheading the discourse on sustainable business models. As we embark on its 9<sup>th</sup> edition, the importance of the NBM conference transcends mere chronological milestones and represents a dedicated pursuit of knowledge and solutions in the field of sustainable business practices. The conference creates an intellectual space where academics, researchers and practitioners converge to address pressing issues and promote pioneering research in the dynamic field of sustainable business models.

The NBM2024 takes place in a socio-economic context characterised by new complexities and uncertainties that make sustainable business modelling even more challenging. Contemporary megatrends such as climate change, natural resource scarcity, demographic and social change, technological and digital revolution are driving global transitions that require radical, profound, and transformative changes supported by different forms of innovation. Sustainable business models play a fundamental role in the triple digital, green, and inclusive transition.

The technological-digital revolution is affecting all industrial sectors, changing goods, services, and processes in public and private organisations. New business models are emerging based on digitalisation, automation and the incorporation of flexible solutions and technologies such as artificial intelligence, connectivity, big data, robotics, and additive manufacturing. Technology-driven business model innovations not only disrupt industries but also our way of life. Integrating values like human dignity, equality, security, and basic rights into business model configurations is crucial.

The climate emergency has led to a growing awareness of the need for a systemic change that is rapid and far-reaching to achieve carbon neutrality by 2050. This goal will not be possible without moving from a “business-as-usual” mindset to sustainable business models. The green transition requires business models that promote circular economy, eco-innovation, and the creation of green jobs.

The digital and green transitions must be inclusive and just, placing people at the centre and leaving no one behind. We must move towards organisations that address within their business models intergenerational challenges, promote diversity in all forms (gender, race, class, etc.), foster (inter-)cooperation, create shared social value, and promote a culture and values that empower people to play a greater role in social transformations.

Successive editions of this conference have established a strong and growing academic community in the field of sustainable business models. We are committed to making NBM2024 a meeting and reflection forum for people seeking to develop sustainable business models that integrate the technological-digital, energy-climate and social transitions through a more holistic vision of sustainability in business. We aim to bring together science, technology, innovation, and society to shape more resilient, green, and inclusive business models for a more equitable, prosperous, and sustainable tomorrow.

We look forward to seeing you at the Faculty of Engineering of Mondragon University for another unforgettable New Business Models Conference!

Dr. Dorleta Ibarra Zuluaga  
*Conference chair*  
*Department of Innovation-Management-Organisation*

Dr. Juan Ignacio Igartua Lopez  
*Conference chair*  
*Department of Innovation-Management-Organisation*

## CONFERENCE THEMES AND TRACKS

The **NBM2024** aims to be a forum for reflection and academic debate in the field of **sustainable business models for the digital, green, and inclusive transition** through **different levels of analysis**: system level, sectorial and organisational level, organisational impact level and theoretical and methodological foundations.

Along with the parallel tracks of academic papers, the program will include plenary talks and debates on how we can better enable impactful business models for sustainability in practice.

### Themes and topics

The 9<sup>th</sup> International Conference on New Business Models will continue to explore relevant themes and topics building on the insights from previous conferences:

- At the **system level**, we invite scholars working on topics such as collaborative business models for inclusive transitions, ecosystem thinking in support of sustainability; empirical observations and theoretical foundations of business models for transitions; and collaborative and circular business models emerging in the global south.
- At the **sectoral and organisational level**, we will address topics on data-driven business models for sustainable transformation, business model experimentation for circular economy; and rural community-ed business models.
- At the **organisational impact level**, topics will deal with the design, functioning and impacts of sharing economy business models; management and accountability for sustainable business models; new business models in times of crisis; and assessing and managing sustainability performance of business models (which includes a special subsection on Business Models & Life Cycle Assessment).
- We will also explore the **theoretical and methodological foundations** of business model research, including new theoretical views business models for sustainability, and the role of design thinking practices during sustainable business model innovation. Additionally, the session, Bring Your Own Tool, provides the opportunity to present practice-based experiences using tools to develop sustainable, circular, and inclusive business models.

Topics in each one of the four themes are presented below.



## **1. EXPLORING THE SYSTEM LEVEL**

### **1.1 Collaborative business models for inclusive transition**

**Track Chairs:**

*Annikka Näyhä, Academy of Finland Research Fellow, Jyväskylä University School of Business and Economics; School of Resource Wisdom, University of Jyväskylä, Finland, Julia Planko, Copernicus Institute of Sustainable Development, Utrecht University, The Netherlands*

The sustainability transition requires the contribution of business organisations and their business models for transforming unsustainable development paths. In addition, the transition calls for collaborative efforts by different societal actors and the alignment of different levels of change. For the sustainability transition, the organisation-centric business models of companies constitute a problem since they can rarely positively influence social or environmental sustainability. Instead, sustainable business models with a broader systemic perspective and contribution to shared value creation can promote the sustainability transition. Various collaborative business models, which are closely linked to or also known as community, cross-ecosystem, and networked models, include the elements of inclusivity, shared value creation and a multi-actor approach. Such models are seen as important approaches to tackling sustainability challenges.

However, in-depth information on the impacts of collaborative business models on systemic level change is often lacking. Overall, better ways of analysing shared value creation processes and their impact on sustainability transition should be developed. Transition studies explore large-scale societal transformation towards sustainability, thus offering more systemic and interdisciplinary approaches to management and organisational studies. Management studies, in turn, when combined with transition perspectives, can illuminate the role of actors and their agency in transition processes.

The goal of this session is to introduce studies that bring together elements from both of these research traditions. This session welcomes studies that combine research on business models and the sustainability transition, explore the role of business models in the inclusive sustainability transition and focus on various collaborative business models and their features and capacities. Bringing together these two perspectives with various methodological and conceptual approaches is a necessity for studying, understanding, and facilitating the inclusive sustainability transition in our society.

### **1.2 Ecosystems in support of sustainability**

**Track Chairs:**

*Abel Diaz Gonzalez, School of Business Economics, Maastricht University (The Netherlands), Nikolay Dentchev, University of National and World Economy (Bulgaria), Bart Leyen, Vrije Universiteit Brussel (Belgium)*

Ecosystem thinking provides insights into how different stakeholders can be aligned, interact, and collaborate to gain competitive advantage, boost innovation, and increase business productivity. This session focuses the discussion on how to develop supportive and sustainable ecosystems for the new business models. We will be interested in studies that are focused on the main mechanisms, processes and elements that lead to the interconnectedness of ecosystem actors and long-lasting partnerships among them. We welcome contributions from different methodological backgrounds are welcome, including literature reviews, theoretical, conceptual, and empirical papers.

### 1.3 Business models for transition: empirical observations and theoretical foundations of business models fostering societal transformation and transition

#### Track Chairs:

*Niels Faber, Research centre Bio-based Economy, Hanze University of Applied Sciences, Groningen; Centre for Sustainable Entrepreneurship in a Circular Economy, Faculty Campus Friesland, University of Groningen, Groningen, Jan Jonker, Institute for Management Research, Radboud University Nijmegen, em.*

In recent times it has become crystal clear that we need to develop innovative and radical solutions to tackle wicked and pressing problems associated with our current, linear economy and the sticky societal arrangements that are formed around it. This track aims to address the contributions that sustainable business models can make in shaping transformation and transitions towards a more sustainable and inclusive society.

Problems to be addressed include among others climate change, resource use, social exclusion, and biodiversity. These problems are linked and should be addressed at various levels of aggregation. Limitation of current society to tackle complex challenges become more and more visible. Efforts to address these issues thus far have only resulted in the creation of waste, pollution, depletion, and extreme forms of social exclusion. A new generation of business models is needed that fosters transition towards sustainable societies.

Since many, if not all, of these problems stem from the way value creation is organised, it calls for a reconceptualization of how the amalgamation of sustainable, circular, inclusive, and restorative business models can bring about radical (system) change.

For NBM2024 San Sebastian, we want to explore how sustainable business models contribute to shaping transitions towards a more just, more inclusive, and sustainable society. We welcome both empirical as well as theoretical/conceptual contributions. Regarding practice, we are interested in contributions that address the question where we may find examples of this in practices and/or policies in which business models are deliberately applied to realise such transition. We are interested to learn what the impact of these business models is. Concerning theoretical/conceptual contributions, we are looking for ways in which the foundations and concepts of business models foster transition. How are the connections between the concepts of transition and value creation operationalised, and to what effect?

Our ambition is to organise two sessions. One on empirical observations and experiences of how business models give shape to societal transition. The second session will focus on exploring theoretical and conceptual foundations of the issue of business models for transition. All those who submit to this track are cordially invited to join both sessions, present their work and partake in the discussions.

### 1.4 Collaborative and circular business models in the global south

#### Track Chairs:

*Timber Haaker (Saxion University of Applied Sciences), Milou Derks (Orange Corners and Eindhoven University of Technology), Nguyen Hong Quan (Institute for Circular Economy Development, Vietnam National University - Ho Chi Minh City), Nguyen Cong Thanh (National Economics University, Hanoi, Vietnam), Simone Sehnem (Universidade do Oeste de Santa Catarina, Brazil), Alvany Maria Dos Santos Santiago (Federal University of Sao Francisco Valley, Petrolina, Brazil).*

Worldwide our societies and economies are in transition towards sustainability and circularity. The transition requires systemic change and new business models that require collaboration and careful interplay between organisations and stakeholders in chains, networks and ecosystems. The form that these collaborative business models take depends on the societal and business context in which they are to be deployed. This track explores what collaborative, inclusive and circular business models are emerging in the Global South, what is driving and hindering such business models, and what the Global North can learn from these models.

## **2. EXPLORING THE SECTORIAL AND ORGANISATIONAL LEVEL**

### **2.1 Innovation and data-driven business models for sustainable transformation**

#### **Track chairs:**

*Maya Hoveskog, Halmstad University (Sweden); Magnus Holmén Halmstad University (Sweden); Lauri Paavola, University of Eastern Finland (Finland); Luís Irgang Dos Santos, Halmstad University (Sweden); Thomas Magnusson, Halmstad University (Sweden)*

This track explores and explains the relation between innovation, data-driven business models and ecosystems with sustainability. This track intends to empirically analyze and conceptualize the emergence and structure of both firms' and ecosystems' value propositions for sustainability. The track focuses on, but is not limited to, the interplay between products and services vs data-driven business models; digitization, digitalization and digital transformation of business models; the development and use of big data and machine learning, the use of generative AI for innovation, data acquisition strategy and new business models; the role of digital platforms for business model innovation; methods for developing data-driven business models and ecosystems.

### **2.2 Business model experimentation for circular economy: close, slow, narrow, regenerate**

#### **Track Chairs:**

*Nancy Bocken, Maastricht University (The Netherlands), Sveinung Jørgensen, NHH Norwegian School of Economics (Norway), Laura Niessen, Maastricht University, Deanna Han, Maastricht University, and Ankita Das, Maastricht University.*

The circular economy is an inspiration to many companies. Yet, established businesses and new ventures alike need significant experimentation to create desirable, feasible, viable, and sustainable business models. While companies have been quite successful at creating business models focused on resource efficiencies and 'narrowing the loop' and closing the loop through recycling, the more challenging business models focused on regeneration, as well as slowing the loop through strategies such as sufficiency, are less commonplace. This track focuses on the cases, practices, and tools of experimentation with new circular business model strategies. Of particular interest are cases that focus on sufficiency or regeneration and examples that moved from experiments to scaling up impact.

### **2.3 Rural community-led business models**

#### **Track Chairs:**

*Sonia Marcos, Universidad de Burgos (Spain); Jaime González-Masip, Universidad Politécnica de Madrid (Spain)*

The development of rural areas is at a critical juncture, facing major challenges such as low GDP per capita, lack of job opportunities, low wages, exodus of young people, rapid ageing of the population, lack of accessibility to essential goods and services (public transport, electricity, digital connectivity, health services or schools, among others) and, consequently, depopulation. This situation calls for new business models to innovate and shape stronger and more resilient rural communities, promoting more inclusive and sustainable rural societies.

Rural community-led business models are a way to engage and involve the different rural actors in the common goal of developing the economy while preserving natural resources, local knowledge, and traditions. The rural community becomes an essential stakeholder in rural entrepreneurship and new business models because it is a social network that provides access to knowledge, funding, and new opportunities.

The track explores how to build more resilient and stronger rural areas from a community-led approach and socio-spatial lens to find the most appropriate business models to address rural challenges. Literature reviews, theoretical, conceptual, empirical, and case studies are welcome, particularly in the field of social innovation in rural community-led business models.

### 3. EXPLORING THE ORGANISATIONAL IMPACT

#### 3.1 Sharing economy business models for sustainability: design, functioning and impacts

**Track Chair:**

Laura Michelini LUMSA University (Italy), Venere Sanna, University of Siena (Italy) & Cecilia Grieco, Sapienza University (Italy)

This track aims to explore the reconfiguration of business models in the sharing economy and how to identify methods and tools for evaluating their impacts, both from the platform and the consumer perspectives.

#### 3.2 Management and accountability for sustainable business models

**Chairs:**

Burcin Hatipoglu, School of Business & IRRG, Canberra, University of New South Wales (UNSW), Australia, Silvia Cantele, Department of Business Administration, University of Verona, Italy, Assunta Di Vaio, Department of Law, University of Naples "Parthenope", Italy

This track explores the future directions for developing managerial capabilities and accountability when innovating business models for digital, green, and inclusive transition. Engagement with sustainability and circularity involves integrating ecological and social aspects into products, processes, and organisational structures. Some avenues to explore in this track are governance and the role of boards, leadership, and managerial responsibilities; employee participation in eco-innovation processes; circular and sustainability KPIs and incentives; formal and informal organisational learning; knowledge management; and creating co-creation opportunities with employees and other stakeholders. Theories that lend themselves to exploring the managerial side of business model innovations include the resource-based view of the firm, dynamic capabilities, capability view of the firm, stakeholder theory, organisational learning, and sustainability transition frameworks. We invite research that applies some of these theories or proposes unexplored theories to examine how the managerial side of an organisation can be developed when organisations innovate their business models.

#### 3.3 New business models in times of crisis

**Chairs:**

Dorleta Ibarra, Mondragon Unibertsitatea (Spain), Juan Ignacio Igartua Mondragon Unibertsitatea (Spain)

We are facing a paradigm shift that manifests itself in multiple crises (global warming, resource depletion, access to energy and water, supply chain shortages, social inequalities, health crises, etc.). Crises stress societies, disrupt value chains and challenge organisations, often accelerating technology diffusion (e.g., digitalisation or renewable energy technologies), leading to the emergence of new, more resilient and sustainable business models. The track explores how to build more resilient business models and assess them, considering the impacts of advanced technologies and integrated and extended value chains. It focuses on the interdependencies between business models within or across value chains, including technological resources, processes and infrastructure requirements and partnerships for more resilient and sustainable business models in the context of multiple crisis. Conceptual and empirical studies (quantitative, qualitative, and mixed) are welcome in particular in the fields of sustainable energy, mobility and smart manufacturing.

### **3.4 Assessing and managing the sustainability performance of business models**

**Track Chairs:**

*Florian Lüdeke-Freund, ESCP Business School Berlin (Germany) & Romana Rauter, University of Graz (Austria)*

**Track chairs Special subsection on Business Models & Life Cycle Assessment:**

*Henrikke Baumann, Chalmers University of Technology (Sweden), Joan Manuel F. Mendoza, Mondragon Unibertsitatea (Spain), Dorleta Ibarra, Mondragon Unibertsitatea (Spain)*

Business models for sustainability aim at contributions to sustainable development and are therefore based on the principle of multiple value creation. They aim not just to improve the performance of organisations but also to have positive ecological and social impacts beyond organisational boundaries. The aim of this track is to better understand whether and how business models can have such effects and how these can be estimated or even measured. Assessing and managing the sustainability performance of business models requires exploring and integrating various topics and concepts (e.g., business model, systems-level approaches) as well as tools and metrics (e.g., from fields such as sustainability reporting and accounting, life cycle assessment). Digitalisation might play an important role in this context too. This track is open to conceptual and empirical papers that integrate the notions of business models and sustainability performance in new and convincing ways.

*Special subsection on Business Models & Life Cycle Assessment:*

For NBM2024 San Sebastian, this track aims to open a new space for debate on a novel and growing approach: applying Life Cycle Assessment methodologies for business model sustainability assessment.



## 4. EXPLORING THEORETICAL AND METHODOLOGICAL FOUNDATIONS

### 4.1 New theoretical foundations of business models for sustainability

**Chairs:**

*Florian Lüdeke-Freund, ESCP Business School Berlin & Tobias Froese, ESCP Business School Berlin*

This track explores the status quo and future directions of theories on business models for sustainability. Building on and going beyond prominent approaches such as activity-based, component-based, value-based, functional, design, and other theoretical views on business models for sustainability, we are looking for research that further develops the conceptual and theoretical foundations for a better understanding of the inner workings and sustainability implications of business models for sustainability. New theoretical views that lend themselves to this endeavour include, for example, theories of social practice, Alexandrian pattern theory, or social mechanism theory. We invite research papers that make use of new and fresh theoretical lenses.

### 4.2 Actor engagement in sustainable (circular) business models & circular ecosystems through design thinking and other practices

**Track Chairs:**

*Fatima Khitous, Oulu University (Finland), Francesca Ostuzzi, Ghent University (Belgium), Katrien Verleye, Ghent University, (Belgium)*

This track aims to provide insight into engaging a multitude of actors – such as companies, customers, and governmental bodies – in the conceptualization, development, launch, and adoption of circular business models and circular ecosystems so that circular value is cocreated. Specific attention is dedicated to the role of design thinking practices during sustainable business model innovation, but research on other practices and tools – such as experience and engagement management – is also embraced. This track welcomes scholars from different disciplines and it is open to conceptual, qualitative, and quantitative work.

### 4.3 BYOT: Bring your own tool

**Track Chairs:**

*Moniek Kamm and Timber Haaker (Saxion UAS, The Netherlands), Jan Jonker (Radboud University, The Netherlands)*

This track focuses on the vast expanding development of tools for incorporating sustainability and circularity in Business Models.

The transition to business models that contribute to a sustainable, circular, and inclusive society is a systemic challenge for new and existing organisations. Developing and implementing multiple value-creating concepts and integrating them in every aspect of organisations in accordance with the business environment they operate in is demanding. Efforts to establish sustainable and circular business models are supported by a wide variety of grants schemes, courses, workshops, etc., and a growing variety of tools. This track addresses the contribution of tools to sustainable and circular business models and the development of such tools.

We are especially interested in practice-based experience with the use of tools for the development of sustainable, circular, and inclusive business models and tools that result from co-creation between researchers and practitioners.

For general questions related to NBM@SanSebastian2024 you can direct your questions to nbm2024.mgep@mondragon.edu or to Dorleta Ibarra (dibarra@mondragon.edu).

For questions related to the tracks (content, topic fit, submissions), please reach out directly to the track chairs. Corresponding track chairs are indicated as first authors on each track.

## CONFERENCE PROGRAMME

[www.newbusinessmodels.org](http://www.newbusinessmodels.org)

Conference venue:  
School of Business and Economics - Maastricht University |  
Jauregi Bailara, s/n, 20120 Hernani, Gipuzkoa, Spain  
Galarreta - Parke Teknologikoa (Jauregi Bailara, s/n, 20120 Hernani, Gipuzkoa)

Wednesday 3 July - Pre conference day		Thursday 4 July		Friday 5 July	
8:30 - 9:00	Doctoral Colloquium (Only for accepted doctoral students)	8:30 - 9:00	Registration	8:30 - 9:00	Registration
9:00 - 10:30		9:00 - 10:30	Opening Plenary	9:00 - 10:30	Parallel Sessions (Tracks)
10:30 - 11:00		10:30 - 11:00	Break	10:30 - 11:00	Break
11:00 - 13:00		11:00 - 12:30	Parallel Sessions (Tracks)	11:00 - 12:30	Parallel Sessions (Tracks)
13:00 - 14:00	Lunch for Doctoral Students	12:30 - 14:00	Lunch	12:30 - 14:00	Lunch
15:30 - 16:00	Registration (Conference Venue)	14:00 - 15:30	Parallel Sessions (Tracks)	14:00 - 15:30	Closing Plenary
16:00 - 17:00	MONDRAGON Discussion panel (Conference Venue)	15:30 - 16:00	Break		
17:30 - 18:30	Guided visit to Chillidaleku and Welcome drink for registered people (Jauregi Bailara, 66, 20120 Hernani, Gipuzkoa)	16:00 - 17:30	Parallel Sessions (Tracks)		

**Conference dinner**  
Muka Restaurant  
(Zurriola Hiribidea, 1,  
20002 Donostia, Gipuzkoa)  
(An additional ticket is needed  
for this dinner)  
(18:15 - 21:30)

A detailed version of the conference program (session tracks and distribution of presentation of authors) will be available in ConfTool to all conference participants.

## MONDRAGON DISCUSSION PANEL

### “MONDRAGON addressing the transition challenges”

#### PANELLISTS



**Leire Mugerza**

President of the MONDRAGON congress and MONDRAGON standing committee



**Ibon Antero**

Coordinator of sustainability and social transformation in MONDRAGON



**Monica Vaz**

Former president of FAGOR ELECTRONICA a cooperative part of MONDRAGON

#### PANEL FACILITATOR



**Fred Freundlich**

Research Associate - Institute for Cooperative Research (LANKI)  
Mondragon University

## OPENING Keynotes

**“Driving sustainability transitions through purpose-driven businesses and purpose ecosystems”**



**Wendy Stubbs**

Associate Professor in the School of Social Sciences  
at Monash University in Melbourne, Australia

**“When business meets the Doughnut”**



**Carlota Sanz**

Co-founder of the Doughnut Economics Action Lab (DEAL)

## CLOSING Panel debate

### “Driving sustainability transitions through purpose-driven businesses and purpose ecosystems”

#### PANELLISTS



**Sabine Frerichs**

Scientific Director of the International Institute for the Sociology of Law (IISL), Oñati



**Laura Marron**

General Manager - Basque Centre for Artificial Intelligence (BAIC)



**Alessio Bulckaen**

Natural Capital Accounting integration within ARIES, Basque Center for Climate Change (BC3)



## CONFERENCE TRACKS AND ABSTRACTS

### Theme 1. Exploring the system level

- **Track 1.1 Collaborative business models for inclusive transition**

**Track Chairs:** Annukka Näyhä, Academy of Finland Research Fellow, Jyväskylä University School of Business and Economics; School of Resource Wisdom, University of Jyväskylä, Finland, Julia Planko, Copernicus Institute of Sustainable Development, Utrecht University, The Netherlands

- **Track 1.2 Ecosystems in support of sustainability**

**Track Chairs:** Abel Diaz Gonzalez, School of Business Economics, Maastricht University (The Netherlands), Nikolay Dentchev, University of National and World Economy (Bulgaria), Bart Leyen, Vrije Universiteit Brussel (Belgium)

- **Track 1.3 Business models for transition: empirical observations and theoretical foundations of business models fostering societal transformation and transition**

**Track Chairs:** Niels Faber, Research centre Bio-based Economy, Hanze University of Applied Sciences, Groningen; Centre for Sustainable Entrepreneurship in a Circular Economy, Faculty Campus Friesland, University of Groningen, Groningen, Jan Jonker, Institute for Management Research, Radboud University Nijmegen, em.

- **Track 1.4 Collaborative and circular business models in the global south**

**Track Chairs:** Timber Haaker (Saxion University of Applied Sciences), Milou Derks (Orange Corners and Eindhoven University of Technology), Nguyen Hong Quan (Institute for Circular Economy Development, Vietnam National University - Ho Chi Minh City), Nguyen Cong Thanh (National Economics University, Hanoi, Vietnam), Simone Sehnem (Universidade do Oeste de Santa Catarina, Brazil), Alvany Maria Dos Santos Santiago (Federal University of Sao Francisco Valley, Petrolina, Brazil).

### Theme 2. Exploring the sectorial and organisational level

- **Track 2.1 Innovation and data-driven business models for sustainable transformation**

**Track Chairs:** Maya Hoveskog, Halmstad University (Sweden); Magnus Holmén Halmstad University (Sweden); Lauri Paavola, University of Eastern Finland (Finland); Luís Irgang Dos Santos, Halmstad University (Sweden); Thomas Magnusson, Halmstad University (Sweden)

- **Track 2.2 Business model experimentation for circular economy: close, slow, narrow, regenerate**

**Track Chairs:** Nancy Bocken, Maastricht University (The Netherlands), Sveinung Jørgensen, NHH Norwegian School of Economics (Norway), Laura Niessen, Maastricht University, Deanna Han, Maastricht University, and Ankita Das, Maastricht University.

- **Track 2.3 Rural community-led business models**

**Track Chairs:** Sonia Marcos, Universidad de Burgos (Spain); Jaime González-Masip, Universidad Politécnica de Madrid (Spain)

### Theme 3. Exploring the organisational impact

- **Track 3.1 Sharing economy business models for sustainability: design, functioning and impacts**

**Track Chairs:** Laura Michelini LUMSA University (Italy), Venere Sanna, University of Siena (Italy) & Cecilia Grieco, Sapienza University (Italy)

- **Track 3.2 Management and accountability for sustainable business models**

**Chairs:** Burcin Hatipoglu, School of Business & IRRG, Canberra, University of New South Wales (UNSW), Australia, Silvia Cantele, Department of Business Administration, University of Verona, Italy, Assunta Di Vaio, Department of Law, University of Naples "Parthenope", Italy

- **Track 3.3 New business models in times of crisis**

**Chairs:** Dorleta Ibarra, Mondragon Unibertsitatea (Spain), Juan Ignacio Igartua Mondragon Unibertsitatea (Spain)

- **Track 3.4 Assessing and managing the sustainability performance of business models**

**Track Chairs:** Florian Lüdeke-Freund, ESCP Business School Berlin (Germany) & Romana Rauter, University of Graz (Austria)

**Track chairs Special subsection on Business Models & Life Cycle Assessment:** Henrikke Baumann, Chalmers University of Technology (Sweden), Joan Manuel F. Mendoza, Mondragon Unibertsitatea (Spain), Dorleta Ibarra, Mondragon Unibertsitatea (Spain)

### Theme 4. Exploring theoretical and methodological foundations

- **Track 4.1 New theoretical foundations of business models for sustainability**

**Chairs:** Florian Lüdeke-Freund, ESCP Business School Berlin & Tobias Froese, ESCP Business School Berlin

- **Track 4.2 Actor engagement in sustainable (circular) business models & circular ecosystems through design thinking and other practices**

**Track Chairs:** Fatima Khitous, Oulu University (Finland), Francesca Ostuzzi, Ghent University (Belgium), Katrien Verleye, Ghent University, (Belgium)

- **Track 4.3 BYOT: Bring your own tool**

**Track Chairs:** Moniek Kamm and Timber Haaker (Saxion UAS, The Netherlands), Jan Jonker (Radboud University, The Netherlands)



# SUSTAINABLE BUSINESS MODELS FOR THE DIGITAL, GREEN AND INCLUSIVE TRANSITION



## THEME 1. EXPLORING THE SYSTEM LEVEL



## Track 1.1

### Collaborative business models for inclusive transition

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#### **Agri-food Value Network Around the Finnish Incumbent: Sustainable Cross-actoral Value?**

Berg, Inka;  
Näyhä, Annukka  
The University of Jyväskylä, Finland  
inmakarj@jyu.fi

The key role of businesses in the sustainability transition has been widely acknowledged and various scholars emphasize the interlinks between sustainable business models and system-level sustainability. However, the current discussion on sustainable business models lacks in-depth considerations of collaborations and partnerships, and particularly of the co-creation of value in these collaborations (Pedersen et al., 2021). Moreover, it remains unclear how value is co-created in collaborations between actors that hold different amounts and types of power. The aim of this study is to explore how value is co-created between a Finnish agrifood incumbent and its stakeholders, as well as how power affects these relations. This study follows a single case study research strategy and primary data is gathered through semi-structured interviews, that will be held with five managers from the case company – an incumbent operating in the Finnish agrifood chain – and ten of its stakeholders during Spring and Summer 2024. The tentative findings of this study suggest that the case company and its stakeholders do have some shared sustainability goals and that all parties perceive collaboration to be crucial in achieving them as well as system-level sustainability. However, the case company holds a strong position in the food chain and has more power to advance its own purpose and interests than its stakeholders do. Focusing on power relations in these collaborations, and their effects on value co-creation, provides an opportunity to reveal pivotal obstacles to the sustainability transition.

