



IPR4SC

**Developing Skills in Intellectual Property Rights, Open Data for
Sustainability and Circularity**

**IP for Co-Design Jam methodology and training
materials (IP Entrepreneurship)**

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1 Executive Summary

The D6.1 – IP for Co-Design Jam Methodology and Training Materials presents the conceptual underpinnings, implementation logic, and pedagogical assets related to the IPR4SC Co-Design Jam. The Co-Design Jam methodology is specifically designed to operationalise the acquisition of interdisciplinary competences at the nexus of intellectual property rights (IPR), circular economy (CE), and entrepreneurship, thereby supporting the broader aims of the IPR4SC initiative, which seeks to reinforce IP-for-business skills and enhance Europe’s capacity for sustainable, innovation-led growth. Anchored in the strategic framework outlined in the Erasmus+ Programme and aligned with the objectives of the EU’s Green Deal and Digital Agenda, this deliverable contributes to addressing recognised skill mismatches in IPR data literacy, patent informatics, and IP-based business modelling.

The Co-Design Jam model encompasses both **asynchronous pre-training** and **synchronous participatory learning**, progressing through four defined phases: Planning, Discovery / Brainstorming, Ideation