## **Track 1.1**

### **Collaborative business models for inclusive transition**

#### **Cascade Circular Business Models in the Textile and Clothing Industry: Understanding Facilitators and Barriers through a Systematic Literature Review**

Dehghannejad, Mohammadreza (1);  
Pal, Rudrajeet (1,2);  
Dissanayake, Kanchana (1)  
1: Swedish School of Textiles, University of Borås, Sweden;  
2: University of Gävle, Sweden  
mohammadreza.dehghannejad@hb.se

To achieve the ultimate potential of the circular economy (CE), it is necessary to operationalize a cascaded system where R-imperative business models such as repair, reuse, and recycling are implemented before the materials/products end up in energy recovery. Despite frequent discussions of the cascade, mainly in the case of biological nutrients, there is a dearth of literature on understanding cascading for technical material/product cycles. Given the resource-intensive and polluting nature of textiles and clothing (T&C) industry, thus cascading can play an important role. This study, through a systematic literature review, attempts to understand the facilitators and barriers to cascade circular business models in the T&C industry. Results indicate different closed loops cascading between the downstream actors of the value chain where brands and service providers are involved. Likewise, between manufacturers and recyclers engaged in downcycling activities. The cascades have also been seen in open loops, in the inter-industrial forms, such as the production of composite materials and building insulation from textile waste and non-woven textiles. In particular, the non-participation of the brand owner in the valuation of used clothes, lack of markets and recyclers in the care of textile waste, and effective recycling policies to ensure high quality in recycling are among the most important cascade barriers while structured provision of information, government financial support, and deliberate actions by the economic policymakers can facilitate cascading. This study provides a basis for further collaboration between T&C value chain actors in capturing undiscovered implicit and explicit values in the transition to CE.



## Track 1.1

### Collaborative business models for inclusive transition

#### The Uninclusive Transition to Heating Networks in French Rural Areas

Fontenaille, Théodore (1,2);

Beulque, Rémi (2);

Stabat, Pascal (1);

Fabre, Antoine (1)

1: Centre Energy, Environment, Processes, Mines Paris – PSL University, 75006, Paris, France;

2: CGS-i3, UMR 9217, Mines Paris - PSL, 75006, Paris, France

theodore.fontenaille@minesparis.psl.eu

To enable a sustainable transition in the energy sector, heating networks are an interesting way of pooling consumption to cut costs while using local renewable resources. Compared with traditional individual heating systems based on fossil fuels, these systems require more collaborative business models involving more players. These networks, which are widely installed in large cities, struggle to be developed in rural areas. To better understand whether this difference is the trademark of an uninclusive transition, this study suggests observing the instruments of public policy acting on the business models of these projects.

To do so, qualitative research was conducted involving several interviews among French heating network stakeholders. The information obtained is cross-checked with secondary data sources.

National public policy instruments relating to heating networks are reviewed. The business model framework is used to determine the impact that each of these instruments has on the development of district heating networks in rural areas. The aim is then to identify whether these instruments are biased in such a way as to exclude rural areas, whether unfairly or not.

This study provides a better understanding of the collaborative dimension of heat network models in rural areas and the obstacles to their development. The results highlight the implicit effects of certain instruments in excluding rural areas from an inclusive transition.

## **Track 1.1**

### **Collaborative business models for inclusive transition**

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#### **The More you Look, The Less you See: A Review on The Paradox of Power Dynamics in Food System Transition**

Igbeghe, Christian Barika;

Siltaoja, Marjo;

Näyhä, Annukka

Jyväskylä University School of Business and Economics, University of Jyväskylä, Finland

christian.b.igbeghe@jyu.fi

This study explores the emerging concept of power dynamics and its role in shaping social and business interactions within the discourse of sustainability transition for businesses. Specifically, we examine how power relations are conceptualized in both business management and transition studies, focusing on the impact on the transition capabilities of business models. To unpack and spotlight nuances from existing sources, we systematically reviewed 73 scholarly articles from Web of Science and Wiley databases covering the period from 2000 to 2024.

Sustainable business models are characterized by a three-fold priority, which includes social responsibility, resource efficiency, and long-term viability in the interest of the overall sustainability goal. Power dynamics play a vital role in shaping business models, particularly in the context of collaborative or collective action, as it determines whose interests is prioritized in the creation of shared values. Preliminary findings reveal that power dynamics is a crucial mechanism in the political economy of contemporary businesses as it significantly influences stakeholder interactions, decision-making processes, resource allocation, as well as costs and benefits. It can also be leveraged in value chain relations to influence standards. Thus, understanding the role of power dynamics is essential for an inclusive and effective business model that addresses the concerns of just transition.

## Track 1.1

### Collaborative business models for inclusive transition

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#### **Circular Economy, People, and Ecology: A Case for Just Transition, Inclusive and Regenerative Business Models**

Klomp, Kees;  
Otieno Ong'ayo, Antony;  
van Stam, Gertjan  
Windesheim University of Applied Sciences, Netherlands, The  
g.van.stam@windesheim.nl

This work delves into the ongoing economic transformations in the era of heightened globalization. The prevailing linear economic paradigm, characterized by values of separation, domination, and extraction, has steered global growth but raises critical concerns about sustainability and the intersection between human activity and ecology. In contrast, the circular economic paradigm, drawing inspiration from indigenous knowledge, emphasizes values such as togetherness, conversation, and harmony, offering an alternative perspective.

Our work explores a paradigm shift from an anthropocentric “I-paradigm” to a symbiogenic “We-paradigm,” urging the development of new business models grounded in principles of just transition, regeneration, and inclusivity. It advocates for “existential economics,” driven by a purpose-driven outlook, intrinsic motivation, and transformative engagement, crucial for navigating the ongoing poly-crisis. The argument underscores the importance of understanding inclusive business models rooted in local contexts.

Drawing from experiences in extended case research in Europe and Africa, the paper highlights how paradigm-sensitive pracademic deliberations challenge established norms across natural and social sciences. The shared embodied knowledge aims to contribute to a nuanced continuum, promoting inclusion and celebrating diversity in economic theory development, meaning-making, and knowledge dissemination.

## **Track 1.1**

### **Collaborative business models for inclusive transition**

#### **In Pursuit of the Social Dimension: Circular Justice in Business Models**

Lit, Fernando C. (1,2);

Paredis, Erik (2);

Huijben, Josephina C.C.M. (1);

Cloodt, Myriam M.A.H. (3,1)

1: Eindhoven University of Technology, The Netherlands;

2: Ghent University, Belgium;

3: Open Universiteit, The Netherlands

f.c.lit@tue.nl

The Circular Economy (CE) has gained worldwide prominence for its potential to combine economic prosperity and sustainability. However, current conceptualizations of the CE remain techno-centric and eco-modernist, focusing largely on technological innovations and benefits to the environment. Scholars argue that shifting to a CE will also transform social relationships and institutions. Thus, they call for a deeper consideration of the social dimension of a CE transition. Without it, we risk perpetuating or even exacerbating injustices present in linear economies. In line with this, Kirchherr (2021) proposed the concept of Circular Justice, which encapsulates recognitional, procedural, and distributive justice as applied to a CE transition: who is impacted by the transition, are they included in decision-making, and are the costs and benefits of the transition equitably distributed?

We will explore how circular justice can be embedded into Circular Business Models (CBMs), a class of sustainable business models focused on closing, slowing, narrowing, and regenerating material loops, which also serve as a vehicle through which the CE could be mainstreamed. Through a systematic literature review and careful examination of illustrative cases, we will examine if, and how, businesses are able to move beyond vague notions of 'social benefits' to a multidimensional consideration of justice that encompasses equity, power distribution, and inclusive decision-making, thereby contributing to a more inclusive socio-ecological transformation. Through this work, we aim to provide academia, practitioners and policymakers with a nuanced understanding of how to embed justice in CBMs, guiding the transition towards a more socially-oriented, equitable direction.

## Track 1.1

### Collaborative business models for inclusive transition

#### Stakeholders as Recipients and Co-creators of Justice in Collaborative Business Models for Just Transition - Stakeholders' Justice Perceptions on the Food System Transition

Paloviita, Ari;  
Kortetmäki, Teea  
University of Jyväskylä, Finland  
ari.paloviita@jyu.fi

Stakeholder involvement is the key in the development of collaborative business models for just and inclusive low-carbon transition. Heading towards just transition and ethical value creation requires embedding stakeholders' perceptions of value and justness in business models. In this paper we bring up how stakeholders of CBMs can be both recipients and co-creators of justice in just transition. First, as recipients of justice, relevant stakeholders can include vulnerable groups, the least powerful actors in the value chain or other actors in disadvantaged positions. Second, stakeholders can be seen as co-creators of justice where they can adopt roles such as distribution balancers, capacity builders, claim-makers, and awareness raisers. These stakeholders can make decisions with broader impacts and ethical implications, they have power to allocate resources in the value network or they can contribute to fairness in other ways. This short paper fuses literature on just transition and stakeholder engagement in business models and provides empirical insights into stakeholders' justice perceptions on food system transition in Finland. We draw on the conceptualization of distributive, procedural and recognition justice, and capacity building as four relevant interrelated and irreducible dimensions relevant for just transition. The paper contributes to just transition and collaborative business model development by highlighting the twin role of stakeholders as recipients and co-creators of distributive, procedural and recognition justice, and capacity building. The authors hope that this study will facilitate ethical value creation in CBMs by offering additional clarity in terms of what justice is created with and for whom.

## **Track 1.1**

### **Collaborative business models for inclusive transition**

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#### **Co-creating Circular Propositions in Complex Value Chains: Advantages and Drawbacks**

van Dam, Sonja Sarah  
TUDelft, Netherlands, The  
s.s.vandam@tudelft.nl

This paper analyses the benefits and drawbacks of utilizing co-creation in complex value chains to develop new value propositions. In developing circular business models within complex value chains, collaboration with relevant stakeholders is essential. The paper revolves around a case study conducted within the automotive remanufacturing industry where a new reverse logistics platform and accompanying services were being developed to drastically simplify the reverse logistics of used car parts. Because the reverse logistics service provider was struggling to garner interest for the platform, co-creation was utilized to engage with stakeholders and inspire the development process.

Over a two-year period, four co-creation sessions and eight interviews were conducted with stakeholders involved in remanufacturing efforts. Following the project's conclusion, a reflective analysis of the co-creation process was conducted in collaboration with the reverse logistics service provider. The paper presents five benefits and five drawbacks of applying co-creation in complex value chains. Benefits include the cultivation of trustful relationships and empathy for stakeholders' challenges and needs. Conversely, drawbacks encompass difficulties in demonstrating the added value of co-creation to stakeholders upfront, complexities stemming from stakeholders' lack of physical proximity, as well as challenges in collaborative idea generation due to conflicting interests, financial dependencies, and buyer-supplier dynamics. By shedding light on the practical implications and outcomes of co-creation, the paper offers valuable insights for value chains considering co-creation. It underscores the importance of stakeholder engagement and collaborative development processes, while emphasizing crucial considerations in setting up co-creation initiatives for new value propositions.

## Track 1.2

### Ecosystems in support of sustainability

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#### **Eco-friendly or Funding-friendly? How Does Sustainability Orientation Affect the Success of Crowdfunding Campaigns?**

Chistov, Valery;  
Peña-Legazkue, Iñaki  
Deusto Business School, Spain  
vchistov@deusto.es

This study explores the influence of environmental orientation on the success of crowdfunding campaigns on the Kickstarter platform. We approach this issue from three levels of analysis: micro (firm), meso, and macro levels. The research examines the interplay between environmental orientation and factors such as platform endorsement, project category, and geographical context with the likelihood of the project being successfully funded. We employ regression analysis to test our hypotheses and models. Our sample includes 153,281 projects registered on the Kickstarter platform from 2009 to 2018. The results indicate that environmental orientation is not a standalone predictor of the success of crowdfunding projects but interacts with other variables to influence campaign outcomes variably. The findings contribute to the discourse on sustainable entrepreneurship by highlighting the strategic importance of context in communicating environmental values in crowdfunding. Implications for academics include a deeper understanding of sustainability in entrepreneurial finance, while professionals are provided with insights into effective campaign strategies. Policymakers are offered evidence to guide the development of supportive measures for environmentally oriented ventures.



## **Track 1.2**

### **Ecosystems in support of sustainability**

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#### **Evolution of Exchange and Sharing Mechanism towards Collaborative Ecosystem**

Cui, Can;  
Evans, Steve  
University of Cambridge, United Kingdom  
cc2121@cam.ac.uk

In the ecosystem era, collective efforts have become increasingly important and industrial companies are working together to drive sustainable practices. It points to the importance of ease of exchange and sharing to facilitate the development of a collaborative ecosystem. Despite various challenges such as lack of trust and security concern, industrial companies have realized the huge potential of collaborative ecosystems to help break “zero sum game” to open up new opportunities. Though sustainability is usually not prioritized in a collaborative ecosystem context, our data shows that industry practitioners have fully been aware of the huge potential ecosystem has in creating additional sustainable value through interactions and exchanges. Nevertheless, critical concerns about the various challenges are preventing industrial companies from promoting new value flows in collaborative ecosystems by initiating more sharing and exchange activities.

Our study aims to help industry practitioners better understand the evolution of exchange and sharing mechanism and thus help them better resolve the challenges. The value flow traditionally relates to monetary value exchange to obtain usefulness of something. Recently, there has been more new value flows through solutions sharing, resource sharing and exchange and so forth for industrial companies to acquire usefulness of something from external. In today's or future's ecosystem era, orchestration happens to govern the “one-to-many” or “many-to-many” sharing and exchange. Our research aims to help industry practitioners better understand sharing and exchange mechanism thus help them better identify and capture value opportunities.

## Track 1.2

### Ecosystems in support of sustainability

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#### Orchestrating Circular Economy Ecosystem Emergence: a Case Study of Circular Textiles and Apparel

DiVito, Lori (1);

van Wijk, Jakomijn (1,2);

van Hille, Iteke (1);

Ingen-Housz, Zita (1)

1: Amsterdam School of International Business, Amsterdam University of Applied Sciences;

2: Maastricht School of Management, Maastricht University

z.m.p.ingen-housz@hva.nl

We conducted an in-depth, inductive study of an emerging circular economy ecosystem in the textiles and apparel industry. By zooming out on industry level, we uncovered drivers of circular economy ecosystem emergence and found that that CE ecosystem emergence is a confluence of intersections of ecosystems – business, entrepreneurial, innovation and knowledge – and is a result of emergent and deliberate orchestration. By zooming in to specific actors, we revealed the interactions of heterogenous actors across ecosystems that are cognitively and geographically distant, giving rise to tensions, such as temporal orientation or power relations, that orchestrators need to navigate. We developed a model of embedded agency of circular economy ecosystem emergence and make novel contributions to the literature on ecosystem emergence, orchestration and circular economy.

## **Track 1.2**

### **Ecosystems in support of sustainability**

#### **Partnerships For Social Innovation : An Ecosystem Toward Sustainability? Lessons From 3 cases Studies In France**

Douyon, Rosalie (1);  
Gilormini, Patrick (2);  
Vernier, Marie-France (3);  
Vincent, Pascale (4)

1: UCLy (Lyon Catholic University), UR CONFLUENCE : Sciences et Humanités (EA 1598), Lyon, France;  
2: UCLy (Lyon Catholic University), UR CONFLUENCE : Sciences et Humanités (EA 1598), Lyon, France;  
3: UCLy (Lyon Catholic University), UR CONFLUENCE : Sciences et Humanités (EA 1598), Lyon, France;  
4: Ciedel – Centre International d'Etudes pour le Développement Local – UCLY (Lyon Catholic University)  
mfvernier@univ-catholyon.fr

Social innovations constitute networks based on social values and the collaboration between partners. However, there are obstacles and duration over time is a real challenge. Our research question is therefore: to what extent, social innovations to be successful and sustainable overtime, should be based on ecosystems?

Social innovation is motivated by a desire to meet a social need and/or a social aspiration (Besançon and Guyon, 2013). The territory is seen as a dynamic construction resulting from interaction between the various stakeholders in a territory (Colletis & Rychen, 2004). Partnership is a cooperative method of action based on the free, mutual and contractual commitment of different but equal players. They form a collective actor with a view to changing the terms and conditions of action, to act together within this framework (Dhume, 2001).

For this research, we used the cooperative action research (CAR) method. The CAR was carried out in two stages. Firstly, group interviews followed by semi-structured interviews. Qualitative data was collected from three businesses around a specific social need: the integration of disadvantaged youth, inclusion of elderly individuals in the city, and promoting healthier and more sustainable nutrition.

The analysis of the three innovation cases shows that ecosystems are key supports for social innovation. The territory, the partners and their relationship contribute over time to the success or the failure of social innovation. Partners (businesses, associations, local authorities, individuals) act together and influence the lives of individuals. The network is created around a common need that nurtures the network.

## Track 1.2

### Ecosystems in support of sustainability

#### Managing Innovation Ecosystems For Net-Zero Targets

Dziubaniuk, Olga  
Tampere University, Finland  
olga.dziubaniuk@tuni.fi

Innovations play the key role in address sustainability issues such as tackling challenges of anthropogenic emissions in persuasion of net-zero targets. Joint effort of the ecosystem actors aimed to create value of the innovations may require their mutual adaptation of resources and activities, and involvement of societal and institutional actors that contribute to the innovation development and its economic potential. Thus, actors become involved in the innovation ecosystems that embrace their collaboration following customer-oriented goals, a focal innovation, its development, and commercialization. Carbon capture and utilization (CCU) innovations are developed in response to the net-zero targets to decarbonize industrial processes and environmental regulations change. These innovations allow to capture, store and transform carbon dioxide emission into gases or chemicals used in other the industrial processes that is resembling circular economy closing loop process. However, due to an emerging stage of CCU as a business process, related business models and value chains remain in development which makes it difficult to estimate economic value and needed investment for CCU. This empirical study explores how managerial interaction in innovation ecosystems can support novel business models and value chains development aimed at net-zero targets. This study contributes to management literature by exploring challenges and activities of managing innovation ecosystems in the context of Finnish emerging market of carbon capturing. Additionally, this research maps the CCU value chain and ecosystem and discusses how business models of carbon circulation can contribute to sustainability besides mining economic value.

## **Track 1.2**

### **Ecosystems in support of sustainability**

#### **Ecosystem Orchestrators as Intermediaries for Circular Economy Transition A Case Study in the Biomass and Agri-food Sector in the Netherlands**

Iñigo, Edurne Angosto (1);

Blok, Vincent (2);

Ritala, Paavo (3)

1: Deusto Business School, Spain;

2: Wageningen University, The Netherlands;

3: Lappeenranta School of Business and Management, Finland

edurneinigo@deusto.es

This study investigates the role of ecosystem orchestrators in facilitating the circular economy transition within the biomass and food sector in the Netherlands. This research addresses the gap in understanding how open-system orchestration contributes to the circular economy, emphasizing the need for collaborative efforts among diverse stakeholders. Overcoming barriers to the circular economy, including coordination of economic, material, and knowledge flows, requires loosely orchestrated collaboration among the different system actors. The study draws on a single case study methodology of the circular economy transition in the Netherlands in the biomass and food sector, the research employs an inductive-deductive approach to explore this case, which is of interest due to the Dutch government's commitment to complete circularity by 2050 prioritizes sectors such as biomass and food.

Through 34 semi-structured interviews with various ecosystem actors, including investors, knowledge generators, governments, NGOs, and more, the preliminary results of the study show how orchestrating the transition to a circular economy involves overcoming challenges to align diverse stakeholder priorities. The study reveals the heterogeneous nature of orchestration, with a spectrum from closed- to open-system approaches. These findings contribute valuable insights into navigating complexities and advancing the circular economy transition, emphasizing the need for balanced, collaborative approaches to foster sustainable practices in diverse ecosystems.

## Track 1.2

### Ecosystems in support of sustainability

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#### Business Models as Ecosystems' Activity Modules

Mozheiko, Sergei (1,2)

1: Roskilde University, Denmark;

2: University of Chinese Academy of Sciences, China

sergeimo@ruc.dk

The conceptualization of two concepts – business models and ecosystems – has been developing independently from one another, while sharing several common attributes. Both have been conceptualized as systems of interdependent activities, both revolve around a particular focal value proposition, and both emphasize the requisite alignment for successful value creation and resilience. Despite evident shared features, there have been no attempts to integrate the two constructs as conceptually common phenomena on two distinct levels. This paper argues that business models can be seen as activity modules that comprise business ecosystems. In other words, ecosystems are not comprised of firms which are often viewed as bundles of property rights, knowledge structures, or customer portfolios. Rather we should look at ecosystems as comprised of business models of participating firms, as both concepts have value activities as their basis.

This work draws from complexity and modularity theory and develops a framework to argue that a distinct business model is an activity module of an ecosystem, which in turn is a hybrid form between markets and hierarchies that enables greater capacity for simultaneous complementarities and coordination. Modularity as an enabler of mix-and-match configuration and an approach to mitigate complexity, allows for greater economies of specialization, while concurrently coordinating cocreation by means of standardized interfaces. This paper argues that holding other factors constant, technology as the enabler of new means for standardization will prompt further disintegration of industries and ecosystems into more fine-grained activity modules, and enable to embed sustainable values at the core of cocreation.

## **Track 1.2**

### **Ecosystems in support of sustainability**

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#### **Can Disruptive Business Models Effectuate Change In Business Ecosystems?**

Pinkse, Jonatan (2);

Peters, Suzanne (1);

Winch, Graham (1)

1: Alliance Manchester Business School, University of Manchester;

2: King's Business School, King's College London

suzanne.peters@manchester.ac.uk

Complementarities between business models in an ecosystem is key to co-creating value and ensuring a healthy environment for key actors to interact. In systems where a firm seeks to bring forward disruptive innovation, its implementation can create friction points between their business model and the existing ecosystem. For some, these points of friction can become points of failure resulting in impasses that impede adoption of their innovation. In research on firms seeking to disrupt the UK housing construction sector to deliver more sustainable homes at scale through leveraging offsite manufacturing, we found the firms did not synchronise with the existing ecosystem at critical junctures and this hindered their progress. There were key interactions between the firms and ecosystem that required either the new firms to flex to the existing systems and actors or vice versa, but neither happened in time to prevent the failures of the disruptive players. The new firms appeared to hold the key to unlocking significant challenges in the delivery of new homes but underestimated the complexity and inertia in the existing ecosystem. The lack of a sufficient strategy to address friction points and better synchronise with the market environment proved fatal, despite an offering that seemed poised to address significant challenges of stagnant productivity growth in the sector, critically short supply of skilled labour, and a pressing need to improve the sustainability of new homes construction. In the face of massive unmet demand for new homes, their success seemed inevitable but proved unreachable.



## Track 1.2

### Ecosystems in support of sustainability

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#### How Local Ecosystems Can Support Energy Communities: Insights from Debagoiena Region

Rabanete, Lierni (1);  
Igartua, Juan Ignacio (1);  
F. Mendoza, Joan Manuel (1,2);  
Ibarra, Dorleta (1)

1: Mondragon Unibertsitatea, Faculty of Engineering, Mechanics and Industrial Production, Loramendi 4, Mondragon 20500 Gipuzkoa, Spain;

2: IKERBASQUE, Basque Foundation for Science, Plaza Euskadi 5, 48009 Bilbao, Spain  
lrabanete@mondragon.edu

Energy communities are increasingly seen as a key lever for the energy transition. However, energy communities need supportive ecosystems to overcome the challenges they face individually. This study explores the development of a supportive ecosystem for energy communities in the Debagoiena region, driven by the collaborative network D2030. Following a participatory action research approach, presents a retrospective case study addressing three key questions: How to build supportive local ecosystems for energy communities, the importance and contribution of these ecosystems to energy community deployment, and the challenges in their creation. Key mechanisms identified in the supportive ecosystem for energy communities include Laboratories (open learning communities), a working group for energy community members, and the Community Transformation Office (open to civil society). The research highlights the importance of adaptable, responsive, and community-driven ecosystems in supporting the growth and deployment of energy communities. Leveraging cooperative values and structures, as exhibited by D2030, can be instrumental in overcoming challenges and fostering a successful transition towards a sustainable energy future.

## **Track 1.2**

### **Ecosystems in support of sustainability**

#### **Digital Entrepreneurial Ecosystem for Circular Startups: A Configurational Study**

Roshan, Ravi (1);

Balodi, Krishna Chandra (1);

Datta, Sagnika (1);

Upadhyay, Arvind (2);

Kumar, Anil (2)

1: Indian Institute of Management Lucknow, India;

2: London Metropolitan University

phd21028@iiml.ac.in

Circular economy startups are the future of global business enterprises as they can solve unresolved socio-environmental problems the world is grappling with. The rise of the circular economy concept coincides with digital transformation, a socioeconomic change shaped by the widespread adoption and use of digital technologies. Using set-theoretic methods, we advance a configurational perspective to study the formation of circular startups (CSUs) through the lens of the digital entrepreneurial ecosystem (DEE). We argue that several alternate configurational recipes (combination of individual DEE elements) for a high CSU formation are possible. We use the fuzzy set qualitative comparative analysis (fsQCA) on cross-sectional data from 29 countries to obtain configurations for the presence and absence of a high circular startup formation rate. We obtained six configurations for the presence of a high CSU formation rate and three for the absence of a high CSU formation rate, thus providing empirical evidence of equifinality. Our results reveal that certain DEE elements, such as digital protection and access, act as critical drivers for CSU formation. While other DEE elements, such as digital freedom, literacy, and adaptation, take on a supportive role in driving the high formation rate of circular startups. We also show the complementarity effects, substitution effects, and neutral permutations of certain DEE elements among the configurations.

## Track 1.2

### Ecosystems in support of sustainability

#### Entrepreneurial Circular Ecosystems in the Context of Urban Agriculture, an alternative for food sustainability in cities

Torres Ximenes, Elvia Florencio (1,2);  
Feitosa, Paulo Henrique Assis (1);  
Pinto, Liliâne Araújo (2);  
Souza-Piã, Roberta de Castro (1)  
1: University of Sao Paulo, Brazil;  
2: Federal University of Piauí, Brazil  
elviaftx@usp.br

Amid increasing urbanization and the need for a sustainable food supply chain, Urban Agriculture (UA) emerges as a promising alternative to promote more sustainable and resilient urban communities, especially when implemented under the principles of the circular economy. Additionally, entrepreneurial action and an ecosystem approach involving the cooperation of multiple actors in the urban context play significant roles. Research on this topic is still in its early stages. Thus, this article aims to identify potential actors in the literature to form an Entrepreneurial Circular Ecosystem (ECE) of Urban Agriculture (UA) that provides sustainable development. To achieve this, a systematic literature review was conducted using Scopus and Web of Science databases. The articles were reviewed through content analysis using NVivo 12 software. Among the essential elements for the development of an ECE in UA are the necessity of multidisciplinary partnerships, technological innovation, cultural change, entrepreneurial action, cooperation among diverse ecosystem actors, and engagement of local communities. Additionally, the importance of an orchestrating organization that synergistically unites all stakeholders is emphasized. The study also highlights the need for public policies and initiatives to promote UA and encourage collaboration among different actors in the urban ecosystem to achieve more sustainable and resilient cities in the future.

## **Track 1.2**

### **Ecosystems in support of sustainability**

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#### **Application Of CircularTRANS Model In A Service Company**

Urain, Idoia;  
Eguren, José Alberto;  
González de Herrero, Marta;  
F. Mendoza, Joan Manuel;  
Justel, Daniel  
Mondragon Unibertsitatea, Spain  
iurain@mondragon.edu

This article presents the CircularTRANS model that helps small and medium-sized enterprises (SMEs) to move towards the Circular Economy (CE) by identifying opportunities for improvement and developing improvement projects. This structured and easy-to-apply model has a web platform where all the steps to follow are centralized. It includes a diagnostic questionnaire called Industrial Circular Economy Questionnaire (ICEQ), composed of 165 questions that are divided into: i) external processes of the company and ii) internal processes; an analysis of results; a selection of opportunities grouped into: (i) opportunities to strengthen and (ii) opportunities to maintain; a definition of the roadmap where: i) the feasibility of the opportunities is measured considering their feasibility, expected benefit and resources required and ii) the maturity period of the opportunities and an action plan where the start and end dates and the person responsible for each opportunity are specified. On the other hand, the platform is completed with support processes that identify: i) initial training on CE, ii) examples of good practices of both national and international companies and iii) examples of tools. In addition, a case study shows the application of the CircularTRANS model in a dental clinic where, after completing the ICEQ questionnaire and analyzing and selecting the opportunities, several improvements have been obtained, such as: i) the reduction and management of plastics, ii) energy savings, iii) water savings, iv) sustainable mobility strategies for customers and v) green purchasing strategies for suppliers among others.

## Track 1.2

### Ecosystems in support of sustainability

#### Institutional Pathways in the Support of Social Entrepreneurs: The Role of Municipalities

Van Mensel, Evelina (1,2,3);

Leyen, Bart (1);

Dentchev, Nikolay A. (2,1)

1: American University In Bulgaria;

2: University of National and World Economy, Bulgaria;

3: American University In Bulgaria

evmensen@aubg.edu

The increasing recognition of the social economy's importance has led governments to actively promote its development, aiming to address market failures and institutional voids. Within this context, social entrepreneurs (SEs) play a crucial role in seeking innovative solutions for societal challenges, often requiring external support to sustain their dual mission. Governmental institutions have been pivotal in fostering SEs, with local municipalities emerging as key supporters due to their proximity to societal issues and resources. However, the roles of governments in supporting SEs are often generalized, lacking clarity and specificity. Addressing this gap, research has begun focusing on the diverse approaches municipalities employ to support SEs, emphasizing the importance of understanding the types of institutional developments that facilitate such support. This study applies an institutional theory lens to explore the mechanisms utilized by municipalities in supporting SEs, uncovering emerging forms of institutional development and partnership models. Through 30 in-depth interviews with stakeholders across municipalities in the Netherlands, Belgium, and Bulgaria, the study aims to provide insights into the nuanced roles of municipalities in fostering social entrepreneurship and advancing sustainable solutions to societal challenges.

## **Track 1.2**

### **Ecosystems in support of sustainability**

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#### **Fintech & The Financial Ecosystem: Model for Sustainability**

Yap, Lauren Nicole Lamela;  
Louro, Antonio  
GBSB Global, Spain  
lauren.yap@student.gbsb.global

In response to the New Business Models for 2024 through the lens of Ecosystems in Support of sustainability, we explore Financial Technology (Fintech), its characteristics, dynamics and the opportunities it carries in regards to interconnectedness. FinTech continues to be jointly a catalyst for change and a model for digital innovation and inclusion. As banks are now called to innovate, FinTech has been a force to be reckoned with in driving transformation in the digital space. But how does one reconcile this ever-dynamic industry with overlapping products and services? How is sustainability and digital inclusion championed? This paper seeks to provide an alternative perspective based on theoretical models and principles that will shed light on the nuances and benefits of having a unified financial services ecosystem and how having a commonality in economic goals can provide a harmony that can only be brought about by collaboration.

## Track 1.2

### Ecosystems in support of sustainability

#### Green And Digital Skills For Rural Entrepreneurs: Learning Via Business Model Design, Practice And Ecosystems Theory

Žebrytė, Ieva  
ISM University of Management and Economics, Lithuania  
zebrytei@gmail.com

Relational Paradigm Approach to Sustainability Education: Business Models for Rural Ecosystems. Ecosystems thinking and 'three bodies of knowledge' approach connected by way of prescriptive assumptions of Relational Paradigm applied to adult education within Sustainability Entrepreneurship and Innovation Ecosystems is a complex but complete way of understanding how ecosystem-building and capacity-building efforts converge. Mainstreaming of sustainability entrepreneurship skills through adult education programs directed at groups with fewer opportunities, such as Rural Entrepreneurs, may be achieved through engaging in design-practice-theory. This submission details preliminary results of the multiple case-study undertaken under the re:GREEN project. The case-study answers the question of how capacity-building efforts implemented through Sustainability Education programs produce synergy with ecosystem-building when directed at groups with fewer opportunities, such as Rural Entrepreneurs in Germany, Lithuania and Sweden? Preliminary results of the research demonstrate that business model design-practice-theory is at the heart of more complete understanding of the underlying social phenomenon in the field of Entrepreneurial Education. Relational Paradigm helps us see that the elements and dimensions of any system affect the processes and the state of the entire system (Walsh et al., 2020); thus, highlighting the transformative properties of Sustainability Education programs on the entire ecosystem through their effects on the learners and their relations with other stakeholders.



## **Track 1.3**

### **Business models for transition: empirical observations and theoretical foundations of business models fostering societal transformation and transition**

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#### **Visualising Regional Circularity: Accelerating Transition To Ecosystems For Multiple Value Creation**

Bootsma, Peter (1);

Pennink, Bartjan (2);

Faber, Niels (2,3)

1: Noorden Duurzaam, Netherlands, The;

2: University of Groningen, Netherlands, The;

3: Hanze University of Applied Sciences, Netherlands, The

n.r.faber@gmail.com

In this paper we address the question how visualisation enables cooperation around multiple value creation and transition towards sustainable regional development. We present the modelling tool CEVIS (Circular Economy Visualisation) for circular economy initiatives in a regional context. This instrument is intended to bring together representatives of societal sectors parties around the topic of multiple value creation. In case of large-scale application through proliferation of its use, it could provide a means for scaling up circular initiatives. The modelling tool deliberately takes an ecosystem perspective on circular economy developments, through (1) visualisation of circular product flows in an economic system, (2) identification of involved actors, and (3) highlighting multiple value creation.

**Track 1.3****Business models for transition: empirical observations and theoretical foundations of business models fostering societal transformation and transition****Circular Transition Through Corporate Ventures? Start-up Identity And Strategizing Under Ambiguity.**

Borner, Kathrin (1);

Deken, Fleur (2);

Berends, Hans (2);

Feldberg, Frans (2)

1: Erasmus University Rotterdam;

2: Vrije Universiteit Amsterdam

borner@rsm.nl

This empirical study offers insights into the struggles of new corporate ventures to make circularity goals work in practice. Over a period of five years, we followed a circular business model using ethnographic methods. We show how the corporate venture that was set up to drive circularity and data-drivenness drifts away from these espoused goals. Our study suggests that goal ambiguity creates freedom for corporate ventures to deviate from imposed goals such as circularity. The venture's identity served as a main driver for the strategy drift.

## **Track 1.3**

### **Business models for transition: empirical observations and theoretical foundations of business models fostering societal transformation and transition**

#### **The Doing Good Business Diamond - Going Beyond the Triple Bottom Line for Sustainable Business Modeling**

Bruun, Charlotte;  
Kyhnau, Jan  
UCN, Denmark  
chb@ucn.dk

Economies are always in transition, yet for some historical periods transformations have been more revolting than for others. There are periods where changes in the way we create value have caused changes in the way we see ourselves as human beings and the way we organize our societies. This was the case when we went from being hunter-gatherers to becoming farmers, and when our economies were industrialized. Each historical period found ways of dealing with the issue of sustainability – ways of preventing those in power from exploiting planet and people such as the sharing rules of hunter-gatherers, the religious demands of feudalism and the competitive markets of capitalism.

When sustainability of our societies is threatened, it may be a sign that we are living in a time of revolting transition – that we are entering a post-industrial era and need to adjust our behavior and our governance systems. Businesses are driving the transition and should also take responsibility for People and Planet. Sustainable business models, like the Triple Layered Business Model Canvas (TLBMC), is one method for systematically evaluating the impact of businesses on people and planet – but using such tools is like treating symptoms without knowing what is wrong with the patient. We developed a framework, Doing Good Business (DGB), (Bruun, 2021), for addressing underlying problems in the way value creation, governance, and behavior interconnect. In the Doing Good Business Diamond (DGBD) this framework is integrated with the TLBMC to get a full check of the state of the patient.

## Track 1.3

### **Business models for transition: empirical observations and theoretical foundations of business models fostering societal transformation and transition**

#### **Towards Sustainable Business Models for the Healthcare Industry**

Couckuyt, Dries (1);

Loomans, Maarten (1,2);

Decoster, Robin (2);

Henssen, Bart (1)

1: Center for Sustainable Entrepreneurship (CenSE), Odisee University of Applied Sciences, KU Leuven Association, Department of Business Science, Warmoesberg 26, 1000 Brussels, Belgium;

2: Health innovation, Odisee University of Applied Sciences, KU Leuven Association, Department of Health Care, Blekerijstraat 23, 1000 Brussels, Belgium

dries.couckuyt@odisee.be

Although the healthcare sector is a key actor in addressing the repercussions of climate change-mediated health hazards on patients, it is also a significant contributor to environmental pollution. The present study addresses this paradox by empirically examining 32 healthcare startups. The aim is to explore sustainable business models in the healthcare sector and to contribute to a model based on operational cases. Data is collected through a three-hour workshop with the triple layer business model canvas (TLBMC). This research-in-progress has the potential to illustrate the transition from a conventional business model to a sustainable business model in healthcare startups. The empirical analysis will highlight the motivations, strategies, and actions of healthcare startups. Moreover, we further contribute to the validation of the TLBMC. Finally, we provide valuable insights on managerial implications.

## **Track 1.3**

### **Business models for transition: empirical observations and theoretical foundations of business models fostering societal transformation and transition**

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#### **Business Model Development for Inclusive Transition of Future Generations Interests: A Reconceptualization of Current Paradigms**

Johannsdottir, Lara  
University of Iceland, Iceland  
laraj@hi.is

To foster transformation and transition towards sustainable societies (Kaivo-oja et al., 2014; van de Kerk, 2014) embedded within planetary health and boundaries (Stockholm Resilience Centre, n.d.; Whitmee et al., 2015) theoretical exploration must take place. This includes conducting a critical appraisal of current theoretical paradigms governing companies' relationship with the external environment, including shareholder theory (Friedman, 1970), stakeholder theory (Freeman & Reed, 1983), corporate social responsibility (Carroll, 1991, 2016; Garriga & Melé, 2004; Latapí Agudelo et al., 2019), and corporate sustainability (Bansal & Song, 2016; Montiel, 2008). Consequently, this paper and presentation aim to critically evaluate the current business-related theoretical paradigms and suggest how they can be reconceptualized so that they take into account the interests of future generations (Hubacek & Mauerhofer, 2008), given that the findings suggest that none of these theories reach far enough to address the global grand challenges we are faced with, particularly the ones that will have profound implications for future generations as their interests are generally being ignored. The paper is therefore relevant to the overall conference theme: Sustainable business models for the digital, green and inclusive transition. Particularly, it has relevance for track 1.3 Business models for transition: Empirical observations and theoretical foundations of business models fostering societal transformation and transition.

**Track 1.3****Business models for transition: empirical observations and theoretical foundations of business models fostering societal transformation and transition****Developing Transformative Strategies For The Construction And Building Sectors**

Jonsdottir, Augusta Thora;  
Johannsdottir, Lara;  
Davidsdottir, Brynhildur  
University of Iceland, Iceland  
atj13@hi.is

This study delves into the global challenge of biodiversity loss and climate change, emphasizing the international commitment made by most nations through the Convention on Biological Diversity and the Paris Agreement. Despite these commitments, there is a growing discrepancy as countries intensify raw material use, deviating from a circular economy. To address this, the study advocates for a fundamental transformation in economic activities and operations, echoing the call from the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Service (IPBES). The imperative for transformation is addressed by adopting a system thinking approach and the analytical framework of leverage points, or places to intervene in a system. To achieve this objective, the study selects sectors with substantial impact: the Icelandic building and construction sectors. These sectors serve as a case study, representing an individual case with noteworthy environmental and economic consequences within the broader European context. Conducted through semi-structured interviews and group model-building sessions, the study reveals preliminary findings indicating that existing policies lack the transformative potential needed for the sectors' circular transformation. The study recommends considering leverage points during the formation of policies and strategies to enhance effectiveness. Theoretical contributions include advancing the understanding of the analytical framework of leverage points. Practical contributions offer policymakers guidelines for informed decision-making when forming strategies with more transformative potential. The study's insights are valuable not only for the construction sectors but also for businesses and policymakers seeking to transition towards a circular economy in various sectors.

## **Track 1.3**

### **Business models for transition: empirical observations and theoretical foundations of business models fostering societal transformation and transition**

#### **Sustainable Business Models for Carbon Sequestration in Soils to Enable Food System Transformation**

Maehle, Natalia (1);

Otte, Pia Piroschka (2)

1: Western Norway University of Applied Sciences, Norway;

2: Rurallis – Institute for Rural and Regional Research, Norway

natalia.mehle@hvl.no

Carbon sequestration in soil represents a sustainable soil management practice that has a potential to enable food system transformation. However, this practice has proven to be costly for farmers within the current regulatory, market and business frameworks, and there is a pressing need for new solutions. One of such solutions can be sustainable business models where companies invest in carbon sequestration practices at local farms to contribute to local sustainable food production and reduce their climate footprint. This can make carbon sequestration in soils economically viable for farmers whilst transforming the sustainability performance of the food system, reducing net emissions, enhancing soil health, and sustaining future agricultural productivity. The current study aims to develop such sustainable business models in Norway. As the first step, we mapped existing business models for sequestering carbon in soils both in Norway and internationally. Then, we collected and analyzed secondary data in form of company records, websites, and press reports and conducted in-depth interviews with representatives of the cases to investigate relevant stakeholders and design principles for the value proposition and capture. As a result, we identified the building blocks for the design of business model concepts for carbon sequestration in soils based on the adapted Sustainable Business Model Canvas. Our findings serve as a basis for creating preliminary sustainable business model scenarios for carbon sequestration in agricultural soils to foster food system transformation. These scenarios will be further validated and developed through a series of focus groups with Norwegian farmers and companies.



## Track 1.3

### **Business models for transition: empirical observations and theoretical foundations of business models fostering societal transformation and transition**

#### **Implementing Product-Service System Business Models in the Building and Construction Sector**

Mattijssen, Philippe (1);

Johannes, Koos (2);

Wakkee, Ingrid (3)

1: Vrije Universiteit Amsterdam, School of Business and Economics, Netherlands;

2: Amsterdam University of Applied Sciences, Netherlands;

3: Amsterdam University of Applied Sciences, Netherlands

k.johannes@hva.nl

The building and construction industry, which is responsible for 39% of global carbon emissions, is far off track in achieving its net-zero emission targets. Product-service system (PSS) business models are one of the instruments used by the industry in the transition toward reaching these targets. A PSS business model is designed around an end-of-life solution that minimizes material usage and maximizes energy efficiency. It is provided to customers as a marketable set of products and services, jointly capable of fulfilling a customer's needs. There are signals from practice however, that suggest that the implementation of this type of business model is falling behind. This study investigates this and seeks to identify key challenges and opportunities for sustainable PSS business models in the built environment. Using a grounded theory approach, data from 13 semi-structured interviews across five companies is used to identify challenges and opportunities that suppliers are facing in selling their products through PSS business models. Our preliminary data analysis points to nine challenges and opportunities for PSS business models. We discuss these in the context of the current economic transition toward a sustainable and circular built environment and provide suggestions for further research that could help to overcome resistance toward the implementation of PSS business models. The contribution of this research to researchers and practitioners is that it provides insights into the adoption of new business models in fragmented and competitive business environments.

## **Track 1.3**

### **Business models for transition: empirical observations and theoretical foundations of business models fostering societal transformation and transition**

#### **Niche Innovations for Sustainability Transitions: Creating and capturing multiple values**

Vadacca, Luca (1);

van den Berg, Marc (1);

Deken, Fleur (2);

Volker, Leentje (1)

1: University of Twente, Netherlands, The;

2: Vrije Universiteit Amsterdam

[l.vadacca@utwente.nl](mailto:l.vadacca@utwente.nl)

Our study explores the transformative role of innovations developed in fieldlabs in fostering sustainability transitions through the creation and capture of multiple values. Fieldlabs are collaborative platforms that have recently emerged in the Netherlands, serving as protected niches where transformative innovations are developed, tested, and scaled up. However, there is a gap in understanding how these innovations create, deliver, and capture multiple values, thereby contributing to sustainability transitions. To address this gap, we use a content analysis of over 450 fieldlab projects in the construction, energy, and health sectors. Using a theory elaboration approach, we examine the creation, capture, and assessment of multiple values, and we outline the business models that underpin these collaborative fieldlab innovations. The result of this analysis is the “Niche Innovations Impact Matrix” (NIIM), a framework to assess the multidimensional value contributions of these projects. This matrix, grounded in empirical evidence, serves as a tool to understand the impact of sustainable business models on addressing societal challenges, especially in the context of collaborative niches. Our findings highlight the potential of fieldlab innovations to catalyze the creation and capture of multiple values, providing actionable insights for policy makers, practitioners, and entrepreneurs. The research highlights the importance of reconceptualizing value in business models to drive sustainability transitions. It provides a nuanced understanding that challenges traditional frameworks and informs future strategies to address societal challenges.

**Track 1.3****Business models for transition: empirical observations and theoretical foundations of business models fostering societal transformation and transition****The Place of Technology and Digitalisation in Solving the Sustainability Problem.**

Van den Berckt, Ilse;  
Reulens, Ann  
UC Leuven vzw, Belgium  
ilse.vandenberckt@ucll.be

We observe a growing awareness of sustainability challenges, and this also translates into actions. We notice that technological innovations, digitalisation and artificial intelligence are assigned an important place in this. Given the historical contribution of technology to our prosperity and standard of living this is understandable, but a number of caveats are raised. In the public sphere we encounter more and more stories of negative effects of automation and technological innovation, which can be divided into the following five categories: a too optimistic financial plan, the question about a turning point, misunderstanding complexity, incomplete costs and social challenges. Secondly, we wonder if this almost limitless reliance on technological innovations can be a pitfall, keeping us away from other perspectives that might contribute more to our sustainability challenges. We conclude that the great belief in green technology is reflected in policy and research (budgets), while the long-term impact of these types of sustainable business models is yet to be proven. Crises occur when human thinking is out of sync with the complexity of the environment, and we are currently at such a tipping point. If we really want to go for sustainability, we might have to master new paradigms, and from there discover new economic and business models.

## **Track 1.3**

### **Business models for transition: empirical observations and theoretical foundations of business models fostering societal transformation and transition**

#### **Looking For Key Characteristics Of Sustainable Business Models : Learnings From Innovations Based On Eco-Design, Frugal Innovations And Circular Economy Practices**

Vernier, Marie-France

UCLy (Lyon Catholic University), UR CONFLUENCE : Sciences et Humanités (EA 1598), Lyon, France

mfvernier@univ-catholyon.fr

In the economic literature, innovation is most often seen as a source of economic progress and growth since the work of Joseph Schumpeter. In the early 1960s, authors start focusing on environmental innovations. These are socio-technical solutions that preserve resources, reduce environmental degradation, and/or recover the value of substances already used in economic activity (De Jesus et al., 2018). Innovations based circular economy practices and on eco-design are particularly interesting as they can bring about radical change.

China in 2009, and then Europe in 2015, have placed the circular economy at the heart of their policies with the aim of drastically reducing waste. For numerous academics, circular economy practices are the solution to climate change (Bocken et al. 2016 ; Mendoza et al. 2017 ; Geissdoerfer et al. 2017 ; Korhonen et al. 2018). Sustainable design or eco-design approaches are often presented as a component of circular economy practices for the European Commission (2015) and academics (Lüdeke-Freund et al., 2019; Garrido-Prada et al., 2021). However, circular economy approach face limits. Our hypothesis is that eco-design approach can make a large contribution to the ecological transition and should be at the heart of economic policies. Eco-design is not a component but a necessary complementary approach to circular economy.

**Track 1.3****Business models for transition: empirical observations and theoretical foundations of business models fostering societal transformation and transition****Social Economy Enterprises And Circularity: Towards A Typology Of Business Models**

Vežina, Martine (1);

Raufflet, Emmanuel (1,2);

Buendia Martinez, Inmaculada (3,1)

1: HEC Montreal - Quebec Research Network on circular economy, Canada;

2: HEC Montréal - Crises HEC Montréal;

3: University of Castilla-La Mancha - Icadd HEC Montréal

emmanuel.raufflet@hec.ca

Research on circular business models (CBM), that aim to align economic, social and environmental sustainable value creation, has greatly expanded but mainly focused on profit-driven organizations. The scarcity of research on circular on business models mobilized by social and solidarity economy (SSE) organizations contrasts with its sheer significance in the economy as well as with the recent growing interest from policy makers for the potential of SSE for a fairer and sustainable transition. This research aims to complement this research area and examines how SEE mobilize circular strategies into their business models. Building on a multiple case study research design, the results show eight types of business models integrated into SEEs. This typology allows us to the role and place collective enterprises play and could play in the socio-ecological transition, as well as the issues involved in scaling up such initiatives including their issues and challenges.

## **Track 1.4**

### **Collaborative and circular business models in the global south**

#### **Strategic symbiosis between Academia, Public and Private Sector in Uruguay: case of the Eco Park “Polo de Economía Circular de Canelones”, a hybrid proposal with virtually and physically associated companies**

Belvisi, Silvia (1);

Vázquez, Inéz (2);

Menoyo, Alfonso (3)

1: Universidad Tecnológica del Uruguay, Uruguay;

2: Facultad de Ciencias Económicas y Administración, Universidad de la República, Uruguay;

3: Universidad de Mondragon, España

silvia.belvisi@gmail.com

The transition from linear to circular economy is a complex challenge that requires the commitment of all actors in society. The quadruple helix, which involves public policies, private companies, civil society and academia, is an open innovation model that can help achieve the goal.

Ecoparks are systems that can facilitate the implementation of the circular economy through industrial symbiosis and synergy to develop innovative projects and solutions.

The work analyzes the experience of the Circular Economy Pole (PEC) of Uruguay. This ecopark is an unprecedented experience in the country that has achieved significant advances in terms of circular economy.

The process addressed the construction of an integrative governance model between stakeholders, a strategic plan, an operational plan and the selection of measurement instruments to monitor the progress towards the circular economy.

The experience of Uruguay's PEC demonstrates that ecoparks can be an effective tool to implement the circular economy in a space that accelerates the development of innovative sustainable solutions, with valuable learning that can be applied in Uruguay or other countries.

## Track 1.4

### Collaborative and circular business models in the global south

#### **Business Models in the Circular and Collaborative Economy: New horizons for sustainable development in the São Francisco Valley**

Bezerra, Katia Souza (1);

da Silveira, Alan Patrick Cavalcante (2);

Santiago, Alvany Maria dos Santos (3)

1: Federal University of Sao Francisco Valley (Univasf) and Micro and Small Business Support Service - SEBRAE /PE, Brazil;

2: University of Bahia State (UNEB);

3: Federal University of Sao Francisco Valley (Univasf)

katias@pe.sebrae.com.br

The Vale do São Francisco in Pernambuco, known nationally for its irrigated fruit farming, faces environmental and social challenges arising from the traditional development model. This study analyzes the application of the principles of the collaborative and circular economy in the context of business models developed from actions to encourage the creation of innovative ventures in this territorial context. Since 2018, operators in this territory have been encouraged to organize themselves as a network during the structuring of the Local Innovation Ecosystem. This is a national policy created by the Micro and Small Business Support Service (SEBRAE) to stimulate business competitiveness and mechanisms for generating wealth in a sustainable way. Between 2022 and 2023, 2,214 people and 307 companies were impacted by SEBRAE's actions, only in the city of Petrolina. This objective study analyzes three business models, at different stages of maturity, and verifies the potential impacts that these businesses cause in the territory. The methodology developed to carry out this study occurred in three phases, the first being a dive into the state of the art and selection of companies; the second involved the preparation and application of questionnaires; and finally, in the third phase the data was analyzed. Therefore, the study fills a gap that has not yet been explored in the literature, which is the lack of in-depth analysis of the subjective aspects of circular and/or collaborative entrepreneurship and contributes to the contextualization of the dynamics in an Innovation Ecosystem.

## **Track 1.4**

### **Collaborative and circular business models in the global south**

#### **Value Creation in Sustainability-Oriented Cross-Sector Partnerships in Politically Complex Institutional Contexts**

Bui, Chau;  
Kang, Xu;  
Fertig, Matthias;  
Singh, Supriya  
Friedrich Alexander University Erlangen-Nuremberg, Germany  
singh.sups@gmail.com

Business has evolved into a formidable transnational actor transcending cultural, political and societal boundaries over the last three decades. Examining business models through the prism of relationships and interdependencies reveals the intricacies of its operations and stakeholder interactions as well as the complex process of collaborative value creation. A system-level approach to understanding business models, particularly through Cross-Sector Partnerships (CSPs), becomes crucial due to the embeddedness of companies in value chains, stakeholder networks and inter-organizational collaborations. Further, such collaborative models are significantly influenced by the contexts within which they operate. This research adopts a theoretical lens of institutional logics, which shape beliefs and practices within organizations, and explores its interplay with the value creation process in CSPs operating in authoritarian states like China and Vietnam. While previous research has examined the influence of market and civil society logics, a gap remains in understanding the value creation perspective in authoritarian contexts. The research employs multiple case studies within the textile industry, and seeks to answer the guiding question: How can cross-sector partnerships for sustainability between businesses and civil society organisations create value in authoritarian institutional contexts? The significance of this research lies in its potential to unveil the process of value creation through CSPs in authoritarian states, contributing theoretical insights and practical guidance for multinational corporations operating in politically sensitive contexts. The findings promise to enrich our understanding of CSP dynamics and provide valuable guidance for optimizing such partnerships in challenging political terrains.



## Track 1.4

### Collaborative and circular business models in the global south

#### Life-Cycle Assessment For Circular Economy And Carbon Footprint Analysis: A Case Study Of Pizza 4P's In Vietnam

Nguyen, Hoang Nam;  
Nguyen, Cong Thanh;  
Nguyen, Dieu Hang  
National Economics University, Vietnam  
namnh@neu.edu.vn

This study investigates the sustainability practices of Pizza 4P's, a prominent figure in Vietnam's food industry, using a Cradle to Gate Life Cycle Assessment (LCA) approach with Open LCA software. Focusing on 4P's pizza production, it uncovers the environmental benefits of their sustainability endeavors, including the finding that the making of a 4P's pizza emits 28 percent less carbon dioxide than a normal pizza, and highlights strong partnerships with like-minded suppliers. However, it also suggests room for improvement, emphasizing the need to expand sustainable supplier networks, address technical challenges, and adopt circular economy principles for organic waste management. Encouraging customers to choose vegetarian pizzas is recommended for further sustainability. This offers practical insights for both the company and the wider food and beverage industry, underlining the crucial role of sustainable practices in shaping the future of food production and consumption.

## **Track 1.4**

### **Collaborative and circular business models in the global south**

#### **Factors Affecting the Competitiveness of Fashion Retail Small and Medium-sized Enterprises during Digital Transformation in Vietnam**

Nguyen, Quynh Anh;  
Nguyen, Lang;  
Dang, Na;  
Nguyen, Nguyen;  
Mai, Chau Anh;  
Nguyen, Ha  
National Economics University, Vietnam  
11210567@st.neu.edu.vn

The burgeoning fashion industry in Vietnam is escalating competition among small and medium enterprises, amplified by surging foreign investments. Despite comprising 97% of all businesses, small and medium enterprises encounter hurdles due to their limited technological capabilities, hindering their seamless integration into industry value chains. While digital transformation stands as a pivotal factor in heightening competitiveness, traditional and small-scale brands are sluggish in embracing it, thereby jeopardizing their potential for growth. This lack of consensus on the determinants of small and medium enterprises competitiveness in the fashion retail sector underscores the need for thorough research. Employing the Competence-based view (CBV) theory, our research delves into the dynamics of competitiveness for small and medium-sized fashion retailers amid Vietnam's digital transformation. Through in-depth interviews with 12 managers and brand founders, a survey of 260 businesses, and data analysis using SPSS 26 software, six key factors were identified, ranked by their impact on competitiveness: R&D capability (0.266), Digital transformation (0.245), Service quality (0.215), Marketing capability (0.203), Business management capability (0.174), and Financial capability (0.15). Furthermore, our study scrutinizes how variables like scale, operational location, business age, and product segment impact competitiveness, unearthing disparities across enterprises of varying sizes. Consequently, we offer strategic recommendations tailored for small and medium-sized fashion retailers and governmental entities, aimed at harnessing the digital transformation landscape to bolster competitiveness.

## Track 1.4

### Collaborative and circular business models in the global south

#### Investigating the Production of Alternatives to Single-Use Plastic Products in Vietnam

Nguyen, Thanh Cong (1);

Nguyen, Khoa Minh (2)

1: National Economics University, Hanoi, Vietnam;

2: Institute of Strategy and Policy on Natural Resources and Environment, Hanoi, Vietnam

thanhnc@neu.edu.vn

Single-use plastics (SUPs) have been the focus of plastic pollution control, and limiting their use while shifting to other alternatives has been widely promoted in various countries. In Vietnam, between 2.8 and 3.1 million tons of plastic waste are estimated to be discharged on land every year, which makes the country one of the world's major sources of plastic litter. Along with many countries around the world, the government of Vietnam has committed to taking strong actions to reduce plastic waste. To support plastic pollution control, a survey of enterprises producing alternatives to SUP products in Vietnam was undertaken. Our survey results showed that for most SUPs, alternative products were already produced in Vietnam's market. However, alternative products are currently often more expensive than their respective SUP products. The number of enterprises producing alternative products is relatively small, and most of them are small and medium-sized enterprises. The market for alternative products is small when compared to conventional plastics. The demand for alternative products mainly comes from foreign customers (exports) or domestic businesses (restaurant chains, hotels, food business chains, entertainment businesses, and airlines). Promotion of alternative products through various policies and incentives to compensate for the higher price will be crucial in further reducing the SUP products that are responsible for, by far, the greatest amount of plastic pollution.

## **Track 1.4**

### **Collaborative and circular business models in the global south**

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#### **Frugal Innovation and Circular Economy at the Local Level. A case study in the Colombian coast**

Pineda-Escobar, Maria Alejandra (1,2)

1: International Institute of Social Studies - ISS, The Netherlands;

2: Politecnico Grancolombiano University, Colombia

pinedaescobar@iss.nl

As a new way of thinking, circular economy disputes the lineal view of economic processes by suggesting that waste can be utilized as a useful resource, creating business opportunities, reducing costs and protecting the environment. Frugal innovation is a novel innovation approach in resource-scarce environments that provides simple, affordable and functional solutions for unserved or underserved users. From a theoretical perspective, frugal innovation and circular economy have recently been considered to share similarities and be complementary. Taking a micro-level perspective, this short paper explores the idea that frugal innovation might function as a means to define and operationalize what circular economy signifies locally under resource scarcity conditions in the Global South. For this purpose, it centres attention in analysing how frugal innovation and circular economy manifest and interact at the local level in the BoP context of an emerging Latin American country, Colombia. Using a qualitative single case study, it explores the case of the non-profit organization Fundación amigos del mar, which has been recognized as an innovative response for the circular management of coastal plastic waste while improving the quality of life of vulnerable youth.

## Track 1.4

### Collaborative and circular business models in the global south

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#### Circular Start-ups in Latin America: Integrating Circular Business Model Innovation into Transitions Research

Tabares, Sabrina  
Eafit University, Colombia  
sabrinatabares01@gmail.com

The circular economy has emerged as a crucial response to global crises, advocating a shift from the “take-make-dispose” paradigm to a more circular economic system. Although business model innovation has the potential to promote sustainability transitions, limited understanding exists regarding circular business model innovation (CBMI). Despite the growth of research on circular start-ups, little is known about how these new entrants conduct long-term changes to systems to accelerate transitions in the Global South. Building upon transitions literature, we position circular start-ups as a typology of CBMI and seek to understand their impacts in the specific socio-technical context of Latin America. This study presents a multiple case study based on a series of interviews with innovators from circular start-ups in Argentina, Chile, Colombia, Mexico, Peru, and Uruguay. We move beyond a descriptive account of business model activities and offer an analysis of how circular start-ups, as a niche innovation, aim to reproduce impacts on the socio-technical regime and landscape levels. This research contributes to sustainability literature by providing a deeper understanding of circular start-ups as a type of sustainability-oriented innovation that contributes to circular transitions.

## **Track 1.4**

### **Collaborative and circular business models in the global south**

#### **Network Formation In Developing Organizational And National Circular Economy Strategies**

Valencia, Melanie (1);

De Jaeger, Simon (1);

Bocken, Nancy (2)

1: Center for Economics and Corporate Sustainability (CEDON), KU Leuven, Warmoesberg 26, 1000, Brussels, Belgium;

2: Maastricht Sustainability Institute, School of Business and Economics, Maastricht University, Tapijn 11 Building D, P.O. Box 616, 6200 MD Maastricht, The Netherlands.

[melanie.valencia@kuleuven.be](mailto:melanie.valencia@kuleuven.be)

Data from 302 organizations in Ecuador participating in developing the national white paper for the circular economy (CE), was analyzed to evaluate the types of associations being reassembled in developing organizational CE strategies. We evaluated size and sustainability sophistication to understand CE strategies and partners chosen to legitimize and find new meaning in existing and new relationships. We used multinomial logistic regression to compare and predict strategies and partnerships for CE implementations in this context. Currently, 45% of all actors already have a strategy that has been implemented, 98% of organizations want to implement new CE initiatives. Overall, 59% of organizations that already have a strategy only have up to 3 different types of CE initiatives. There is a tendency showing that with the highest number of strategies, there is also more implementation of initiatives which are higher in the circular hierarchy, showing gradual rather than disruptive implementation. There is also a tendency to involve a larger number of collaborators when moving towards regeneration. The majority of organizations would like to have an Ecodesign strategy and collaborate with waste pickers in the future. Support activities, public policy and awareness campaigns involve the most diverse stakeholders. Universities and guilds were the most widely chosen as future collaborators in all future CE initiatives.

## Track 1.4

### Collaborative and circular business models in the global south

#### Sociomaterial Network For A CE Transition In A Global South

Valencia, Melanie (1,2);

Yepez, Milena (2);

Soliz, María Fernanda (2);

Craps, Marc (1)

1: CEDON, KU Leuven, Belgium;

2: Universidad Andina Simón Bolívar, Ecuador

melanie.valencia@kuleuven.be

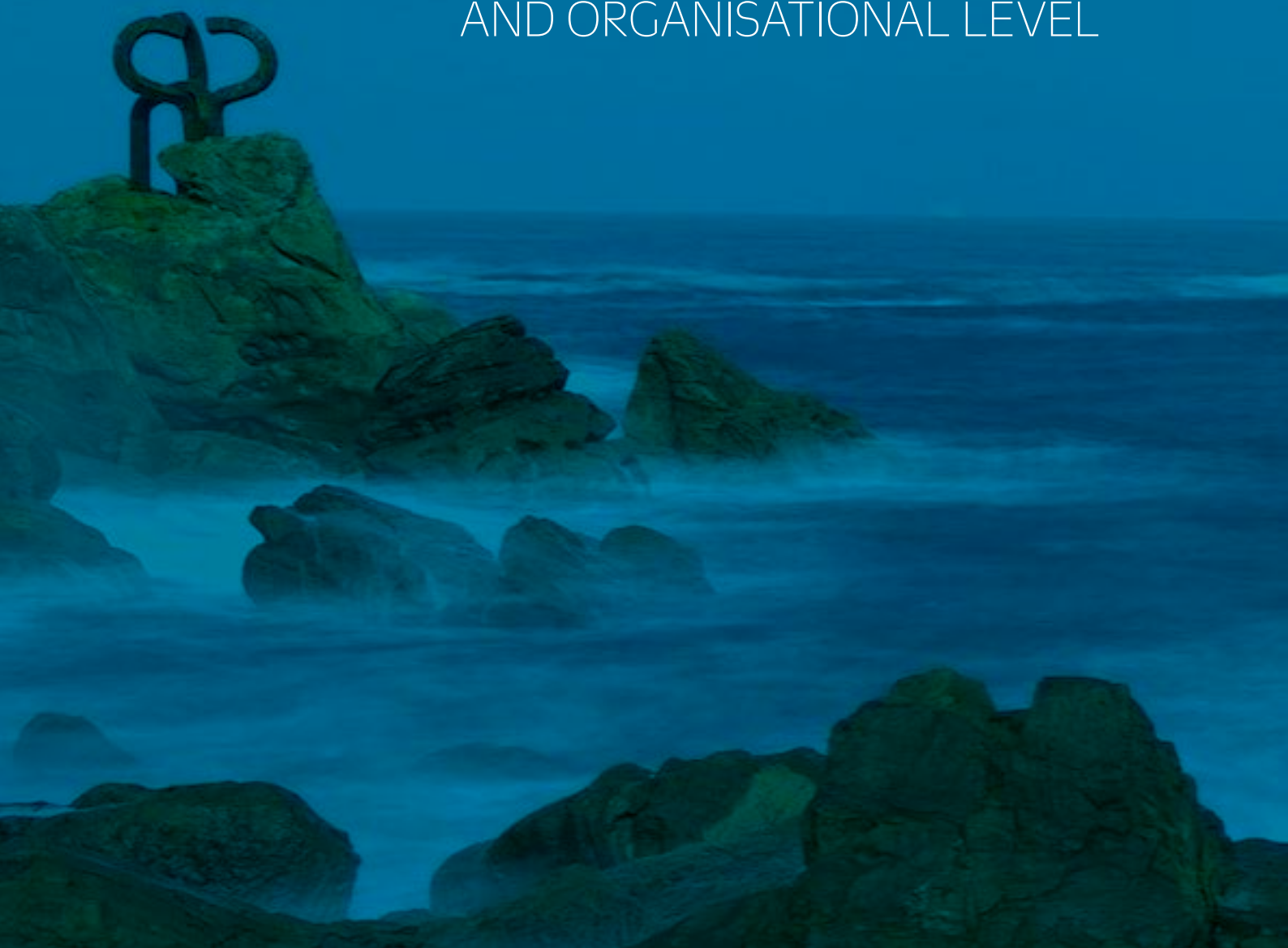
The transition to a Circular Economy (CE) requires systemic change. The narrow focus of technocratic assessments of the CE inhibits the transformation of the economic system that the CE demands. To delve deeper, this analysis uses sociomaterial theory to investigate the entanglement of the social and the material with a systemic narrative. Furthermore, circular transitions have mostly focused on the Global North; understanding Global South perspectives and context in the transition to avoid widening regional inequality is imperative. We use a qualitative assessment of the local informal recycling sector and other invisible and nascent circular economy stakeholders to assess the current network in a mid-sized city in Ecuador as a case study. The sociomaterial network in transformation has strengths that need to be reinforced but also significant gaps in how materials and relationships in informal sectors are considered and valued. From a practical perspective, there are several role gaps, such as reducing regulatory barriers to operate in a CE and implementing extended producer responsibility. Materials that must enter the economy in the form of products must last longer, be recyclable but also have realistic market and structural conditions to be recycled. Caring relationships and organizational strengthening must be fostered, as they constitute the main social support for the most vulnerable in informal sectors that sustain the CE. Finally, a value-based education must be addressed holistically, alongside a ubiquitous paradigm shift towards global circularity for a just and inclusive transition.



# SUSTAINABLE BUSINESS MODELS FOR THE DIGITAL, GREEN AND INCLUSIVE TRANSITION



## THEME 2. EXPLORING THE SECTORIAL AND ORGANISATIONAL LEVEL





## Track 2.1

### Innovation and data-driven business models for sustainable transformation

#### Integrating Data-Driven Business Models for Sustainability in the Food Sector

Bustamante, Maria J. (1);

Martin, Michael (1,2)

1: KTH Royal Institute of Technology, Sweden;

2: IVL Swedish Environmental Research Institute, Sweden

mariabus@kth.se

Vertical farming, as a form of controlled-environment agriculture, is being heralded as a data-informed alternative method for more sustainable food production. Recent studies have investigated how digital technologies can increase sustainable practices and lead to business model innovation within vertical farms. Remote-monitoring and centralization of tasks aided by digital technologies is a key value proposition of vertical farming solutions. Yet, it is still unclear how these data-informed practices and data-driven business models will be accepted and integrated beyond the vertical farms. Thus, this qualitative study focuses on the implementation of vertical farming solutions within the food retail sector. To explore the drivers and barriers of integrating vertical farming into the food retail system the paper draws on the concept of sustainable business model innovation and networked business models for sustainable transitions. Findings suggest that while both retailers and vertical farms align on an overall value proposition, greater innovation within the areas of value creation, delivery, and capture is needed. From the retailer side, value intention is vital in overcoming short-termism to create enabling conditions for the expanded adoption and scaling of vertical farm production. At the same time, vertical farms face the challenge of defining and integrating data-driven business models that go beyond internal efficiency measures and towards ecosystem transformation.

## **Track 2.1**

### **Innovation and data-driven business models for sustainable transformation**

#### **Antecedents Of Users' Satisfaction With AI-Based Tools In Healthcare: The Role Of Paradoxical Tensions And Paradox Mindset**

Irgang, Luis (1);  
Sestino, Andrea (2,3);  
Barth, Henrik (1);  
Holmén, Magnus (1)  
1: Halmstad University, Sweden;  
2: LUISS Guido Carli University – Rome, Italy;  
3: Catholic University of Sacred Heart, Rome, Italy  
luis.irgang@hh.se

The integration of Artificial Intelligence (AI) in healthcare can radically improve patient care by facilitating tasks such as exam analysis, diagnosis, and treatment recommendations. While much attention has been directed towards the potential of AI to enhance diagnostic accuracy, treatment recommendations, and administrative tasks, the satisfaction of healthcare workers (HCW) of using AI tools has not been systematically studied. Yet, existing literature has examined factors influencing the satisfaction of HCW with digital technologies, a critical gap persists in addressing the dynamic tensions that emerge with the integration of AI into healthcare practices. This study explores the impact of paradoxical tensions on healthcare workers' satisfaction with AI tools, investigating the moderating role of the paradox mindset.

Surveying 357 physicians and nurses in Swedish hospitals, the findings reveal that paradoxical tensions, mediated by the paradox mindset, positively influence users' satisfaction with AI-based tools.

This study provides insights on the complexities involved in human-machine interaction and how the nature of the decision-making may influence individuals' perceptions about AI technologies and willingness to adopt them in patient care routines. Reflecting on how paradoxical tensions affect the individuals' satisfaction with AI tools opens up a new opportunity to explore how dynamic factors (i.e., paradoxical tensions) affect the individuals' responses and attitudes towards AI.

**Track 2.1****Innovation and data-driven business models for sustainable transformation****Navigating Sustainable Business Model Transitions Through Tooling, Language, and Context by Intermediaries: A Data Science-Based Longitudinal Case Study**

Koers-Stuiver, {Dieke} Marlies;  
de Lat, Mark;  
Haaker, Timber  
Saxion UoAS, Netherlands, The  
d.m.koers@saxion.nl

This paper describes the first phase of our research into the influence of language construction and context on business model tools for sustainable business models within the advisory process of intermediaries. Employing a longitudinal case study, we follow two intermediaries for a year and combine machine learning methods, participatory principles, and qualitative methods to understand this process better. Our research focuses explicitly on intermediaries' role in guiding SMEs using business model tools through this transition. It examines how language construction and contextual factors influence the use of business model tools in the advisory process. By analyzing 196 articles and books on Sustainable Business Model Tools (SBMTs) and business models using Latent Dirichlet Allocation (LDA), our preliminary findings provide a basis to uncover insights that lead to developing a toolkit to improve intermediaries' support for SMEs. This sample led to identifying 10-15 potential topics, covering innovation, sustainability, customer value, digital transformation, and management processes. Further refinement is needed to clarify these topics and focus more on language construction and context, essential for understanding how intermediaries can guide SMEs in adopting sustainable practices effectively.

## **Track 2.1**

### **Innovation and data-driven business models for sustainable transformation**

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#### **Dressed In Data: The Role Of Digital Technologies In The Transition To Circular Fashion**

Manshoven, Saskia Maria;  
Smeets, Anse  
VITO, Belgium  
saskia.manshoven@vito.be

Fashion has a huge environmental and social impact. Transitioning to a circular textiles system is a key ambition in European policy and stands high on the agenda of many fashion companies. Digital technologies, such as Internet of Things, artificial intelligence, 3D printing, blockchain, and augmented and virtual reality are often mentioned as important enablers of more sustainable production and circular business models. These technologies can support circular fashion design, resource-efficient production processes, the adoption of new business models, and information sharing and transparency across the textile value chain, enabling better collaboration and more sustainable and ethical consumption of fashion.

In this study, we explore the current and future roles digital technologies can play in extending the life of clothing (slowing loops), in improving resource efficiency and reducing waste (narrowing loops), and in facilitating textiles recycling (closing loops). We study how digital technologies support the creation, delivery, and capture of circular value within fashion business models and discuss the opportunities, barriers and trade-offs that may arise.

The research entails a systematic literature and practice review of scientific and grey literature and is complemented by semi-structured interviews with frontrunner European fashion companies and SMEs, as well as sector organisations and expertise centres on sustainable fashion. We will formulate recommendations to European policy makers on the role of digital technologies in achieving the EU vision on circular textiles. The work will also be inspiring for fashion designers, entrepreneurs and businesses looking into the potential of digital technologies and circular business models for fashion.

## Track 2.1

### Innovation and data-driven business models for sustainable transformation

#### Digital Product Passports for a Circular Economy: Little Pain, Great Gain?

Piscicelli, Laura;

Bidmon, Christina;

Susha, Iryna

Copernicus Institute of Sustainable Development, Utrecht University, The Netherlands

[l.piscicelli@uu.nl](mailto:l.piscicelli@uu.nl)

Digital product passports (DPP) – product-specific data sets that can be electronically accessed through a data carrier like a QR code or RFID tag – are expected to accelerate the transition to a circular economy by improving the traceability of products within circular supply chains and facilitating their repair and reuse. Existing research on DPP focuses on technical aspects such as data requirements, design criteria and (data) governance arrangements. Limited attention, however, has been given to the factors that drive or hamper firms' adoption of DPP, beyond regulatory pressures. This research aims to fill this knowledge gap by investigating the opportunities and challenges related to DPP implementation as described by different actors in the innovation ecosystem (e.g. policymakers, consultants, early adopters). We collected and thematically analyzed official documentation provided by the EU or related actors, newspaper articles and information material on DPP produced by consultancies and other business (support) organizations. Our results show that benefits outnumber and are cited more often than barriers. Benefits for firms include compliance with upcoming regulation and easier reporting, enabling new circular business models and improving brand image and customer relationships. Barriers mostly relate to DPP design features and implementation hurdles. Our analysis also shows that all documents portray the expected benefits of DPP and we still lack the empirical evidence needed to evaluate whether the anticipated benefits and barriers match those experienced by (frontrunner) adopters and society at large.

## **Track 2.1**

### **Innovation and data-driven business models for sustainable transformation**

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#### **Holistically Assessing The Sustainable Digitalization Of Businesses: A Systematic Literature Review**

Van de Walle, Arjen;  
Aerts, Geoffrey  
Business Development Academy (BUDA), Vrije Universiteit Brussel, Belgium  
arjen.van.de.walle@vub.be

As businesses are increasingly pushed towards improving their sustainability performance, a second major industrial transformation is ongoing: the digital transformation of business, in which advanced digital technologies are radically reshaping business models. In light of these shifts, governments emphasize the necessity of 'twinning' both the sustainable and digital transformation of business, aligning them and avoiding excessive trade-offs. Despite the development of a myriad of assessment frameworks, tools, and guidelines to aid companies in improving their sustainability, frameworks for the holistic assessment of the sustainability of corporate digitalization, including the social dimension and potential negative impacts, are limited. This research provides a comprehensive overview of existing assessment frameworks or tools, and a characterization of the underlying logic, construction and instrumentalization. A systematic literature review is performed along PRISMA guidelines to obtain a reproducible view of the state of the art. Next, a classification of existing assessment strategies for the sustainable digitalization of business is provided, bringing insights into, among others, the applied framework metrics, the benefits and limitations of the frameworks, the applied view on sustainability, and the involved stakeholders in framework construction and execution. This research aims to guide academic efforts in constructing a holistic framework for viewing and improving the sustainability of the digitalization of businesses and will act as a strong conceptual basis for future research on the topic.

## Track 2.2

### Business model experimentation for circular economy: close, slow, narrow, regenerate

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#### Configuring Circular Business Models Strategies

Abadzhiev, Andrey (1);

Carlborg, Per (2);

Sukhov, Alexandre (1)

1: Karlstad University, Sweden;

2: Örebro University School of Business, Sweden

andrey.abadzhiev@kau.se

Research on circular economy (CE) provides insight into the different components of circularity transitions, but often falls short of offering a more holistic view of strategy implementation and managerial guidance. The aim of this study is twofold: first, to understand how firms implement specific CE strategies in practice and second, to identify specific business model innovation activities related to these strategies. Our research was conducted on the Swedish wood construction industry, which draws attention to its circular technologies and practices. Our data consisted of open- and closed-ended questions from 35 senior managers and CEOs in the construction value chain regarding the relevance of implementing different CE principles to their perception of high circularity. The data were analyzed using fuzzy set qualitative comparative analysis (fsQCA) to uncover strategies (i.e. combinations of CE principles) for high circularity. Our findings reveal and explain four strategies towards circularity: a) The value chain steward, b) The circular product developer, c) The waste watcher, and d) The holistic resource organizer. The findings also identify specific CE principles that enable BMI activities critical for the CE transition. Such BMIs go beyond the mere integration of circular technologies, highlighting the importance of using sufficiency-based principles to develop viable circular business models.

## **Track 2.2**

### **Business model experimentation for circular economy: close, slow, narrow, regenerate**

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#### **Value Creation for Consumers in Circular Business Models**

Gustafsson, Ellen;  
Forsslund, Elin;  
Kyttälä, Roope  
School of Business, Economics, and Law, University of Gothenburg, Sweden  
ellen.gustafsson@gu.se

Despite the importance of system thinking in circular business model (CBM) research a crucial key actor in the circulation of products have been overlooked, consumers. To consider consumer behaviours, preferences and wants is crucial as consumer actions and responsibilities change in response to changed consumption patterns when consuming circular offers. The design of an adequate value proposition that create value for the consumer is a necessity for a CBM to remain in operation. Despite this, research on consumers' attitudes and acceptance of circular offerings remain scarce. Further, the research on the implementation of circular economy within businesses has to a large extent focused on the upstream processes of production. Thus, this article aims to contribute to the agenda of CBM by connecting consumer behaviour to the CBM literature by describing how value is created for, and offered to, consumers of CBMs. The results are based on empirically collected data on Swedish B2C CBMs. The results emphasise that value propositions in CBMs are dominated by non-sustainability and non-circular related characteristics. Additionally, the results show that firms, in the design of CBMs, consider both hedonic and utilitarian values provided to consumers, such as convenience, uniqueness, and price. The differentiation between hedonic and utilitarian values is additionally utilised to identify reasons for a product's obsolescence. Causes of obsolescence highlight opportunities for CBM experimentation and innovation. The results emphasise the need and opportunity for the research field to consider a more complex view on consumer value creation in CBM experimentation.



## Track 2.2

### Business model experimentation for circular economy: close, slow, narrow, regenerate

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#### Circular Business Model Patterns for Wind Turbine Blades Recycling

Ibarra, Dorleta (1);

F. Mendoza, Joan Manuel (1,2)

1: Mondragon Unibertsitatea, Faculty of Engineering, Mechanics and Industrial Production, Loramendi 4, Mondragon 20500 Gipuzkoa, Spain;

2: IKERBASQUE, Basque Foundation for Science, Plaza Euskadi 5, 48009 Bilbao, Spain  
dibarra@mondragon.edu

In the forthcoming years, a significant increase in the number of wind turbine blades reaching their end-of-life phase is projected. The wind industry faces a critical imperative to prioritize the recycling of these aged blades, prompting an urgent need for logistical and technological solutions encompassing disassembly, collection, transportation, waste management, and reintegration into the value chain. This endeavor necessitates the development and implementation of circular business models and value chains. Stakeholders within the wind industry require guidance, practical insights, and compelling evidence to embark on the adoption of circular business models and value chains. This article aims to develop a set of business model patterns that integrates both industry-specific cases and generic circular economy strategies to guide actors in the wind industry in the ideation and design of business model alternatives for the end-of-life of wind turbine blades. This article aims to develop a practical circular business model innovation tool (in the form of business model patterns) that integrates both industry-specific cases and generic circular economy strategies to guide actors in the wind industry in the ideation and design of business model alternatives for the end-of-life of wind turbine blades. The methodology entails a comprehensive literature review addressing existing circular business model patterns and specific real-life cases concerning the End-of-Life value chain of WTBs. Drawing from the outcomes, a set of circular business models patterns will be delineated. These results will support companies in the sector to benchmark and devise novel, more circular, and sustainable business models and value chains.

## **Track 2.2**

### **Business model experimentation for circular economy: close, slow, narrow, regenerate**

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#### **Sustainable Business Models for Advancing the Electric Vehicle Industry in Kazakhstan: A Review**

Kogabayev, Timur (1,2);  
Alibekova, Baldyrgan (3)  
1: M.Narikbayev KAZGUU University, Kazakhstan;  
2: University of Tartu;  
3: Tallinn University  
kogabayev@kazguu.kz

This extended abstract explores the academic discussion on sustainable business models in the electric vehicle (EV) industry, with a specific focus on its applicability to the distinctive circumstances of Kazakhstan. Kazakhstan, despite facing challenges such as inadequate infrastructure and low consumer knowledge, has a favourable position due to its substantial renewable energy resources and strong dedication to sustainable development. The abstract examines international case studies to identify key success criteria for sustainable business models, with a particular focus on the significance of supportive legislative frameworks and strong public-private partnerships.

The recommendations proposed for Kazakhstan involve a range of methods designed to accelerate the adoption of electric vehicles, improve the accessibility of charging infrastructure, and promote research and development efforts. More precisely, promoting the adoption of electric vehicles, extending the infrastructure of charging stations, and allocating resources to technological advancements are suggested as crucial paths for progress. Moreover, it is considered essential to promote cooperation among government entities, business participants, and educational establishments to facilitate the shift towards sustainable transportation in Kazakhstan.

Kazakhstan may expedite its progress towards sustainable transport by adopting these guidelines and cultivating collaborative relationships. This would not only protect the environment but also drive economic advancement. By implementing coordinated initiatives and calculated interventions, Kazakhstan has the potential to establish itself as a leader in the worldwide endeavour to achieve sustainable transport, resulting in significant environmental and economic benefits.

## Track 2.2

### Business model experimentation for circular economy: close, slow, narrow, regenerate

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#### Message In A Bottle: Experiments On Sustainability Labeling Of Wine

Kohn, Rieke Sophie  
Norwegian School of Economics (NHH), Norway  
rieke.kohn@nhh.no

Wine producers and retailers are experimenting with so-called climate-smart packaging. Such sustainability characteristic, however, may adversely influence consumers' purchases of such wine. In this study, we investigate how sustainability characteristics in wine packaging influence consumers' purchase intention and real purchase behavior. We combine insights from a survey, a lab-in-the-field experiment, and two field experiments. In Study 1, we analyze survey data and interviews with Norwegian wine consumers to shed light on drivers and barriers of the consumption of wine on climate-smart packaging. In Study 2, we investigate the effect of using either binary positive (green-none) or graded (green-yellow-red) sustainability labeling on the intention to purchase wines on climate-smart packaging. In Study 3 and 4, we investigate these two labeling schemes in field experiments carried out in collaboration with the large Norwegian retailer Vinmonopolet. We analyze behavioral changes in terms of wine purchases before and after the introduction of binary (Study 3) and graded sustainability labeling (Study 4). Our preliminary findings show that labeling sustainable wines can be positively associated with consumers' inclination to choose such wines over others. Opposing the previous literature, we find a positive effect on sustainable consumption through binary labeling and a negative effect on unsustainable consumption through graded labeling. The potential translation of the effect into real behavior is yet to be analyzed (work in progress).

## **Track 2.2**

### **Business model experimentation for circular economy: close, slow, narrow, regenerate**

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#### **Beyond Sufficiency – Moving towards Regenerative Business Models**

Kropfeld, Maren (1);  
Gossen, Maike (2);  
Pakizer, Katrin (3)  
1: Tomorrow University of Applied Sciences, Germany;  
2: TU Berlin, Germany;  
3: ZHAW School of Management and Law, Swiss  
maren@tomorrow.university

The escalating climate crisis demands more than “doing no harm”. While sufficiency models in circular economies reduce consumption, they fall short of addressing larger issues. Regenerative business models emerge as a promising alternative, aiming for net positive impact on ecosystems and communities. This study explores conceptual elements differentiating and/or linking sufficiency and regenerative business models and aims at finding solutions to how regenerative business models can overcome the limitations of sufficiency-based business models.

Our literature review study employs a comparative analysis, analyzing the literature on sufficiency and regenerative business models. The search strategy includes searching in bibliographic databases with a theory-driven search string.

Analyzing the literature, we expect to identify a shift in guiding principles. Sustainability’s focus on minimal negative impact evolves into regenerative principles like net positive impact, symbiotic embeddedness, and co-evolutionary adaptation. This necessitates changes in value proposition, creation, and capture. Sufficiency models offer reduced consumption, while regenerative models actively restore and improve well-being through innovation and systemic change, potentially employing diverse value capture mechanisms beyond traditional means.

Regenerative models offer a promising path towards a more sustainable and equitable future. By understanding their distinctions, embracing necessary shifts, and overcoming implementation challenges, businesses can contribute to aligning economic prosperity with environmental and social well-being.

Further research is crucial to explore diverse applications and refine measurement tools. As we move forward, the potential of regenerative business to drive positive change is undeniable, offering a blueprint for a future where businesses can truly be a force for good.

## Track 2.2

### Business model experimentation for circular economy: close, slow, narrow, regenerate

#### Circular Business Model Experimentation In The Solar Industry

Nyffenegger, Roger (1,2);

Baldassarre, Brian (3);

Bocken, Nancy (1,4);

Grösser, Stefan (2)

1: Maastricht Sustainability Institute, Maastricht University, Maastricht, Netherlands;

2: School of Engineering and Computer Science, Bern University of Applied Science, Biel, Switzerland;

3: Joint Research Centre, European Commission;

4: International I

roger.nyffenegger@bfh.ch

The imperative for a systematic transition from the unsustainable linear economic model to a circular economy is increasingly pressing. While the photovoltaic (PV) industry is playing a pivotal role in expediting the energy transition through its predominantly linear organization, it simultaneously confronts the emergence of new challenges, notably the proliferation of substantial waste volumes. Consequently, there arises a critical necessity for the development of novel, more sustainable business models (BM). However, effecting the transformation of these business models and their associated ecosystems is a multifaceted endeavour. While experimentation with business models can serve as a catalyst for this process, circular business models (CBMs) often encounter formidable obstacles on their path to market adoption, particularly when necessitating cross-organizational collaboration within ecosystems. This paper adopts a case study methodology with an action research approach. Collaborating with eight Swiss organizations in the “Swiss PV Circle” project, the authors aim to experiment with CBMs in pilot projects focused on the reuse of PV modules. Initial findings illuminate the technological feasibility, encompassing requisite skills and partner networks, as well as the considerable circularity potential for prolonging the product lifecycle and niche desirability for specific customer segments. However, the viability aspect presents a challenge, as prevailing market prices for new PV modules currently render entry into reuse BMs less promising. Subsequent pilot projects seek to explore non-financial value proposition aspects to enhance viability. This paper contributes empirically to the literature on circular strategies within the PV industry and theoretically advances the discourse on CBM experimentation.

## **Track 2.2**

### **Business model experimentation for circular economy: close, slow, narrow, regenerate**

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#### **Bridging Sustainability: The role of the Intermediary in Industrial Symbiosis**

Palagonia, Chiara (1);  
Cotterlaz-Rannard, Gaelle (2);  
Mattelin-Pierrard, Caroline (3)  
1: LUMSA, Italy;  
2: University of Sussex Business School;  
3: University Savoie Mont Blanc, IREGE  
c.palagonia@lumsa.it

Society is confronted with urgent sustainability challenges, encompassing global temperature rise, population growth, and resource scarcity. These challenges are prompting businesses to actively engage in ecological transition. Among the sustainable strategies, Industrial Symbiosis (IS) has emerged, drawing inspiration from the principles of the Circular Economy (CE).

Industrial Symbiosis entails collaboration among multiple companies, exchanging by-products, resources, and energy to mitigate the overall environmental impact. This dynamic establishes an industrial ecosystem, demanding in-depth analysis of roles and collaboration dynamics. In this context, the intermediary assumes a crucial role, facilitating collaboration among ecosystem actors, overcoming cognitive and geographical barriers, and promoting strategies for sustainable collaboration.

However, despite the existing literature emphasizing the crucial role of intermediaries in IS and their involvement in fostering cooperation and revaluation of waste, research on intermediaries in IS is still limited, particularly in understanding the motivations guiding their actions.

The paper seeks to address this gap by answering to this question: How do the motivations of intermediaries influence the dynamics of matching and trust among companies in Industrial Symbiosis? The research aims to adopt a qualitative case study methodology, conducting interviews with actors in specific Italian industrial ecosystems, each featuring a distinct symbiosis case and corresponding intermediary.

## Track 2.2

### Business model experimentation for circular economy: close, slow, narrow, regenerate

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#### A Critical Discussion of Business Model Strategies for Closing the Gap Between Recycled Textiles and New Feedstocks.

Ricard, Lykke Margot (1);

Andersen, Kirsti (2);

Mikkelsen, Xenia (1);

Harsaae, Malene (3);

Bang, Anne Louise (3)

1: University of Southern Denmark, Denmark;

2: Royal Danish Academy, Denmark;

3: VIA University College, Denmark

Lmri@iti.sdu.dk

This paper opens a critical discussion of the textile and fashion industry's current focus on textile-to-textile recycling as a solution to positive sustainable impact and explores how experimentation in a local R&D factory may support the implementation of regenerative business models. The research engages the industry partners of the READY project as context, an R&D partnership that aims to establish a small-scale new material test factory in the Danish realm to close the knowledge gap between linear and circular business models. The paper specifically investigates current approaches of circular economy business models, and further explores opportunities in interdisciplinary and collaborative experimentations for reducing and slowing material and value loops.

## **Track 2.2**

### **Business model experimentation for circular economy: close, slow, narrow, regenerate**

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#### **Sustainable Business Model Innovation of an Emerging Country Startup: An Imprinting Theory Perspective**

Roshan, Ravi;  
Balodi, Krishna  
Indian Institute of Management Lucknow, India  
phd21028@iiml.ac.in

Sustainable Business Model Innovation integrates environmental and social value with economic value. Using Organizational Imprinting Theory and drawing on a qualitative, in-depth single case study of an Indian startup, we observe the impact of entrepreneurs' sustainability values (pro-environmental and pro-social values) on sustainable business model innovation. The study shows how the founders' sustainability values imprint the startup business model through structural and cognitive imprinting routes. Further, we trace three key sources of these imprints that generated sustainability values in the startup founder. The study offers a set of propositions regarding how startup firms achieve sustainable business model innovation and which sources imprint sustainability values on entrepreneurs. The study contributes to the research literature on the concept of sustainable business model innovation in an emerging country context and the empirical application of Organizational Imprinting Theory to Sustainable Business model innovation.



## Track 2.2

### Business model experimentation for circular economy: close, slow, narrow, regenerate

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#### Towards Regenerative Product And Service Design. Framing Mindsets And Opportunities For Designers

Selvefors, Anneli;  
Renström, Sara  
RISE, Sweden  
anneli.selvefors@ri.se

It is no longer enough for businesses to strive to reduce their environmental impact. Recent literature argues that business models, and the product and service offerings that are part of them, must aim to improve planetary and societal wellbeing through regeneration. However, how to approach business model experimentation, and in particular the creation of product and service offerings, with a regenerative mindset is still underexplored. This paper therefore explores how designers can move towards creating regenerative products and services. It is based on an analysis of available scientific literature, but also grey literature, product and service examples and other initiatives. The analysis resulted in an initial framework for designers of regenerative products and services. First, seven foundations for regenerative products and services are presented. For each foundation, key shifts for designers are discussed to highlight what it takes to move from a degenerative mindset to a regenerative mindset. In addition, three opportunities for product and service designers are outlined; designing products, services and product-based systems that restore nature, harmonise with nature, and enable humans to co-evolve with nature. Design strategies are devised for each opportunity, drawing inspiration from existing examples. The initial framework presented in this paper can be a starting point for exploring regenerative product and service design as part of regenerative business model experimentation.

## **Track 2.2**

### **Business model experimentation for circular economy: close, slow, narrow, regenerate**

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#### **Technologies, Business Models, Corporate Strategy And Mobility Battery Swap Systems: Economic And Sustainability Comparisons**

Wells, Peter Erskine (1);  
Wang, Liqiao (2)  
1: Cardiff University, United Kingdom;  
2: Shandong University, China  
wellspe@cardiff.ac.uk

Business model innovation has long been considered important in the creation and delivery of more sustainable mobility services, most notably with product-service system offerings in, for example, ride sharing schemes. In parallel, such schemes and service system offerings typically include technological innovations around electrification and various ICT / App enabled interfaces between users and the wider system. In some, but not all, mobility applications the limitations of batteries and charging networks have been ameliorated by the development of battery swap systems. This paper explores the relationship between emergent mobility technologies, business model innovation, corporate strategy, and the specific duty requirements of distinct applications using rechargeable batteries. It is argued that the prevailing status quo dominated by traditional incumbents is expressed through technology trajectories that reinforce existing mobility behaviours resulting in reduced sustainability benefits. While some niche applications have been and remain attractive for battery swap systems, their continued use is in doubt. In this regard, we explain outcomes to be a consequence of (reduced) business model innovation in incumbent-dominated socio-technical transitions. For companies engaged in battery swapping, we argue that there is an accentuated need for dynamic capabilities to enable business model innovation if the application context changes.

## Track 2.3

### Rural community-led business models

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#### Place-Based Tensions in Local Manufacturing Business Models

Andersen, Kirsti Reitan (1);

Pedersen, Esben Rahbek Gjerdrum (2)

1: Royal Danish Academy - Architecture, Design, Conservation, Denmark;

2: Copenhagen Business School

kian@kglakademi.dk

The study examines how place-based organisational tensions manifest themselves in the context of local textile and fashion manufacturing. Based on interviews with owners and/or managers from Norwegian textile and fashion companies, the study identifies three main categories of place-based tensions: 1) Mission: Belonging versus Performing; 2) Spatial: Belonging versus Organizing; 3) Competence: Belonging versus Learning. Moreover, the study identifies four interrelated coping strategies used by actors to tackle place-based tensions and strengthen the position of local manufacturing in the global fashion industry. The findings contribute to the literature by identifying key place-based tensions linked to local manufacturing business models and the steps taken by actors to address these oppositional demands in everyday organisational practices.

## **Track 2.3**

### **Rural community-led business models**

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#### **Multilayer Dynamics Of Rural Area Development**

Hatipoglu, Burcin (1);

Ertuna, Bengi (2)

1: University of New South Wales, Australia;

2: Bogazici University, Turkiye

b.hatipoglu@unsw.edu.au

This study explores the government's involvement in facilitating social innovation in a rural area. It questions whether a co-designed business model with a broad range of stakeholders can be implemented with the government's leadership. In doing so, the study adopts a perspective of business models in which value creation happens with and for stakeholders (Freudenreich et al., 2020). While considering the contextual issues, the study aims to identify the factors affecting a business model's progress.

## Track 2.3

### Rural community-led business models

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#### **Developing Forestry-Based Bioeconomy: Drivers And Barriers From European And Spanish Policies.**

Muñoz Arenas, Camilo;  
Avilés Palacios, Carmen  
Universidad Politécnica de Madrid, Spain  
camilo.munoz.arenas@upm.es

Societies are transitioning towards new models where sustainability is the guiding vector. Bioeconomy has become an essential tool in this transition, allowing the substitution of fossil-based resources or traditional polluting processes with more nature-based products or solutions. But, to do this, entrepreneurship and innovation are needed. Nevertheless, for certain sectors like the forestry industry or forestry bioeconomy, in which complexity is a limiting factor, we need to clarify the different ingredients of this complexity in order to develop entrepreneurship, or even entrepreneurial ecosystems that could help to increase innovative products. This paper provides a comprehensive view of the different political factors that are limiting or pushing the development of entrepreneurship and innovation related to the forestry bioeconomy.

## **Track 2.3**

### **Rural community-led business models**

#### **Bridging the Digital Divide in Rural Europe: A Morphological Box to Support the Innovation of Collaborative Business Models for Rural Digital Services**

Oukes, Tamara (1);  
Gilsing, Rick (1);  
Kerstens, Andrea (1,2)  
1: TNO;  
2: Delft University of Technology  
rick.gilsing@tno.nl

There is an urgent need for new business models to bridge the digital divide and provide connectivity access and digital services to rural areas in Europe. Current business models suffer from insufficient return on investment, hindering broadband infrastructure deployment and impeding the deployment of digital services. Moreover, concerns regarding trust for and reliability of digital services, as well as general low population density in rural settings, further complicate the viable roll-out of digital services in these settings.

To overcome these challenges, our research emphasizes the development of collaborative business models that cultivate collaboration between stakeholders and foster value co-creation across economic, social, and environmental dimensions to support the deployment of digital services in rural settings. Accordingly, the resulting models consider the wider ecosystem of stakeholders to leverage value creation opportunities, as well as take into account how digital services can support wider value capture.

We introduce a morphological box tool to help organizations in innovating their collaborative business models, featuring eight components crucial to consider to support the deployment of rural digital services. We have iteratively developed and applied this tool through action design research, involving Living Labs focused on the deployment of digital services as part of a European project.

Our study contributes towards research on connectivity provisioning, supporting the innovation of business models to support the acceleration of connectivity penetration. It offers insights for telecom and technology providers on how to establish viable business models in collaboration with rural stakeholders in areas with limited connectivity.



# SUSTAINABLE BUSINESS MODELS FOR THE DIGITAL, GREEN AND INCLUSIVE TRANSITION



## THEME 3. EXPLORING THE ORGANISATIONAL IMPACT



## **Track 3.1**

### **Sharing economy business models for sustainability: design, functioning and impacts**

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#### **Why Not To Own Rather Than To Share? A Cross-sector Analysis Of Consumption Regime Switch For The Sharing Economy**

Grieco, Cecilia (1);  
Michelini, Laura (2);  
Maruotti, Antonello (3)  
1: Sapienza Università di Roma;  
2: LUMSA University;  
3: LUMSA University  
cecilia.grieco@uniroma1.it

The purpose of the research is to shed light on sharing economy consumers post-sharing behaviour to understand whether using sharing platforms could actually lead to a regime switch in consumption. The concept of regime switch raises the issue of consumers' long-term behaviour, drawing the attention towards the ownership concept and questioning whether it is going to be superseded because of the sharing economy. Despite of great relevance for both academic and practitioners, the topic has received scant attention so far, with a focus on the mobility industry. To fill this gap, a cross-sector investigation has been performed, collecting data through a questionnaire administered to a sample of 400 respondents. The analysis of the results through the regression analysis will shed light on the variables behind the regime switch, whether it happens because of the sharing economy and how it is configured in the different industries involved in the analysis.



**Track 3.1****Sharing economy business models for sustainability: design, functioning and impacts****Effect of Fashion Rental Services on Achieving 'Narrow and Slow' Consumption in Clothing**

Kimita, Koji;  
Tsurusaki, Yudai;  
Amasawa, Eri  
The University of Tokyo, Japan  
kimita@tmi.t.u-tokyo.ac.jp

This study explores the impact of casual wear rental services on environmental outcomes, aiming to discern if these services can lead to reduced clothing purchases. Through a consumer behavior experiment in Japan involving 22 participants over three months and a subsequent questionnaire survey with 1,310 respondents, the research examines changes in purchasing behavior and the durability of clothing ownership. Preliminary findings indicate that rental services may decrease purchase volumes but do not significantly alter the total amount of clothing owned, due to a faster cycle of replacing clothes among users. The study suggests that while fashion rental services have potential for reducing new clothing purchases, their effectiveness in promoting long-term environmental sustainability through reduced production and consumption requires further investigation.

## **Track 3.1**

### **Sharing economy business models for sustainability: design, functioning and impacts**

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#### **Understanding Gen Z Attitudes and Behavioral Intentions Toward Food-sharing Apps**

Michelini, Laura (1);  
Rinallo, Elena (2);  
Scopelliti, Massimiliano (3);  
Pisoni, Alessia (4)  
1: LUMSA, Italy;  
2: LUMSA, Italy;  
3: LUMSA, Italy;  
4: University of Insubria  
l.michelini@lumsa.it

Food-sharing platforms are becoming increasingly popular due to their ability to enable digital connection between suppliers and beneficiaries of edible food, while having social impacts related to reducing waste. This study aims to analyze the main psychosocial drivers of GenZ consumers' use of food sharing apps within the theoretical framework of Theory of Planned Behavior (TPB) and of Technology Acceptance Model (TAM). Structural Equation Model (SEM) analysis on 1077 questionnaires shows a positive association between food waste concern and attitude towards the use of food sharing apps. All the relationships proposed within TPB were also significant with reference to food sharing apps; these results extend previous research on TPB applied to understanding technology adoption.

## Track 3.1

### Sharing economy business models for sustainability: design, functioning and impacts

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#### Consumer Preferences in The Circular Economy: A Conjoint Analysis

Štangová, Radmila  
Masaryk University, Czech Republic  
444052@mail.muni.cz

Despite the potential of the circular economy to contribute to sustainable development, challenges to its adoption remain. Consumers and their engagement are a crucial part of the issue, and the need to gain insight into their decision-making is even greater in Central European countries, which are at an earlier stage of a circular transition compared to many Northwestern European countries. This study aims to explore consumer preferences for different circular economy strategies (renting, refurbishment, maintenance) and their combinations, using the case of a washing machine. A choice-based conjoint survey experiment was conducted on a representative sample of the Czech population. The study addresses the question of how preferences for a product-service configuration differ according to the ownership context, the role of appearance in the case of refurbished products, and whether the presentation of information on positive environmental impacts influences consumer acceptance of refurbishment.

## **Track 3.2**

### **Management and accountability for sustainable business models**

#### **Accounting and Partnerships for Poverty Alleviation in Energy Transition Business Models: A Comprehensive Review and Future Research Plan**

Di Vaio, Assunta;  
Zaffar, Anum  
Parthenope University of Naples, Italy, Italy  
anum.zaffar001@studenti.uniparthenope.it

The increasing demand of stakeholders regarding a balance between profit, planet and people urges firms to develop rapid energy transition. However, the energy transition is a crucial process to address environmental challenges and to promote sustainable energy resources supported by new technologies adoption in the decarbonization processes. The growing institutional pressure sheds light on numerous initiatives to integrate the pillars of environmental, social and economic stability for sustainable business models. However, integrating the social dimension to design sustainable business models for emission reduction and to achieve profits remains a widely debated issue in theory and practice. Specifically, profit and poverty are the main issues that have not been easily aligned in their history and even in the energy transition process. Therefore, supported by corporate social responsibility framework and stakeholder theory, the aim of this study is to provide a systematic literature review (SLR) and a concise bibliometric analysis from 1990 to 2023 to identify the linkages between decarbonization processes for reducing emissions, profit, and poverty alleviation (SDG#1) for business models towards the energy transition by focusing on True Cost Accounting and Carbon Accounting to reconcile the needs of SDG#1 and profit for Energy Transitions Business Models. This study also consider the role of partnerships (SDG#17) as a key resource in the business models for meeting SDG#1.

## Track 3.2

### Management and accountability for sustainable business models

#### Driving Sustainability: Insights from a Multiple Case Study on B2C Product-Service-Systems

Grüll, Anja (1);

Kovacic-Lukic, Mariana (1);

Huber, Bastien (2);

Ambros, Felix (2);

Holly, Fabian (1)

1: Vienna University of Economics and Business, Austria;

2: Thinkubator - Verein zur Forschung und Umsetzung nachhaltiger Lösungen

anja.gruell@wu.ac.at

The prevailing linear economy significantly contributes to climate change, prompting alternatives like the circular economy, which aims to eliminate the “end-of-life” concept and foster sustainable development. While businesses increasingly adopt circular business models (CBM), recent studies show that adopting a CBM does not necessarily lead to positive environmental impacts. Notably, product-service systems (PSS) stand out among CBMs for their potential to drive the CE transition while ensuring economic profitability. PSS emphasize access and outcomes over ownership, reducing resource use and waste generation. However, there is no singular optimal approach. Businesses need to implement a combination of activities tailored to their contexts to ensure both profitability and a positive environmental impact. By conducting multiple case studies across multiple sectors and different PSS types, this research seeks to gain a deeper understanding of how circular businesses shape organizational activities to enhance competitiveness aligned with sustainability goals.

Drawing on the resource-based view (RBV), dynamic capabilities (DC), and contingency theory (CT), the study identifies the competencies essential for PSS businesses within their contingencies. It explores how these businesses can develop necessary capabilities to align with their unique contexts and examines the role of external factors in the organizational transformation process. The study’s results will serve as the foundation for a comprehensive framework, offering valuable insights into risk mitigation, scalability, and strategies applicable to PSS businesses. By exploring the necessary capabilities to overcome practical challenges and integrating context-dependent, evidence-based theories, this research aims to bridge the gap between academic conceptualizations and real-world practices.

## **Track 3.2**

### **Management and accountability for sustainable business models**

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#### **What It Takes To Go Circular? Managerial Capabilities For Incumbent Circular Business Model Innovation**

Johnson, Emma (1);

Kaipainen, Jenni (2)

1: The International Institute for Industrial Environmental Economics (IIIEE), Lund University, Lund, Sweden;

2: Tampere University, Faculty of Management and Business, Unit of Engineering and Industrial Management, Tampere, Finland

emma.johnson@iiiee.lu.se

While the circular economy has been recognized as an important pathway to achieve sustainability goals, incumbent companies have been slow to implement circular principles due to various organizational challenges. Incumbents require various capabilities to enable circular business model innovation (CBMI) and the radical transformation processes it requires. While prior research has begun exploring dynamic capabilities (DCs) for CBMI, further empirical evidence is needed to understand how capabilities are managed in different contexts of CBMI, how they differ in phases of CBMI transformation, and how organizational microfoundations influence the overall development of managerial capabilities. Through a longitudinal case study of an incumbent company experimenting with CBMI, we contribute empirical evidence to managerial capabilities and their microfoundations needed for CBMI. We build a preliminary conceptual framework of step-based and overarching capabilities for CBMI and related microfoundations. Our research contributes to management theory and practice by finding what managerial capabilities are needed, when, and how they are built from microfoundations during a CBMI process in incumbent firms.

## Track 3.2

### Management and accountability for sustainable business models

#### **The Effect of Digital Leadership on Innovative Work Behavior of Vietnamese Enterprises Employees: The Role of Employee's Digital Literacy**

Le, Linh Thi My (1);

Nguyen, Do Huy (2);

Nguyen, Chi Ha (2);

Pham, Linh Thao (2);

Truong, Minh Ngoc (2)

1: Faculty of Business School, National Economics University, Hanoi, Vietnam;

2: Students at Business School, National Economics University, Hanoi, Vietnam

nghuydo.neu@gmail.com

As businesses globally transition into the digital era, digital leadership emerges as a crucial driver of innovation. A combination of leadership skills and digital technology characterizes digital leadership. This study explores the impact of digital leadership on the innovative work behavior of employees in Vietnamese enterprises, highlighting the mediating role of employees' digital literacy. Qualitative and quantitative research methodologies were employed, including in-depth interviews with six management-level personnel and five employees and surveys with 446 employees in various regions in Vietnam. The findings underscore the direct positive influence of digital leadership on innovative work behaviors. Moreover, employee's digital literacy significantly mediates this relationship, suggesting that digitally literate employees are better positioned to translate digital leadership into innovative outcomes. This study contributes to the understanding of digital leadership's role in promoting innovation in the digital age, especially in the context of Vietnamese enterprises. The insights gleaned from this research provide practical implications for businesses in Vietnam and similar contexts, emphasizing the need to cultivate digital leadership and enhance employee digital literacy to spur innovation and competitive advantage in a rapidly evolving digital landscape.

## **Track 3.2**

### **Management and accountability for sustainable business models**

#### **Procuring Sustainable Values In Public Institutions**

Lingegård, Sofia;  
Bustamante, Maria  
KTH Royal Institute of Technology, Sweden  
sofia.lingegard@abe.kth.se

Public procurement plays a pivotal role in fostering sustainability and innovation within societies. This paper focus on the strategic significance of public procurement, particularly in promoting sustainable development and market evolution. Despite its potential, the prevailing focus on lowest price as the primary selection criterion poses challenges to realizing sustainable goals. The European Union's Green Deal emphasizes sustainability values beyond mere environmental impact. However, achieving these objectives necessitates a fundamental shift in procurement processes towards evaluating sustainable value creation comprehensively.

The study examines the procurement processes surrounding sustainability-oriented innovation, specifically modular vertical farming solutions, chosen for their potential to address environmental, social, and economic concerns. Drawing empirical evidence from procurement cases in healthcare and educational sectors in the Netherlands and Sweden, respectively, the research investigates the values considered during procurement, handling of multi-category solutions, and strategic positioning by suppliers.

Findings reveal challenges in aligning procurement strategies with broader organizational goals, particularly regarding category management and the evaluation of non-measurable sustainability values. The complexity of assessing innovations beyond conventional metrics like price or carbon footprint underscores the need for evolving procurement frameworks to encompass diverse value dimensions.

This paper contributes to understanding the dynamics of procurement in public organizations transitioning towards sustainability-oriented practices. It underscores the necessity for adaptive procurement strategies and organizational alignments to effectively incorporate sustainability considerations into procurement decisions. By shedding light on these complexities, the study lays the groundwork for refining procurement practices to better support sustainable business models, thus facilitating broader societal transitions towards sustainability.



## Track 3.2

### Management and accountability for sustainable business models

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#### Empowering Sustainability: A Tailored Support Program for Swiss SMEs

Pavlova, Pavlina Aneva;  
Daub, Claus-Heinrich  
University of Applied Sciences and Arts Northwestern Switzerland  
pavlina.pavlova@fhnw.ch

Small and medium-sized enterprises (SMEs) in Switzerland encounter significant challenges in integrating sustainability into their operations. Internal obstacles like a lack of orientation and limited resources, compounded by external factors such as the absence of tailored standards, hinder progress. This paper presents a support program by the University of Applied Sciences Northwest Switzerland (FHNW) and the Aargauische Kantonal Bank (AKB) aimed at catalysing sustainability efforts within SMEs. The program leverages research on the importance of committed top management and past pioneering activities to foster strategic sustainability and green innovation. It offers tailored interventions in strategic setting, knowledge sharing, communication, and partnerships. Utilizing customized questionnaires and expert coaching, SMEs formulate and implement sustainability strategies aligned with their goals. Workshops and storytelling enhance sustainability communication, while networking opportunities facilitate collaboration. Initial results show promising progress, particularly in strategic alignment and communication. Challenges remain in addressing environmental and climate issues. Continued long-term measurement and expanded support offerings hold promise for driving systemic shifts in SME sustainability performance. This paper provides insights into the effectiveness of tailored support mechanisms, paving the way for future initiatives to bolster sustainable practices in the SME sector.

## **Track 3.2**

### **Management and accountability for sustainable business models**

#### **Ecosystem Approach and New Business Models for Sustainability: a Systematic Literature Review**

Perna, Giuseppe (1);  
Varriale, Luisa (2)  
1: CONSULTING AGENCY;  
2: UNIVERSITY OF NAPLES 'PARTHENOPE', Italy  
luisa.varriale@uniparthenope.it

Throughout recent decades, two main phenomena have been affecting our world. Firstly, any organisations in any industry are paying an increasing attention to the sustainability phenomenon, trying to perform by meeting the UN Agenda 2030 with the sustainable development goals (SDGs), considering all the dimensions (environmental, economic, and social) of the sustainability. Secondly, the advancement and spread of digital and smart technologies have significantly modified organisational settings, creating new challenges to be faced, but also new opportunities for the entire community, in terms of making organisations, much more innovative, attractive, and sustainable. In this scenario briefly described, the ecosystem approach, as a management method in which land, water, and living resources are integrated to favour the conservation and sustainable use of natural resources, can play a crucial role. In practice, all parts of an ecosystem are connected, so each part needs to be considered. The ecosystem approach strategy can be considered a valid and effective measure towards the conservation of biodiversity and consequently the overall environment.

In this paper, starting from the analysis of the concept of the ecosystem, we then focus on the environmental aspect of biodiversity with the ecosystem approach, which provides a new management strategy to promote the conservation and sustainable use of natural resources.

This paper consists of a conceptual study which provides a bibliometric analysis (period 1930-2023) for analysing and summarising the most relevant contributions in the literature and in practice on the phenomenon investigated, that is the ecosystem approach and sustainability within organizations.

## Track 3.2

### Management and accountability for sustainable business models

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#### Sustainability Strategy, Tools and PMS in Agri-food Business: a Case Study from Italy

Riso, Vincenzo;  
Cantele, Silvia  
University of Verona, Italy  
vincenzo.riso@univr.it

The agri-food sector is undergoing a profound evolution, driven by international and national policies to make it more sustainable. Companies in the industry have significant impacts from both an environmental and social point of view along the entire value chain, from agricultural production to trade.

Useful performance evaluation requires adopting a performance measurement system (PMS), especially considering the impact of the practices adopted on the business model. Although financial key performance indicators (KPIs) have been widely explored, those related to the business model's sustainability have been neglected. Furthermore, impact indicators, such as GRI standards with materiality assessment, are also required for non-financial disclosure purposes.

This study aims to fill this gap through an in-depth case study of a company operating in the agri-food processing, with a particular interest in the agricultural industry upstream of the value chain. The company under consideration is a sustainability-oriented benefit corporation that has started publishing sustainability reports and has developed a sustainability plan with objectives and KPIs identified for proactive monitoring.

Drawing on a qualitative approach, this study considers primary (open interviews) and secondary sources (sustainability reports and website disclosure). The preliminary results show how the company gradually introduced tools for sustainability strategy implementation and how PMS evolved correspondently.

## **Track 3.2**

### **Management and accountability for sustainable business models**

#### **Strategy Deployment for Sustainability Transitions: A Case Study and Theoretical Perspectives**

Roche, Katharina E. (1);

Baumgartner, Rupert J. (1,2)

1: Department of Environmental Systems Sciences, University of Graz, Graz, Austria;

2: Christian Doppler Laboratory for Sustainable Product Management in a Circular Economy

katharina.roche@uni-graz.at

Businesses in sustainability transitions represent complex and long-term transformations towards more sustainable modes of production and consumption. This short paper addresses the challenges faced by businesses in integrating sustainable practices. The paper explores the implementation of strategy deployment for sustainability, emphasizing its role in the change process within the context of sustainability transitions.

For this, a case study was conducted with a medium-sized Austrian logistics company, which included participant observations and interviews. Further, theoretical lenses were combined and applied to the case study. These perspectives include Lewin's change model, dynamic capabilities view, stakeholder theory, and systems theory.

The case study results illustrate the practical implementation of strategy deployment for sustainability transition within the chosen company. It discusses the varying degrees of sustainability integration across departments and employee levels, highlighting the importance of a common understanding of sustainability's relevance. The theoretical perspectives applied offer insights into the implementation of strategy deployment for sustainability. The results also demonstrate the role of these perspectives in different stages of the change process for sustainability, providing insights into unfreezing, moving, and refreezing processes of Lewin's change model.

The paper contributes to understanding the process of strategy deployment for sustainability transition, stressing the need for an integrated overview of organizational contexts and dynamics, stakeholder relationships, and dynamic capabilities. While acknowledging the limitations of a single-case study, the research provides support for businesses aiming towards sustainability. It also indicates support in implementing sustainable business models and overcoming the design-implementation gap for sustainable business model innovations.

## Track 3.2

### Management and accountability for sustainable business models

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#### The Role of Sustainability Governance in Corporate Sustainability Planning: Analysis of an Italian Case Study

Valcozzena, Silvia;  
Riso, Vincenzo;  
Cantele, Silvia  
University of Verona, Italy  
silvia.valcozzena@univr.it

This study aims to map the main emerging positions within sustainability governance, highlighting their roles and responsibilities in the sustainability planning process. In addition, the steps involved in developing a sustainability plan are described.

Through a qualitative approach, an in-depth case study of an Italian firm that is very active in sustainability issues is analysed. This analysis will highlight the process of developing a sustainability plan and the main governance positions involved in this process. Through the triangulation of different sources (interviews, external and internal company documents), it was possible to answer these two research objectives. Specifically, interviews were conducted with key positions in the firm regarding their roles and responsibilities in sustainability and those who make up the governing body.

From an initial analysis, it was possible to identify the positions and the main actions and decisions taken by governance regarding the definition of the sustainability plan. The next steps involve an even more in-depth analysis of the business case to map all the critical elements that influence the process of integrating sustainability into corporate strategies.

## **Track 3.2**

### **Management and accountability for sustainable business models**

#### **Who Thinks Managing the Circular Economy is Difficult? A Comparative Analysis of Different Managerial Perspectives in Circular Startups and Incumbents**

Van Opstal, Wim (1,2);

Mejia Velez, Maria del Pilar (1,3);

Manshoven, Saskia Maria (1)

1: VITO NV, Belgium;

2: Maastricht Sustainability Institute, Maastricht University, the Netherlands;

3: Copernicus Institute of Sustainable Development, Utrecht University, the Netherlands

wim.vanopstal@vito.be

“A circular economy lacking a business model” has been compared earlier as “a vehicle with no driver at the steering wheel”. In this study, we investigate how different drivers at this steering wheel perceive managerial difficulties in operating a circular business. We use original survey data from 117 businesses in Flanders (Belgium) that can be considered as frontrunners or early adopters of circular economy strategies. We assess differences in barriers, enablers, and support needs and ask respondents which managerial aspects they consider easier, similar, or more difficult in a circular economy compared to a linear business. These managerial aspects include core operations, such as product development, procurement, production, and logistics, as well as supporting operations, such as finance, marketing and sales, corporate governance, and HR management. We assess differential perspectives of startups and incumbents, and compare perspectives of owners, board members, CEO’s, management professionals, and staff members. We connect these empirical insights with the body of knowledge on managerial aspects of circular business models in general, and existing literature on circular startups and incumbents in particular. This study is relevant for entrepreneurs, investors, and professionals who try to understand why they face certain barriers and challenges compared to their counterparts in other role positions or company types that aim for similar circular economy strategies. It also informs policymakers, incubators and accelerators that aim to support businesses in their transition into circularity. Finally, our work may contribute to understand perceived cultural differences between startups and incumbents that aim to collaborate.

## Track 3.3

### New business models in times of crisis

#### Liminal Spaces and Human-Centred Design (HCD) for Resilient Business Models

Atxa Gamboa, Ariane (1);

Iriarte Azpiazu, Ion (1);

Legarda Gabiria, Iker (1);

Hoveskog, Maya (2)

1: Design Innovation Center, Faculty of Engineering, Mondragon Unibertsitatea;

2: Department of Engineering and Innovation, School of Business, Innovation and Sustainability, Halmstad University

aatxa@mondragon.edu

In today's intricate business landscape, characterised by volatility and uncertainty, organisations encounter numerous external challenges. In this context, the concept of liminality offers a unique perspective on organisational transition, fostering environments conducive to reflection and exploration. Liminal spaces, which often correspond to strategy workshops, provide environments for experimentation and innovation, facilitating the co-creation of solutions. While theoretical exploration of liminality is extensive, practical insights on facilitating liminal workshops are lacking. Human-Centred Design (HCD) has proven effective in facilitating organisational change through co-creation practices. Therefore, in this study we propose the hybridisation of HCD co-creation practices and liminal spaces for facilitating organisational change.

## **Track 3.3**

### **New business models in times of crisis**

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#### **What Constitutes as a Sustainable Banking Business Model?**

Bjartmarz, Thordis Katla  
Copenhagen Business School, Denmark  
tbj.msc@cbs.dk

The banking sector, despite distrust, scandals and image issues, plays a vital role in achieving sustainability goals and agendas such as the UN Sustainable Development Goals. Sustainability requires capital flow, investments and redistribution of money and wealth, which is at the core of the banking sector. However, the general distrust in the sector, and the constant pressures to change, in form of social, environmental, and regulatory pressures, the banking sector needs to rethink their business model. Through a literature review, this study analysis 61 papers on banking and sustainability, with the aim of unfolding what constitutes a sustainable banking business model and construct a conceptual model for the sector. The study aims to identify key attributes of a banking business model, despite the complexity of the sector and variety of banks, and with it carve out the similarities that may become a banking business model and identify the differences between this framework and other sustainable business model frameworks in literature. With this conceptual framework, the paper further aims to identify key managerial implications for banks to unpack their value as sustainable organizations and key players and contributors in developing and supporting global and local sustainability agendas. Finally, the paper will suggest avenues for future research areas of sustainable business models and sustainable banking literature to advance the research in the respective fields.



## Track 3.3

### New business models in times of crisis

#### Navigating the Digital Territory of Work: Unveiling Trends and Concepts in Technological Mobility

Fraga, Aline Mendonça (1);

Scherer, Laura Alves (2);

Macke, Janaina (3);

Miri, Daniel Hank (4)

1: Federal University of Paraná, Brazil;

2: Federal University of Pampa, Brazil;

3: University of Caxias do Sul, Brazil;

4: University of Caxias do Sul, Brazil

alinemf.adm@gmail.com

This extended abstract aims to discuss this new and challenging context for research and organizational practice, which we refer to as the digital territory. Given that it is a recent and, therefore, not yet consolidated discussion, our objective is to analyze the scenario of scientific production on digital mobility to identify concepts, trends, and research possibilities. A systematic literature review was conducted in the Scopus and Web of Science databases, specifically in management, business, and social sciences. The articles were organized maintaining the following information: year, authorship, author affiliation, title, abstract, keywords, and journal. Subsequently, we conducted the selection and analysis of the relevant articles in five stages. The abstracts of the thirty-five selected articles were statistically analyzed using the software Iramuteq/Alcest, version 2015. The articles identified span from 1999 to 2022, highlighting the contemporary nature of the discussion on technological mobility as a topic of the new millennium. Preliminary analyses currently allow us to indicate that this discussion holds potential for organizational literature and implies interdisciplinary contributions with various knowledge areas. We can also affirm that the digital territory represents an imperative for new business models and challenges organizational practice in times of crisis, especially in the context of post-COVID-19 work. Digital mobility indicates the construction of a fresh territory for work marked by conceptual and practical ambiguity: it is simultaneously a desire, a representation of greater freedom, proximity across distances, flexibility, and sustainability, but also a field of doubts, deregulation, and precariousness of work and sociocultural distancing.

## **Track 3.3**

### **New business models in times of crisis**

#### **Cooperative Business Models for Data Sharing in Construction Industry. Data cooperatives: data-sharing ecosystems and federated learning**

Iwanczuk-Prost, Malgorzata  
Wageningen University and Research, Netherlands, The  
malgorzata.iwanczuk@wur.nl

The transition from a linear to a more circular economy calls for several novel factors to be in place and for innovation related to processes, business models and products yielding more circular resource use. Innovative paths can be challenging due to a variety of reasons, including cross-organizational cooperation for innovation.

Research is needed on how firms approach the transformation, especially related to factors such as: digitalization and technology, infrastructure and collaboration, resources and capabilities and managing the transition towards new circular solutions. Circular economy is a widely accepted concept that could contribute to the transformation towards sustainable future and address global challenges. Technological innovations often dominate the field of circular economy. While some technological innovations and digital solutions facilitate inter-organizational collaboration and cooperation, they also come with their own limitations and challenges, like high energy consumption.

Collaborative business models and new forms of (data) governance relying on digital technologies such as generative AI, Web3, blockchain-based DAOs and open-source collectives offer inspiring models of collective organization with an additional community approach.

Cooperatives, as autonomous associations, are a powerful economic and social force that can also benefit the environment. Many of them have been innovators and proved their resilience and abilities to survive and thrive during periods of social and economic strife. The cooperative model turns out to be highly flexible and promising in meeting new challenges of inclusive sustainability transition as well as developments towards trust-based governance, knowledge sharing and boosting innovation in a construction industry or other traditional sectors.

## Track 3.3

### New business models in times of crisis

#### Resource-Based View On Frugal Innovations; Frugality-based Advantage To Build And Sustain A Value-based Venture.

Kraaij, Albert;  
Evangelista, Agnes;  
Poldner, Kim  
The Hague University of Applied Science, Netherlands, The  
a.kraaij@hhs.nl

This study contributes to the concept of Frugal Innovation (FI). FI aims to create more value using fewer resources, often employed in resource-constrained settings, such as developing nations. Building and analysing a unique dataset of FI's, this research focuses on how Small and Medium Enterprises (SMEs) can use FI to tackle two key challenges: overcome resource constraints and resource overuse, thus adding to societal sustainability. The study identifies two main criticisms of FI: a lack of theoretical foundation and an insufficient empirical link to sustainability. To address these gaps, this study uses two approaches: the Resource-Based View (RBV) of the firm as a theoretical foundation and the Sustainable Development Goals (SDGs) to link FI to sustainability. The research question proposed is: "What are the approaches and conditions for small businesses to create multiple values from resource constraints?" The goal is to contribute to the recent concept of Frugality-Based Advantage (FBA) by operationalising the conditions and approaches for value creation. Using a meta-synthesis, we collate case studies of SMEs' Frugal Innovations. Starting at the inception of the concept, we analysed academic literature spanning more than a decade. To perform a quantitative content analysis, we used dichotomous questions to build a coding scheme that represents the phenomenon of FBA. We conclude with a table of conditions and approaches in which a Frugal Innovation is able to create and sustain two forms of value: financial for SMEs and SDG value for society.

## **Track 3.3**

### **New business models in times of crisis**

#### **Embedding Circular Economy Goals in a Smart Grid Cooperative Model**

Van Opstal, Wim (1,2);

Bocken, Nancy (2);

Brusselaers, Jan (3)

1: VITO NV, Belgium;

2: Maastricht Sustainability Institute, Maastricht University, the Netherlands;

3: Institute for Environmental Studies, VU Amsterdam, the Netherlands

wim.vanopstal@vito.be

While being acknowledged for its contribution to the Sustainable Development Goals, the proliferation of renewable energy causes an upcoming waste problem and creates new geopolitical vulnerabilities due to reliance on a very limited number of countries for critical raw materials. Therefore, it is relevant to study circular economy strategies for renewables. To make a circular economy work, however, we should ensure participation of all members in society, enhancing resilience of both communities and businesses. While cooperatives played an important role in resolving societal problems while ensuring participatory and distributive justice, research on their role in a circular transition remains scarce. In this paper, we conduct interviews with stakeholders of a Belgian smart grid project and assess how a cooperative model can integrate circularity goals into smart grid governance. Smart grids are a sociotechnical system that may increase community resilience by reducing power outage risks and ensuring access to renewable energy for various community groups. To the best of our knowledge, no research has been published earlier on governing circularity goals in smart grids. Preliminary results on the circular economy strategies involved include improved rethink, repair, and reuse strategies. However, reuse markets for renewable energy generation have been shown to be incomplete and insufficiently mature for deployment in the smart grid. Our study highlights the risk of mission drift in smart grid cooperatives if circularity goals are not embedded in their governance design. We discuss managerial and policy implications of our findings, giving attention to practical barriers, enablers, and pitfalls.

## Track 3.4

### Assessing and managing the sustainability performance of business models

#### New Accounting Frontiers and Circular Business Models: Evidence from an Italian Company

Almici, Alex;  
Camodeca, Renato  
University of Brescia, Italy  
alex.almici@unibs.it

The natural environment's depletion (e.g. climate change, losses of natural resources, the greenhouse effect, air, land and water pollution) has required firms to revise their business models according to sustainability and circular economy conditions, enabling the enhancement of multidimensional results (both economic and non-economic).

The development of such business models requires the introduction of new assessment techniques aimed at measuring and reporting the firm's impacts on the environment and local community. Traditional accounting (namely, financial accounting) is considered inadequate for assessing the environmental and social firm's impacts, as they are based on the linear economy model, which is unsuitable to measure non-economic effects.

This research aims at verifying how circular assessment techniques can contribute to the implementation of circular business models, by enabling the measurement of firm's ecological impact.

To achieve this goal, a case-study analysis is performed by focusing on an Italian company – Feralpi Group – operating in the “hard to abate” sector, as steel producer. The main findings demonstrate that circular assessment techniques (in particular, the Life Cycle Assessment) can actually drive the development of circular business models aimed at mitigating the ecological impact and enhancing the economic performance. However, the accounting change is a cumulative process over time that is usually performed gradually.

## **Track 3.4**

### **Assessing and managing the sustainability performance of business models**

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#### **Sustainable Business Models Assessment: what are the social dimensions?**

Bertassini, Ana Carolina;  
Baumann, Henrikke  
Chalmers University of Technology  
anabertassini@gmail.com

This paper explores integrating social dimensions within Sustainable Business Models (SBMs) assessments. While SBMs are instrumental in steering production and consumption toward sustainability, their assessment often overlooks significant social impacts, especially in labor-intensive sectors. The research identifies key social dimensions in SBMs through a literature review, focusing on different stakeholders' values & expectations, desirable outcomes, and social impacts along product and value chains. The study analyzed nineteen papers, revealing that most assessments do not apply quantitative tools for social impact measurement. Instead, they either utilize Life Cycle Assessment (LCA)-based approaches with a general consideration of social dimensions or employ qualitative social indicators. This highlights the need for more robust, quantitative methodologies for evaluating the social aspects of SBMs. Key social dimensions identified include diverse stakeholders' values and expectations, the desirable outcomes for these stakeholders, the social impacts within products and value chains, human rights and labor standards, and socially oriented innovations. The research underscores the complexity of these dimensions, noting the varying expectations and perspectives among different stakeholders, including employees, customers, investors, and local communities. The paper emphasizes the urgency of integrating social measurement in SBM performance evaluations, advocating for a balanced approach that encompasses environmental, economic, and social sustainability. This comprehensive approach is crucial for sustainable business practices, ensuring that advancements in one area do not compromise others. The study proposes a framework for understanding these dimensions and calls for future research to develop more effective tools and methodologies for social impact assessment in SBMs.

## Track 3.4

### Assessing and managing the sustainability performance of business models

#### Do 360-Degree Assessments in Sustainable Impact Forecasting add value? A Case Study

Cagarman, Katharina (1);

Fajga, Kristina (2);

Markosyan, Davit (1);

von Kolpinski, Charleen (1)

1: Chair of Entrepreneurship and Innovation Management, Technische Universität Berlin, Germany;

2: Centre for Entrepreneurship, Technische Universität Berlin, Germany

kristina.fajga@tu-berlin.de

The study addresses the crucial yet under-explored area of sustainability impact measurement within startups, recognizing their pivotal role in driving positive social and environmental change. It introduces the early-stage Sustainable Return on Investment (esSROI) tool, specifically designed to comprehensively assess sustainability-related impacts throughout the initial phases of startup development. With a focus on 360-degree assessments, the research aims to investigate whether such assessments can significantly enhance the modeling of sustainable business practices within the startup ecosystem.

Employing a mixed-method approach, the study combines quantitative data analysis from 23 startups with qualitative insights gleaned from semi-structured interviews. Quantitatively, standardized surveys are administered through the Leapsome platform, allowing for both self-assessment by startup team members and external evaluations by business coaches and sustainability experts. This comprehensive approach provides a nuanced understanding of the sustainability impact landscape within startups, revealing variations in evaluations among different stakeholders and shedding light on potential biases inherent in the assessment process.

Complementing the quantitative findings, qualitative interviews offer deeper insights into the implementation and perception of sustainability impact measurement. They unveil the intricate interplay between sustainability considerations and entrepreneurial endeavors, elucidating both the challenges encountered and the opportunities unearthed in integrating sustainability into startup business models. Ultimately, the study contributes to advancing the discourse on sustainability in entrepreneurship by introducing an innovative measurement tool and exploring its efficacy in enhancing sustainable practices within the startup ecosystem.

## **Track 3.4**

### **Assessing and managing the sustainability performance of business models**

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#### **Improving the Environmental Performance of Climate Start-ups**

Candia, Juan Ramon;  
Ball, Peter;  
Huaccho, Luisa  
university of york, United Kingdom  
jr.candia@york.ac.uk

This research presents Business Models (BM) developed by entrepreneurial firms that use digital technologies (Digital Climate Start-ups or DCS) as a core element of their environmental value proposition (EVP) to tackle climate change (CC). It seeks to contribute to the literature on Stakeholder Theory, as it provides new insights on the natural environment as a key stakeholder, extending the stakeholder value creation (SVC) framework proposed by Freudenreich et al. (2020). The research question addressed in this paper is: How can digital climate start-ups improve their value proposition for the natural environment as a key stakeholder?

This research is based on the analysis of 27 companies that emerged as a response to the business opportunities derived from CC, where the main source of data was semi-structured interviews with CEOs, founders or high-level executives of firms providing services to diverse sectors, from agriculture, to financial services, and from different sizes (large, SMEs, and micro).

The cross-case comparison showed that for most of the studied companies the environment is a key stakeholder, as their value offering is built around objectives of climate change (e.g., biodiversity protection, ecosystems restoration, CO<sub>2</sub> sequestration, energy efficiency, improved water management, etc.), thus proposing an extended Stakeholder Value Creation Framework for Business Model Analysis (SVC Framework), and five attributes considered essential to improve the value creation potential of DCS (the need for a joint purpose with focus on the natural environment and CC, identifying and managing unintended consequences, science as enabler, measuring climate impact (climate hypothesis), and information transparency).



## Track 3.4

### Assessing and managing the sustainability performance of business models

#### Exploring the Applicability of Business Model Life Cycle Assessment - Wind Turbine Blade End-of-life Management: Repurposing, Recycling and Co-processing

Espinos, Adriano (1);

Ibarra, Dorleta (2);

F. Mendoza, Joan Manuel (2,3)

1: Technical University of Madrid, Pº Juan XXIII 11, Madrid 28040, Spain.;

2: Mondragon Unibertsitatea, Faculty of Engineering, Mechanics and Industrial Production, Loramendi 4, Mondragon 20500 Gipuzkoa,;

3: IKERBASQUE, Basque Foundation for Science, Plaza Euskadi 5, 48009 Bilba, Spain

jmfernandez@mondragon.edu

This conference paper explores the barriers and opportunities for the practical application of the BM-LCA framework to analyse and compare the environmental and economic sustainability performance of two alternative business models for the end-of-life (EoL) management of wind turbine blades (WTBs): i) WTB-based cement co-processing to produce green clinker and ii) green fibre reinforced concrete production. These WTB-EoL management business models are recognized for their advanced Technology Readiness Level (TRL), providing robust cases for investigation. Special attention is placed on understanding how the interactions (resource flows and value exchange) between different processes, stakeholders and business models within each WTB-EoL scenario can be defined, analysed and interpreted by applying the method. As a result, barriers, opportunities and practical guidelines for the application of the BM-LCA framework within this industry are provided.

## **Track 3.4**

### **Assessing and managing the sustainability performance of business models**

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#### **Guiding startups towards Circular Business Models: A multi-criteria evaluation tool**

Ibarra, Dorleta (1);

Arregui, Ane (1);

Igartua, Juan Ignacio (1);

Retegi, Jabier (1);

F. Mendoza, Joan Manuel (1,2)

1: Mondragon Unibertsitatea, Faculty of Engineering, Mechanics and Industrial Production, Loramendi 4, Mondragon 20500 Gipuzkoa, Spain;

2: IKERBASQUE, Basque Foundation for Science, Plaza Euskadi 5, 48009 Bilbao, Spain  
dibarra@mondragon.edu

The circular economy represents a key paradigm for sustainable transition, driving increased adoption of circular business models by companies. However, transitioning to circular models poses significant challenges, particularly for startups, due to their novelty and limited resources. Understanding the sustainability impacts of circular business models is crucial for entrepreneurs, yet startups often lack historical data for assessment. Ex-ante assessment tools can aid startups in making informed decisions during the transition from linear to circular models. This article, aims to develop a structured decision-making tool for startups to evaluate and prioritise circular business models based on sustainability and circularity indicators. Following a multi-criteria decision-making approach, the research entails systematic literature review, tool development, and validation. The results seek to contribute to the field of circular business model innovation tools and sustainable business model assessment by providing an accessible tool for startups and SMEs. By identifying indicators and utilising empirical data, the tool assists in evaluating and comparing circular business model alternatives, catering to the needs of new ventures and SMEs lacking resources or historical data for assessing sustainability impacts.

## Track 3.4

### Assessing and managing the sustainability performance of business models

#### How Much Sustainability is Not Embodied in Business Models?

Juin, Corentin (1);

Georget, Valentine (2);

Rayna, Thierry (1)

1: Ecole polytechnique, France;

2: Université Côte d'Azur, France

corentin.juin@polytechnique.edu

Business models and sustainability are central to corporate strategy. Increased environmental consciousness and global ecological debates have led companies to integrate sustainability into their business models. This paper aims to assess the embodied sustainability of business models by analyzing three leading companies -Patagonia, Ikea, and Unilever- which top sustainability rankings. The research employed a qualitative literature review methodology, utilizing 38 references to develop a new theoretical framework. This framework was then applied to analyze web-scraped institutional content from the websites of these three companies. The findings reveal that although a company may have an impactful presence, it does not necessarily ensure sustainability for the organization and its environment. Incorporating impact into business models presents both challenges and opportunities. It is crucial for addressing modern challenges but conflicts with established strategic imperatives, requiring a significant shift in paradigms. Future research directions include integrating interviews to supplement the data with internal perspectives and applying the theoretical framework on a broader scale to validate its cross-industry relevance. These efforts will provide valuable insights to academia, policymakers, and practitioners, promoting sustainable and impact-driven practices in the business sector.

## **Track 3.4**

### **Assessing and managing the sustainability performance of business models**

#### **Review Of Life Cycle Studies Of Business Models - Exploring The Diversity of Modelling Scopes And Their Significance**

Madhu, Kavya (1);  
Carolina Bertassini, Ana (2);  
Baumann, Henrikke (2)  
1: Albert-Ludwigs-Universität Freiburg, Germany;  
2: Chalmers University of Technology, Sweden  
kavyamadhu24@gmail.com

This study critically analyzes the consideration of business models (BMs) in Life Cycle studies. Recognizing that conventional business model tools, like the Business Model Canvas (BMC), often neglect environmental consequences, adaptations like the triple-layered BMC have attempted to integrate Life Cycle aspects. However, these adaptations fall short in fully assessing the relationship between BMs and the entire product lifecycle. The research, conducted through a systematic narrative literature review following the PRISMA standard, scrutinizes 19 selected publications to understand how BMs are represented in LCA studies. It focuses on how different aspects of BMs are evaluated and the extent to which various life cycle approaches capture these elements. Findings indicate that most studies predominantly assess products rather than the broader BMs. The reviewed literature mainly covers sustainable BMs but the application of LCA is often limited to product-level impacts, neglecting the comprehensive BM perspective. Additionally, the functional units used in these studies are more representative of product functionality rather than the BMs themselves. The study reveals a gap in current LCA methodologies: they do not fully capture the complexities of BMs, often focusing on cost analysis while overlooking revenue or profitability aspects. Furthermore, consumer perspectives and relationships, crucial in BM assessments, are largely ignored. Concluding, there is a significant need for methodological advancements in LCA to assess BMs comprehensively. While the research provides an overview of existing methods, it underscores the necessity for further development to bridge the gap between BMs and product systems in environmental impact assessments.

## Track 3.4

### Assessing and managing the sustainability performance of business models

#### Measurement of Sustainable Practices in Small Organizations

Santucci, Marina Nieves (1);

Pietropaolo, Alisia (2)

1: UBA, UADE;

2: UNIMIB

cpmsantucci@yahoo.com

The influence of entrepreneurs' values and imagination on the purpose and procedures of the organization involves an important factor when designing policies and performance indicators. Managers that find the right balance between these influences and the strategic needs of the business will succeed in the implementation of best practices in a challenging environment for small entities.

This paper presents preliminary results of a project that has the objective to study sustainable practices and their monitoring preferences in small organizations in Argentina. Under a mixed methodology, with a descriptive and correlational approach, two surveys were conducted to managers and owners of 27 small entities with an in-depth interview in between, to also evaluate the influence of entrepreneurs' reflections of their original purpose and imagination in the changes of the responses.

Main results showed that, in general, environmental indicators are perceived as more important than social ones, and no significant changes were found in the responses of before and after the in-depth interviews, reflecting the strong convictions of the respondents. However, bivariate correlations showed lower level of importance of environmental indicators in the case "for profit" organizations and more importance of training indicator in the case of organizations with mission statements as a reflection of professional development.

## **Track 3.4**

### **Assessing and managing the sustainability performance of business models**

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#### **What Do We Know About The Climatic Impacts Of Product-Service Systems? Sharing Models Unpacked**

Sarasini, Steven (1);  
Bocken, Nancy (2);  
Diener, Derek (1);  
Velter, Myrthe (3);  
Whalen, Katherine (1)  
1: RISE Resaearch Institutes of Sweden, Sweden;  
2: Maastricht Sustainability Institute;  
3: Fontys Hogescholen  
steven.sarasini@ri.se

This paper examines the claim that product-service systems can result in radical reductions in environmental burdens (up to 90%). The study performs a systematic literature review peer-reviewed assessments of use-oriented PSS models that facilitate sharing. Our findings suggest that significant reductions are possible in some cases. However, the majority of the papers within our dataset indicate more modest reductions, with some studies showing increases in climatic impact. Additionally, we examine the key determinants of climatic emissions and discover that use intensity and use-phase transportation are the most frequently cited factors. We conclude by discussing the limitations of our study and implications of our findings in terms of future research opportunities.

## Track 3.4

### Assessing and managing the sustainability performance of business models

#### **Different Markets, Different Business Model Environmental Performance? Analysing a Novel Recycling Service for a Single-use Paper-based Product with Business Model LCA (BM-LCA)**

Solér, Björn;  
Sivengård, Fabian;  
Baumann, Henrikke  
Chalmers University of Technology, Sweden  
solerb@chalmers.se

This study presents another application of the recently developed business model LCA (BM-LCA) method for evaluating the environmental impacts of business models. A novel recycling service for a single-use paper-based product, launched by a multinational hygiene products company, is assessed with regards to its potential to decouple the company's business models around the product. A circular business model scenario, where the recycling service is scaled up, is constructed to compare this with the company's current linear business models. The BM-LCA employs real data on the monetary flows in the company's business models and on the flows of material and energy in the product systems.

The market dependency of the business model scenarios' environmental performance is analysed by setting these on the Swedish and German markets respectively. This market analysis is conducted through varying technical and economical parameters as to reflect differences in the company's own processes and the background system (i.e., energy and waste management systems) on the two markets. Additional sensitivity analysis with respect to said types of parameters is carried out to analyse what factors influence the business model scenarios' level of decoupling, and what this implies for their environmental performance on other markets. In conducting such a market analysis, the study addresses one of the proposed areas of further studies in the research field around BM-LCA. A literature search on the topic of market dependency of business models' environmental impacts suggests this issue composes a knowledge gap, which the case study may contribute to explore.

## **Track 3.4**

### **Assessing and managing the sustainability performance of business models**

#### **Sustainability Performance Of Rental And Sharing Models: A Life Cycle Assessment**

Verleye, Katrien (1);  
Antonissen, Lisa (1);  
Smeets, Anse (2);  
De Keyser, Arne (3);  
De Bruyne, Marie-Julie (1)  
1: Ghent University, Belgium;  
2: Flemish Institute for Technological Research, Belgium;  
3: EDHEC Business School, France  
Lisa.Antonissen@UGent.be

In a search for sustainability, customers, firms, and governmental bodies increasingly embrace the circular economy principles of regenerating natural systems and designing out waste. Yet, a circular economy also requires to keep products in use, especially since many products are most of the time left unused (De Bruyne & Verleye, 2023). To achieve this end, there is a need for businesses that offer services to increase the utilization rate of products, such as rental and sharing services. Nonetheless, recent research suggests that use-oriented product-service systems do not necessarily realize environmental and financial gains (Carlborg et al., 2023). Next to that, when incumbent or new businesses launch this type of use-oriented product-service systems and hence increase their level of servitization, they may be confronted with a lack of engagement among customers, suppliers, and governments (Fehrer et al., 2023; Verleye et al., 2024). Against this background, key questions revolve around (1) how use-oriented product-service systems affect the sustainability of businesses from an environmental and economic perspective and (2) the way in which businesses implement these initiatives circumvent these engagement issues in their ecosystems. To address these questions, this research relies upon multiple case study research. We select five businesses that participate in the Green Deal Renting & Sharing in Flanders, Belgium and perform a business model analysis and life cycle assessment study to compare the rental and sharing model with its retail-based counterpart in order to identify the boundary conditions under which renting and sharing is more sustainable than buying.





# SUSTAINABLE BUSINESS MODELS FOR THE DIGITAL, GREEN AND INCLUSIVE TRANSITION



## THEME 4. EXPLORING THEORETICAL AND METHODOLOGICAL FOUNDATIONS



## **Track 4.1**

### **New theoretical foundations of business models for sustainability**

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#### **An Appreciative Inquiry Into Sustainable Business Model Innovation**

Fabianke, Kyra  
Monash University, Australia  
kyra.fabianke@monash.edu

Considering the immense impact of the private sector on globally prevailing social and environmental issues, it is clear that businesses need to undergo fundamental change. As incremental change approaches are insufficient to address significant sustainability issues, there are increasing calls for transformative change such as through Sustainable Business Model Innovation (SBMI). While Sustainable Business Models (SBM) are recognised as among the best strategies to improve business sustainability there is a lack of insights on how exactly businesses can adopt SBMs. The understanding is even more limited in the case of small and medium-sized enterprises (SMEs) which are crucial for a more sustainable future. A unique change methodology is needed to explore and support this type of transformative organisational change while allowing for diversity of organisational member's lived experiences. This paper uses a conceptual research method paired with empirical data to propose Appreciative Inquiry (AI) as a new theoretical lens for the field of SBMI, drawing on a research study that applied AI as a framework to guide empirical research on SBMI. Semi-structured interviews based on AI's methodology were conducted with 30 SMEs in Australia. This facilitated generative interviews and insights into the often hidden capabilities and change-capacity of SMEs. This paper contributes a new lens to the growing body of research on SBMs by synthesising AI's theory of change with the concept of SBMI. Preliminary findings suggest AI's potential to provide a fresh perspective to explore and facilitate SBMI.

## Track 4.1

### New theoretical foundations of business models for sustainability

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#### Exploring Business Model Innovation for Sustainability through Affordance Theory

Grande, Simona  
Universitetet i Agder, Università di Torino, Norway, Italy  
simona.grande@uia.no

The integration of technology into circular economy models represents a transformative area in the field of Business Model Innovation for Sustainability (BMIFS), with Artificial Intelligence (AI) taking a central role. Focusing on Victoria, Australia—a region noted for its pioneering efforts in managing food waste—this study leverages Affordance Theory to explore how entrepreneurs perceive and interact with AI-driven opportunities for developing circular practices. This theoretical approach provides a robust lens through which the dynamic relationship between entrepreneurs and technology can be understood, emphasizing how personal and contextual factors shape the identification and exploitation of AI affordances in circular practices. The analysis delves into a spectrum of perceptions among entrepreneurs, which significantly influence their engagement with these innovative practices. It identifies key drivers (catalysts) that propel entrepreneurs towards embracing AI-enhanced circular models and uncovers critical barriers (inhibitors), which hinder their adoption. The emerging framework emphasizes the dynamic interplay between environmental affordances and the inherent contradictions within sustainable entrepreneurship, enriching the discourse on navigating these complexities for innovative business practices. The findings contribute insights into the facilitators and obstacles of sustainable entrepreneurial innovation, offering implications for policymakers and entrepreneurs alike.

## **Track 4.1**

### **New theoretical foundations of business models for sustainability**

#### **Decoding Circular Business Models: A Study of Terminological Foundations in Classification Schemas**

Izquierdo Montfort, Josep Oriol;  
De Rongé, Yves

Université catholique de Louvain, Louvain Research Institute in Management and Organizations, Belgium  
josep.izquierdo@uclouvain.be

In integrating different circular economy principles in their business model, companies implement a diverse array of strategic initiatives, resulting in a multitude of circular business models (CBMs). Academic research has sought to classify these models, developing various typologies and taxonomies, instrumental for theorisation and creating mid-level theories. This article conducts a critical review of academic research and identifies 32 distinct CBM classification schemas and 241 CBM classes. Our analysis reveals three common shortcomings impeding robust and effective classifications: (1) the use of unclear classification criteria, (2) the use of commonly used CBM terms with significant variations in meaning, (3) the inaccurate use of the terms 'taxonomy', 'typology' and other related terms blurring their distinctions. In addition, we contribute by providing a glossary with the 15 more frequent CBM terms, together with their definitions and relevant remarks, enhancing a shared understanding within the academic discourse. Finally, we propose a flexible classifier-centric model with 16 classification criteria allowing for the construction of different classification schemas depending on the classifier's aim. This article contributes to enhance the clarity, coherence, and applicability of CBM classifications and classes, ultimately facilitating a more comprehensive understanding of CBMs benefiting both research and practice, and proposing further research avenues.

## Track 4.1

### New theoretical foundations of business models for sustainability

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#### Values Perspective For a Sustainable Business Model Design

Kwasniuk, Matthieu;

Rayna, Thierry

i3-CRG, École polytechnique, CNRS, Institut polytechnique de Paris, Palaiseau

matthieu.kwasniuk-zelazny@polytechnique.edu

The imperative for sustainable business models (SBMs) in response to contemporary socio-environmental challenges emphasizes the pivotal role of values alignment among stakeholders. The use of conventional corporate-centric systems creates dissonance between individual and organizational values, a consequence of the prevalence of strategic management tools (SMTs) rooted in the industrial-era paradigm. Examples include Porter's five forces analysis which contributes to make cognitive dissonance by prioritizing margin and reducing competitors, going against contemporary values. This research explores the theoretical interplay between individual and collective values within organizational contexts, probing the necessity of values alignment to drive transformative shifts in organizational identity toward SBM design. A comparative analysis of SMTs and a review of their impact on organizational identities reveal a company-centric orientation reinforced by the use and teaching of outdated values through SMTs. The results indicate that to design SBMs, we need to deconstruct usual SMTs that foster social mechanisms restraining certain principles. We propose ethical exploration beyond classical SMTs, encouraging a focused approach to designing business models with particular attention to stakeholder representation, especially around discourse ethics, with rational exchange and mutual understanding in decision-making.

## **Track 4.1**

### **New theoretical foundations of business models for sustainability**

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#### **Propositions on an Emerging Circularity Logic**

Lauten-Weiss, Julian;  
Volkmann, Christine  
University of Wuppertal, Germany  
lauten-weiss@wiwi.uni-wuppertal.de

This article explores entrepreneurial decision-making in the context of the circular economy through an examination of circular entrepreneurship. Combining insights from a literature review and 28 interviews with circular entrepreneurs and ecosystem actors, the study delineates a circularity logic based on four propositions. This novel perspective diverges from conventional wisdom in entrepreneurial motivation, goal orientation, scope, and implementation strategies. The study identifies theoretical gaps in current circular business model research as well as in commonly-used management theories and proposes avenues for further theory development.

**Track 4.1****New theoretical foundations of business models for sustainability****Assessing Greenwashing Through The Unsustainable Business Model Archetypes**

Menendez Sanchez, Jaime

Orkestra - Basque Institute of Competitiveness (Deusto Foundation), Spain; Deusto Business School, Spain; University of the Basque Country UPV/EHU, Spain

[jaime.menendez@orquestra.deusto.es](mailto:jaime.menendez@orquestra.deusto.es)

The role of oil and gas (O&G) in today's global economy and its social implications represent a major challenge for achieving decisive sustainability advances. While O&G companies have developed large innovation capacities with unexploited potential for sustainability contributions, the O&G business is commonly pointed as suspected of greenwashing practices. Despite existing research on the greenwashing phenomenon, the focus on the O&G sector is fragmented and the topic lacks an own comprehensive review. This work presents a two-stage study in order to give response to this knowledge gap. The first part aims to provide a deep understanding of the greenwashing phenomenon in the O&G industry by carrying out a systematic literature review. In the second part of the study, the results of the literature review are discussed through the lens of the 'unsustainable business model' (UBM) archetypes. Finally, the discussion addresses the tradeoffs between the UBM and 'sustainable business model' (SBM) taxonomies. In particular, how renewable energy deployment requires increasing production and treatment of critical raw materials (CRM), which constitutes a capital question with deep sustainability and geopolitical implications, similarly to the role played by O&G resources in the last decades. This suggests a needed coexistence of SBM and UBM taxonomies that requires overcoming a greenwashing approach in order to adopt a wider perspective for understanding the complexity of this issue. One possibility proposed in this work is addressing this issue with the lens of a 'paradox' in corporate sustainability.

## **Track 4.1**

### **New theoretical foundations of business models for sustainability**

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#### **Low-Entropy Business Models: A Thermodynamic Lens on Sustainable Business in the Anthropocene**

Pasing, Philipp  
University of Wuppertal, Germany  
pasing@wiwi.uni-wuppertal.de

In an era marked by ecological crises unsustainable business practices are a significant concern, highlighting the need for a deeper understanding of how business models impact sustainability. This paper introduces a novel perspective by integrating thermodynamic principles, particularly the entropy law, to elucidate the complex relationships between business model activities and their outcomes on ecological systems. By viewing business models through a thermodynamic lens, I identify a dual nature of outcomes: the material dimension, which includes the tangible products and waste, signifying an increase in entropy and ecological degradation; and the immaterial dimension, which encompasses the fulfillment of human needs and societal well-being, offering value beyond tangible outputs.

This approach challenges conventional sustainability paradigms that often overlook the irreversible impacts of material throughput on natural capital. It advocates for a holistic framework that recognizes the critical dependence of business activities on a finite biosphere and their potential to either exacerbate or mitigate ecological entropy. In this context, business models can contribute to sustainability by either minimizing material outcomes for a given immaterial purpose or by maximizing need fulfillment within the constraints of fixed resources. The integration of thermodynamic insights offers a well-grounded vehicle to evaluate the environmental and societal impacts of business practices, providing a pathway towards business models that align with the principles of strong sustainability. This theoretical advancement enriches the discussion on business model activities, outcomes, impacts, and value, promising new insights into how businesses can operate within ecological limits while still fulfilling societal needs.



## Track 4.1

### New theoretical foundations of business models for sustainability

#### Paradoxical Tensions In Business Models For Sustainability

Pratt, Nadine;  
Suntrup-Andresen, Elisabeth;  
Westphalen, Jan;  
Dirksmeier, Marion  
FOM University, Germany  
nadine.pratt@fom.de

Business Models for Sustainability (BMfS) are ripe with paradoxical tensions resulting from ecological, social and economic demands (Hahn et al., 2015; Carmine & De Marchi, 2023; Van der Byl & Slawinski, 2015), e.g. striving for profit and for purpose, providing for investor interests and for stakeholder interests, short-term and long-term perspectives. This research seeks to better understand the inner workings of paradoxical tensions in BMfS as well as strategies to navigate these and resulting sustainability implications by applying a paradox lens (Lewis & Smith, 2022; Hahn et al., 2015). It is work in progress, which focuses on sustainable startups. The empirical research project started in April 2024 and runs (at least) until September 2024 in collaboration with Circular Valley, a German accelerator for circular BMfS operating worldwide. The research contributes to the field of BMfS (Bocken et al., 2014; Reuter & Krauspe, 2022) respectively to the field of sustainable business model (SBM)-patterns (Lüdeke-Freund et al., 2019a; Lüdeke-Freund et al., 2019b; Lüdeke-Freund et al., 2022; Remane et al., 2017) as well as to the field of paradox theory (Smith & Lewis, 2022; Smith & Lewis, 2011; Hahn et al., 2018) and paradoxical tensions (van Bommel, 2018; Van der Byl & Slawinski, 2015; Johnson, 2011; 2020; 2021). It does so by: a) identifying types of paradoxical tensions in specific BMfS (detective), b) analyzing the adoption of a paradox lens for addressing the tensions (i.e. paradoxical thinking/sensemaking) and c) exploring paradoxical strategies that actors use to navigate the tensions (response).

## **Track 4.1**

### **New theoretical foundations of business models for sustainability**

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#### **Circular Economy Through Living Community**

van Stam, Gertjan  
Windesheim University of Applied Sciences, Netherlands, The  
g.van.stam@windesheim.nl

This paper presents findings on the paradigmatic nature of business model development emerging from embedded, transdisciplinary research in a primarily linear economic context in the Netherlands. Reflecting on the author's critical ethnographic inputs from long-term operational research in a circular economic context and the sociological nature of community, new theory is proposed showing the paradigmatic matching of individuals and conglomerates with a linear economic outlook and persons and communities with a circular economic outlook. This research concludes that business models for a circular economy should be based on community perspectives, rather than individual outlooks, and presents an example showing what this could mean.

## Track 4.2

### Actor engagement in sustainable (circular) business models & circular ecosystems through design thinking and other practices

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#### The Impact of Information Campaigns and Regulations on the Adoption of Reusable Packaging Systems

Burkhardt, Robert  
Technical University of Munich, Germany  
robert.burkhardt@tum.de

Product-service-systems constitute a promising circular business model to address sustainability challenges in the packaging sector. However, user adoption and widespread diffusion of reusable packaging-as-a-service (PaaS) models remain limited, with less than 1% of takeaway food in Germany being served in reusable containers in 2022. Despite widespread support for PaaS systems, there is a noticeable lack of empirical evidence of effective strategies that encourage their adoption. To this end, this research examines two different interventions based on an extensive field data set from a leading digital PaaS system containing 15 million container transactions by 550,000 registered users across 15 countries from 2019 to 2023 and 25,981 restaurants participating in PaaS systems. Firstly, the study evaluates the impact of three information campaigns on (a) user adoption and (b) diffusion of PaaS systems, examining the dynamics of both consumers and restaurants within dual-sided platform business models. Secondly, this research assesses the effects of a German federal regulation, implemented on January 1, 2023, which requires food outlets to provide reusable containers as an alternative to single-use packaging. The study employs a quasi-experimental, difference-in-differences estimation to assess the effect on both consumer and restaurant sides by comparing changes in key outcome variables over time in treatment districts with matched control districts. The findings aim to enhance the understanding of user behavior in product-service systems within the circular economy and to inform businesses and policymakers about the effectiveness of the studied measures to promote the uptake of PaaS systems.

## **Track 4.2**

### **Actor engagement in sustainable (circular) business models & circular ecosystems through design thinking and other practices**

#### **Systemic Perspective In Process Models For Sustainability-oriented Business Model Innovation**

Dormeier, Christopher Thomas;  
Asghari, Reza  
Technische Universität Braunschweig, Germany  
c.dormeier@tu-braunschweig.de

Climate change and resource scarcity require companies and other stakeholders to operate more sustainably. The development of new sustainable business models can play a crucial role in achieving the necessary transformation. Business models for sustainability (BMfS) in general, and circular business models (CBM) in specific, generally describe the way in which companies create, deliver, and capture value within a broader system of stakeholders. Compared to traditional business models, BMfS and CBM are more interdependent and interconnected. This calls for a more systemic perspective in their development. In the literature, process models for business model innovation (BMI) have been discussed to describe the necessary steps from ideation to implementation of new business models. However, so far, no specific focus has been put on the consideration of systemic perspective in such process models. Therefore, we first conduct a systematic literature review to identify 27 existing process models for BMI in the context of sustainability. We then map the discussed process phases and synthesize them into a holistic process model for BMI for sustainability (BMIfS) consisting of 11 phases. Each phase is explained in detail by assigning relevant tasks and activities. Lastly, we identify activities relevant to the systemic perspective and discuss further potentials for a systemic perspective. The paper contributes to the growing literature on sustainability-oriented BMI, provides guidance for decision-makers, and offers a new research avenue by focusing on the systemic perspective of the underlying process.

**Track 4.2****Actor engagement in sustainable (circular) business models & circular ecosystems through design thinking and other practices****Out Of Sight, Out Of Mind, What The Companies Still Forget When Transitioning To A Circular Economy**

Dumon, Louise (1);

Beerten, Pieter (1);

Vuylsteke, Bert (1);

Ostuzzi, Francesca (1);

Hoveskog, Maya (2)

1: Ghent University, Campus Kortrijk, Department Of Industrial Systems Engineering And Product Design, Design.nexus;

2: Department of Engineering and Innovation, School of Business, Innovation and Sustainability, Halmstad University, Sweden

louise.dumon@ugent.be

Companies sometimes apply circular strategies envisioning an ideal scenario (Bocken et al., 2023; Dembek et al., 2023). While reality is out of control, context dependent, evolutionary (Ostuzzi, 2017). This creates a gap between what has been designed (ideal) and what really happens (reality).

This study aims to find blind spots in specific companies' cases concerning the real product "dynamics", "after gate". What information is out of sight, leading to overlooked sustainability impacts?

Three companies, designing and/or producing physical products in Flanders have been involved in a two-day design workshop. Researchers observed and analyzed the resulting outcomes of the observative stage of one of these companies to uncover missing information. The method is inspired by the annotated portfolio technique (Sauerwein, Bakker and Balkenende, 2018).

This study confirms that companies lack awareness of what happens "after gate".

In this study, we observed a blind spot that product "dynamics" (products gradual change, contextual changes, and changes in user behavior) are not mapped out, while it is in the nature of products to be changing (Ostuzzi, 2017). Not observing the change consequently means overlooking the sustainability impact of these "dynamics".

Future studies should aim at further discovering the blind spots companies might have on the "after gate" and real lives of their products, and therefore of the impacts created. Further research could investigate how designers can anticipate the change in product, context, and stakeholder within the circular economy, by for example designing open-ended (Ostuzzi, 2017).

## Track 4.2

### Actor engagement in sustainable (circular) business models & circular ecosystems through design thinking and other practices

#### Redesign The Circular Business Model For A Circular Innovation Ecosystem: An Embedded Case Study of The Dutch B2B Electronics Industry

Jiang, Meihui (1);

Dittrich, Koen (1,2);

Lemmens, Stef (1)

1: Rotterdam School of Management, Erasmus University, Netherlands, The;

2: Rotterdam University of Applied Sciences

jiang@rsm.nl

In response to global initiatives such as the European Green Deal and the Paris Agreement, industries are increasingly recognizing the imperative of transitioning towards circular economy (CE) principles. The waste generated from Electrical and Electronic Equipment (WEEE) underscores the urgent need for circularity in the electronics sector. This study aims to investigate the role of managerial decisions, supply chain practices, and business models in promoting sustainability and circularity within the B2B electronics industry.

Using an embedded case study approach, this research examines the existing Circular Business Models (CBMs) in practice within the Dutch microelectronics ecosystem and discusses the dominant drivers and barriers to circularity. Through 23 semi-structured interviews conducted with 17 stakeholders in the microelectronics value chain, this study identifies and analyzes different CBMs employed by companies and the factors influencing their adoption. The findings reveal a variety of circular strategies, including servitization, sustainable product design, reuse, repair, refurbishment, and recycling initiatives. Collaboration, information transparency, and balancing economic viability with circular objectives emerge as critical themes shaping the circular economy landscape.

Companies face challenges such as cost constraints, supply chain complexities, regulatory hurdles, and consumer behavior patterns. While companies demonstrate a commitment to circular practices, the delicate balance between environmental sustainability and economic viability underscores the complexity of circularity. The next step of this research will continue to explore how drivers and barriers influence the circular ecosystem establishment and refine the ecosystem roles of different stakeholders towards circularity.

**Track 4.2****Actor engagement in sustainable (circular) business models & circular ecosystems through design thinking and other practices****Service Design for Fostering the Transition to Circular Economy amidst Paradoxes**

Khitous, Fatima  
Oulu Business School, Oulu University, Finland  
fatima.khitous@oulu.fi

Sustainability is about “meeting the needs of the present without compromising the ability of future generations to meet their own needs” (United Nations, 1987). It relies on the three dimensions of profit, planet, and people. To unlock the possibilities of building sustainable societies and organizations, politicians, professionals, and scholars alike have been promoting the circular economy defined as “a regenerative economic system [...] to promote value maintenance and sustainable development” (Kirchherr et al., 2023, p.7). The transition to circular economy is sought to enable the creation of circular value – environmental, social, and economic values – as an alternative of the current value focused only on economic profit. This value requires the engagement of all systemic actors. However, recent research shows that the pathway to circular economy is characterized by many tensions and conflicting goals, which span across the individual, organizational, and system levels. These tensions are known as paradoxes. Paradoxes could result in actors ceasing their engagement in circular economy. As such, to avoid that these paradoxes result in paralyzing vicious cycles in the circular economy realm, it is crucial to understand how actors – specifically designers who usually lead innovations in the system – work on engaging actors - navigate paradoxes. Therefore, this research will explore how designers deal and navigate paradoxes, and therefore successfully engage with the transition to circular economy.

## Track 4.2

### Actor engagement in sustainable (circular) business models & circular ecosystems through design thinking and other practices

#### Tech Reborn: Unveiling the Fascination of Young Consumers with Refurbished Electronic Devices in New Zealand and the Influential Factors

Kularatne, Indrapriya (1);

Ho, Henry Wai Leong (2);

Haaker, Timber (3)

1: Otago Polytechnic Auckland International Campus;

2: Ferris State University;

3: Saxion University of Applied Sciences

henryho@ferris.edu

Electronic waste (e-waste) is the fastest growing solid waste stream in the world (United Nations, 2020). The objective of this study is to examine young consumers' purchase intention of refurbished electronic devices (REDs) and to provide guidance to stakeholders in the refurbishment sector to establish efficient practices that contribute to promoting a circular economy.

This study builds upon the scale developed by Ho and Haaker (2023) by making modifications to their questionnaire, which was originally used for a similar project conducted in the Netherlands. Ho and Haaker (2023) identified three factors that influence young consumers' purchase intention - 'environmental awareness', 'attitude', and 'social acceptance'. For each factor a number of statements were developed and used in a questionnaire as independent variables. A statement about purchase intention was added as dependent variable. In total, 156 young New Zealand consumers (YNZC) have completed the survey. The data collected indicates that, on average, these YNZCs' have a favorable perception of likeliness to purchase REDs in the near future. However, the data also show a large standard deviation, suggesting a substantial minority with less favorable perception of purchasing REDs. Furthermore, the Pearson correlation coefficient test reviews a positive correlation between YNZCs perceptions of the 'environmental awareness' factors and their intention to purchase REDs. However, the factors 'attitude' and 'social acceptance' have a higher positive correlation with purchase intention than the factor 'environmental awareness'. This can be used in marketing efforts to engage and attract prospective young consumers of REDs.



**Track 4.2****Actor engagement in sustainable (circular) business models & circular ecosystems through design thinking and other practices****Is Human-Centered Design Key To Product-Service Systems? A Reflection On 12 Case Studies**

Selvefors, Anneli (1);  
Whalen, Katherine (1);  
Sarasini, Steven (1);  
Bocken, Nancy (2)  
1: RISE, Sweden;  
2: Maastricht University, The Netherlands  
anneli.selvefors@ri.se

Basing the design of a PSS on user's needs and involving users in the development process is often highlighted as key to increasing PSS adoption. This extended abstract examines the extent to which Human-Centered Design (HCD) has been used in previously conducted PSS case studies. 12 case studies were included in the sample and analysed to determine whether HCD methods were described and, if so, how such methods were applied in practice. The results suggest that there are few published PSS case studies that specifically describe how companies work with HCD methods. The analysis nevertheless indicates that traditional approaches, such as collecting data through feedback forms, surveys and user testing, can contribute valuable input to PSS development and that co-design approaches can result in high-quality and innovative PSS offers. Given the limited sample size of this research, further investigation is needed to provide more evidence on how HCD can aid PSS development. Directions for future work include expanding the sample of case studies and conducting additional case studies. Such studies should focus on exploring how companies work and assessing the relationship between the use of HCD methods and PSS success, such as in terms of customer adoption and profitability. Future studies exploring whether HCD can improve the user experience and the sustainability potential of a PSS are also much needed.

## **Track 4.2**

### **Actor engagement in sustainable (circular) business models & circular ecosystems through design thinking and other practices**

#### **Creativity And Diversity As Regenerative Force: Foster Economic Transformation Through Arts- And Nature-based Research To Accelerate Regenerative Business Models**

Timmerman, Floor;  
Wakkee, Ingrid  
Amsterdam University of Applied Science, Netherlands, The  
f.timmerman@hva.nl

This project challenges traditional cognition-based research methods. While informative, they do not fully capture the complexity of economic transformation. This hinders our ability to support regenerative entrepreneurs in their journey toward a fair and sustainable economy. At AUAS Centre for Economic Transformation, our search for a more integrative approach to building new business models, led us to arts- and nature-based research.

We are intrigued by art- and nature-based research as a tool to integrate cognitive, emotional and practical elements (head/ heart/ hands). Our curiosity led us to the following research question: how can innovative methodologies that focus on lessons from the arts (creativity) and nature (diversity) help to enrich the understanding of economic transformation among researchers and entrepreneurs engaged in regenerative practices.

This study employs an action-oriented research approach, including progressive learning and reflective monitoring and evaluation. During workshops the researchers and entrepreneurs go outside and collect pieces of nature. With these materials they compose their own work of art. Participants, under guidance, step-by-step, 'engage in dialogue' with their artwork based on their own question, eventually experiencing (a direction to) an answer.

This project brings together researchers with expertise in the diverse fields of entrepreneurship, craftsmanship, co-ownership and economic ecosystems and entrepreneurs of regenerative practices. They emerge themselves in innovative research methods aimed at integrating head, heart, and hands to enhance diversity and creativity and enrich their understanding of economic transformation.

The presentation will be enriched by the work of Claudy Jongstra, a Dutch artist and regenerative entrepreneur.

## Track 4.2

### Actor engagement in sustainable (circular) business models & circular ecosystems through design thinking and other practices

#### Opportunities for Engaging Users in Co-design of Circular Offers Through Games

Whalen, Katherine A. (1);  
Selvefors, Anneli (1);  
Fransson, Alexandra (2);  
Fallahi, Sara (3);  
Renström, Sara (3);  
Nordenö, Hanna (3);  
Leivas, Matilda (1)

1: RISE Research Institutes of Sweden, Business Design, Sweden;

2: Department of Design Sciences, LTH, Faculty of Engineering, Lund University, Sweden;

3: RISE Research Institutes of Sweden, Technologies for Interaction, Sweden

katherine.whalen@ri.se

Previous research emphasises the importance of actor engagement in circular business model innovation processes. Both co-design and serious games have been advocated as approaches to engage with end-users. However, there is limited research focused on applying these approaches to circular business model innovation. This paper therefore explores the role users can play in co-design of circular business models and how games could be used to support such co-design. First, roles users can play in co-design of circular business models are identified through company interviews. Several characteristics for games that can support co-design of circular business models are then offered. Finally, four game concepts are presented to illustrate how games could facilitate co-design of circular business models.

The results suggest that by engaging with users in co-design, companies could gain insights which could serve as inputs to circular business model development. This includes learning about users' needs, preferences, and product use patterns. Users can also be invited to take part in ideating, testing, and validating existing and new products and services so that companies can identify opportunities for desirable and attractive offers. Furthermore, the differing directions of the presented game concepts show there are several ways to engage with users through game approaches. As the paper presents possible roles for users in co-design of circular economy and illustrates various ways this could be approached using games, the findings are expected to be relevant to researchers and practitioners who are interested to engage users in circular business model innovation.

## **Track 4.2**

### **Actor engagement in sustainable (circular) business models & circular ecosystems through design thinking and other practices**

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#### **Piloting Innovative forms of Nature-Based Learning in Business Schools: Shifting mindsets for regenerative futures and business models to emerge**

Wyss, Ananda (1);  
von Kutzschenbach, Michael (1);  
Hoveskog, Maya (2);  
Tell, Joakim (2);  
Khitous, Fatima (3);  
Norris, Nicole (4)

1: University of Applied Sciences and Arts Northwestern Switzerland, Switzerland;

2: Halmstad University, Sweden;

3: University of Oulu, Finland;

4: Georgian College, Ontario Canada

ananda.wyss@fhnw.ch

This research explores the potential for nature-based learning in fostering regenerative capabilities in business education, against the backdrop of ecological crises. The goal of the research is exploring how nature-based learning approaches in education can be integrated to cultivate regenerative-focused mindsets in individuals and organizations, supporting the transition towards regenerative business models. Through a multi-national study that employs an educational design research approach, this explorative research will investigate formats, content, and processes, in existing literature and initiatives. Based upon this review, pilot projects will be developed to experiment and evaluate further insights. The findings are expected to enrich current literature and practice in education for sustainability and business model innovation for sustainability.

## Track 4.3

### BYOT: Bring your own tool

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#### Deliberate Steps Toward a Circular Business Model

Han, Deanna;  
Bocken, Nancy;  
Dijk, Marc  
Maastricht University, Netherlands, The  
d.han@maastrichtuniversity.nl

The circular economy (CE) has increasingly been seen as an alternative paradigm to the current linear approach to the production and consumption of resources. New circular business models (CBMs) have been heralded as a potential driver for CE transitions. The transition to CBMs raises several practical and strategic issues because of the need to change the key building blocks of the business. To provide structure and guidance to businesses during the CBM innovation process and overcome barriers through the support of ecosystem actors, we propose a Circular Business Model Innovation Roadmapping Tool to “operationalize” the circular economy concept. The tool can help businesses articulate the immediate steps to realise CBM and the resources provided by the ecosystem. The Tool is developed by combining different elements from roadmapping, circular business models and ecosystem literature, as well as some core business model elements relating to change domains. The goal of the tool is to help companies take deliberate steps to change their existing business model to a circular one. The development and refinement of the tool will be based on repetitive testing with intended user groups in different sectors at different stages of their circularity journey. During the tool testing phase, workshops will be conducted, and post-workshop surveys disseminated. The practical value of this tool is to help established firms transform their business models to incorporate circularity from a nascent stage. The goal of this work is to study how this circular transformation process takes place in practice.

## **Track 4.3**

### **BYOT: Bring your own tool**

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#### **Selecting The Right Tool For The Right Moment: Development Of Tool Overview For A Circular Customer Journey In Practice**

Kamm, Moniek (1);  
Haaker, Timber (1);  
Marcus Popkema (2);  
Gerd-Jan Oud (3)  
1: Saxion UAS, Netherlands, The  
2: Windesheim UAS  
3: HAN UAS  
m.a.a.kamm@saxion.nl

CESI (Circular Economy Smart Industries) is a Dutch national program to support entrepreneurs in developing circular business models . A collaborative project team of researchers from Saxion, Windesheim, and HAN universities of applied sciences explored tools to facilitate a circular transition in companies within the 'smart' manufacturing industry. This provides a unique opportunity for a deep dive into the vast expanding realm of tools for circularity on offer. The investigation involved analyzing various models, methods, and techniques related to circular transition, categorizing them based on functionality and utility. The results emphasize the need for a comprehensive overview and a standardized framework. Using design thinking principles, the circular customer journey was developed. Over 180 tools on offer were curated and classified. Twenty-two tools were eventually considered appropriate to support SMEs in the manufacturing industry for the various stages in their circular customer journey.

## Track 4.3

### BYOT: Bring your own tool

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#### **The Doing Good Business Game - Benefits and shortcomings in gamification of triple layered business model design and teaching**

Kyhnau, Jan;  
Bruun, Charlotte  
University College of Northern Denmark, Denmark  
JNK@ucn.dk

##### ABSTRACT / SUMMARY

The Doing Good Business Game by Kyhnau (2022) is a tool designed to cultivate sustainable business models through a Reflective Practice-based Learning approach (RPL) combined with two theoretical frameworks: 1. The Triple Layered Business Model Canvas (Joyce & Paquin, 2016) and 2. The Doing Good Business (DGB) framework by Bruun (2021). RPL encompasses three core concepts: Experiences, Thinking, and Action. The game incorporates these principles by using real-life cases and scenario-based exploration close to practical experience.

The purpose of the game is to equip players with the skills to develop sustainable business models, with a focus on the triple bottom line: PROFIT, PLANET, and PEOPLE. The structure includes an introductory part centred on profitability, followed by two sustainability-focused parts: Planet and People. The DGB framework captures sustainability in a dynamic process involving mode of VALUE creation, external forms of GOVERNANCE and human BEHAVIOUR.

In the existing version of the game, DGB plays a secondary role. Experience has revealed shortcomings when it comes to determining the vertical coherence in the BM layers. There is a need for guidance when summing up the findings to answer the big question: Is what you give to People and Planet more valuable than what you take? However, in a new version of the game, DGB will be used in the final phase, creating vertical coherence in the three layers with a new model: The Doing Good Business Diamond (Bruun & Kyhnau, 2024).

## **Track 4.3**

### **BYOT: Bring your own tool**

#### **Enabling Systemic Circular Public Procurement**

Margolis, Anna (1);  
Erbe, Franziska (2);  
Demandt, Maike (2);  
Blomsma, Fenna (1)

1: University of Hamburg, Faculty of Business, Economics and Social Sciences, Hamburg, Germany;  
2: Wuppertal Institut für Klima, Umwelt, Energie gGmbH, Germany  
maike.demandt@wupperinst.org

Circular public procurement (CPProc) is an important strategy to strengthen circular business models. However, today public bodies, such as municipalities, often lack guidance on how to implement CPProc. We propose a method – the Circular Public Procurement Checklist (CPProcC) Builder – that enables a systemic approach to CPProc. The method was developed following action design research (ADR) in collaboration with municipalities.

Method evaluation indicated three main findings. First, organisational roles differ not only in their job description but also in levels of sustainability knowledge, engagement, and time availability, necessitating the need for time- and resources-efficient approaches for non-expert roles. Second, while the method can be helpful in advancing CPProc, institutionalising it requires binding guidelines. Finally, resolving the tension between financial and sustainability perspectives may require an additional step, where the circular potential of the procurement portfolio is assessed.

In summary, applying CPProcC has shown that while public actors often ask for simple solutions, getting to these solutions will require embracing complexity first. Depending on the specific procurement project and the type of organisation, it may make sense to involve external or internal sustainability actors who can ask systemic questions to understand the project context. Translating these questions into simple solutions that can be managed by procurement staff with a lower level of circular expertise requires a series of steps and an understanding of specific product categories, application contexts, and ecosystem offerings. The CPProcC can support such an analysis allowing the creation of a context-specific checklist based on systemic circular criteria.



## Track 4.3

### BYOT: Bring your own tool

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#### But What Does it Mean for Our Business? - Design Science Research to Improve Tool Usability

Niessen, Laura;  
Bocken, Nancy  
Maastricht University, Netherlands, The  
l.niessen@maastrichtuniversity.nl

Tools for business transformation can take a variety of forms, such as business model canvasses, archetypes or patterns. One way of engaging stakeholders to rethink business models and activities is through harnessing the joy of gameplay. Game-based tools can help to develop sustainable business models and to drive behavior change. Research into tools calls for more trialing and ensuring that the tool meets the needs of its intended audience. We developed the game-based tool 'The Road to Flourishing' through a design science research methodology, including two rounds of testing. The aim of The Road to Flourishing tool is to advance understanding of sustainability in a business context and change behavior of businesses towards more radical sustainability activities. In the first round, the piloting brought formative feedback that was incorporated into changes to the game. In the second round, feedback was used to evaluate the impact of the tool in meeting its objective: to change behavior of players towards more radical business sustainability activities. Through the repeat evaluation, we learned valuable lessons and reworked the tool to make it suitable for a business audience. Based on the feedback gathered, we decided to create two distinct versions: one aimed at an audience of (business) students and the general public, and one specifically aimed at business. The tool continues to be trialed with businesses and business students and data are collected to assess the impact the tool can have in terms of behavioral change.

## **Track 4.3**

### **BYOT: Bring your own tool**

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#### **A Structured Process Framework for Digital Servitization**

Kerstholt, Koos;  
Rietdijk, Björn;  
Berkers, Frank  
Rotterdam University of Applied Sciences (Hogeschool Rotterdam)  
b.rietdijk@hr.nl

The development of a digital servitization business model is an inherently complex and long process for SMEs. As a result SMEs regularly fail to reach the finish line, give up early, or even reduce their service offerings.

However, prescriptive processes and tools for digital servitization are still underdeveloped and often perceived as impractical and traditional. Thus, based on two years of action research experience with eight manufacturing industry SMEs, we present an Alpha version of our structured process framework for digital servitization in this paper.

## EPILOGUE

The commitment of the New Business Model Conference to successfully meet the United Nation's 17 Sustainable Development Goals (SDGs) is a constant in our pursue of a better world, gathering in this effort researchers, business leaders and policy makers. We, as the NBM research and practice community, have together accumulated a large and valuable knowledge base which we have further advanced through the discussions at every single conference from the International New Business Models Conference series. This knowledge can support the advancement of the speed and scale of the progress towards the urgently needed radical social and economic transformation in the context of digital, green and inclusive transitions. Therefore, we carry a great responsibility to further and widely disseminate our work during and beyond the 9th International New Business Models Conference, organised by Mondragon University.

During the one-day pre-conference and two conference days that make up the NBM@SanSebastian2024, great contributions and innovative ideas were organised into four themes, two keynote speeches, one panel debate, a discussion panel about the Mondragon Cooperative Movement, and a Doctoral Colloquium.

- Theme 1: Exploring the system level
- Theme 2: Exploring the sectoral and organizational levels
- Theme 3: Exploring organizational impact
- Theme 4: Exploring theoretical and methodological foundations

The ideas presented in this book of abstracts of NBM@SanSebastian2024 are valuable contributions to the field. It is visible that the collection of papers touches upon all 17 SDGs.

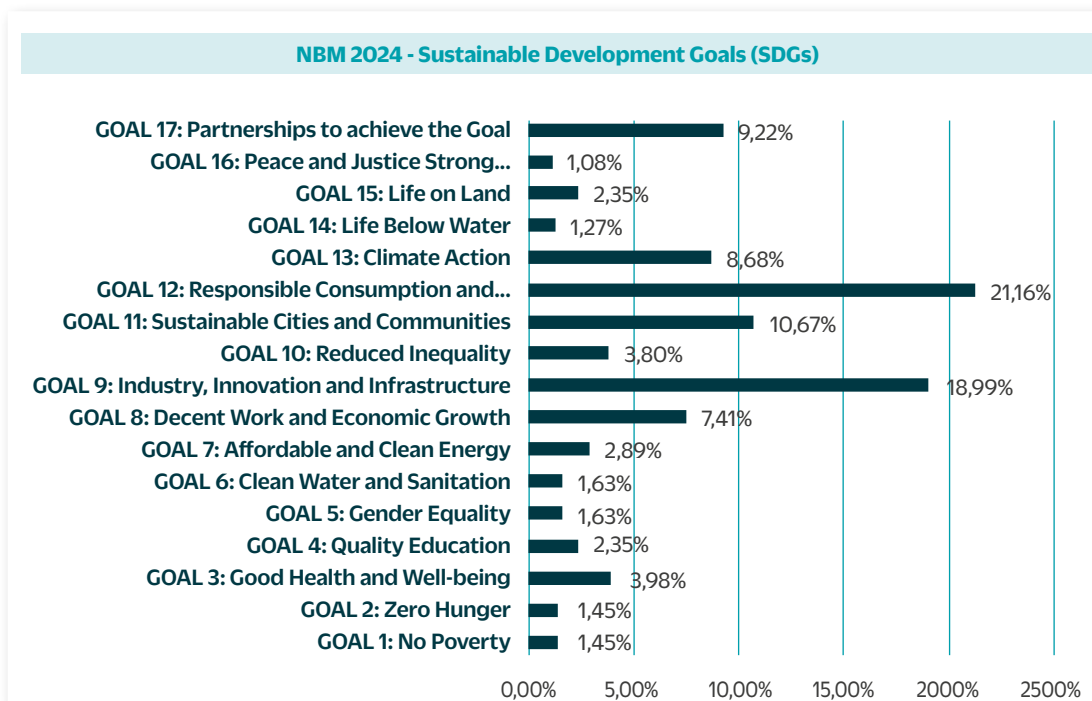


Figure 1: Distribution of papers by SDGs

Finally, during the preparation of this conference and while reviewing all submissions, we understood the importance of the community, teamwork and the need for many different skills. That is why we want to say thank you to the NBM community and many people without whom this conference would not have been possible. Special thanks go to all participants and track chairs, as well as to NBM Conference board who have been supporting us on the journey of organising this conference! We are looking forward to seeing you next year!

## CONFERENCE FOUNDER

**Jan Jonker**

Professor of Sustainable Entrepreneurship  
Nijmegen School of Management  
Radboud University Nijmegen  
The Netherlands



## CONFERENCE TEAM @MONDRAGON UNIVERSITY

**Dr. Dorleta Ibarra Zuluaga – Conference Chair**

dibarra@mondragon.edu

**Dr. Juan Ignacio Igartua Lopez – Conference Chair**

jigartua@mondragon.edu

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## ABOUT MONDRAGON UNIBERTSITATEA

Mondragon Unibertsitatea (Mondragon University) is a practical, innovative and committed university, focused on the development of people, oriented to the needs of the company and society, conceived to meet the challenges of the real world, where knowledge and its application have no limits.

Mondragon Unibertsitatea is a cooperative university founded in 1997 and originally comprised of three faculties (Faculty of Engineering, Faculty of Business Sciences, and Faculty of Humanities and Education Sciences). In 2011, the Basque Culinary Center was created and became part of Mondragon University.

Each Faculty with a legal cooperative structure is built upon a shared project with common cooperative principles such as the priority of the work and the cooperation, democracy and solidarity. These principles are fostered through the implication of three collectives in equal participation: worker partners (owners of the cooperative with capital asset), collaborating partners (representatives from coop and non-coop companies and other institutions) and students.

### Public use, non-profit making and sustainable, and belonging to the MONDRAGON Corporation

As a university with a clear social vocation, we are focused on building suitable employment in society through our educational model and our particular view of research, geared to the needs of business. In building a non-profit making cooperative, we are promoting the students' economic capacity and self-finance by enabling them to combine study and work.

As a non-public organisation, our cooperatives have embodied the concept of sustainability of its own activities, where eventual positive annual results are re-invested in the cooperative and negative results are set against the capital assets of the worker partners.

### Faculty of Engineering

The original school, which today constitutes the Faculty of Engineering of Mondragon Unibertsitatea, began its teaching activities in 1943 on the initiative of Father José María Arizmendiarieta, Founder of the Mondragon Cooperative Experience. Since then, it has never stopped growing, and has been the driving force behind the creation of numerous innovative business experiences.

We are a co-operative integrated into both Mondragon Unibertsitatea and MONDRAGON Corporation and is the legal owner of Mondragon Unibertsitatea's Faculty of Engineering.

We are the Faculty of Engineering of Mondragon Unibertsitatea and we offer a reliable and quality educational proposal, equipped with state-of-the-art facilities, technologically advanced and with the ability to anticipate the changes of the future. We are committed to the future of people and have a long-range vision that balances local connection with an international vision.

We identify trends to anticipate the challenges of the future through an agile and advanced model. Our main activities are training, research, transfer and entrepreneurship in many areas of technology, thus contributing to improve the competitive position of companies and organisations.

## ABOUT MONDRAGON

Mondragon is a small town nestled in the mountains of the Basque region of Spain and it is home to a unique socio-economic business model – the Mondragon Corporation. Founded in 1956, it's not your typical corporation. Instead, it's an integrated network of 81 worker cooperatives, a type of firm in which the people who work in the firm themselves, together, are its member-owners and have ultimate democratic control over its destiny. These 81 cooperatives employ over 70,000 people and had €11 billion in 2023 in a wide variety of sectors, among them, advanced manufacturing and services, retail food, finance and knowledge.

### Cooperative Values at the Core

A set of core cooperative values drives the Mondragon movement. These include:

- **Inter-Cooperation:** Workers collaborate within and across cooperatives for mutual benefit, supporting each other and looking for new business opportunities together.
- **Participation:** Employees have a say in decision-making and the management of the company.
- **Social Responsibility:** The corporation prioritizes social well-being and place-based community development rooted in the Basque region.
- **Solidarity:** Mondragon is committed to policy and practice that foment mutual help and support among its members, their cooperatives and the broader community.
- **Innovation:** Continuous improvement and adaptation are key to the model's long-term success.

### Beyond Profit

Unlike traditional corporations focused solely on maximizing shareholder wealth, Mondragon balances profit with social goals. This translates to fair compensation, worker-centric benefits, and a commitment to sustainable practices.

The Mondragon model offers a compelling alternative to traditional corporate structures. Its emphasis on worker ownership, democratic participation, and social responsibility has positioned it as a leader in the conversation about sustainable business. As we navigate an increasingly complex world, Mondragon's unique approach continues to inspire and challenge us to rethink the relationship between business and society.





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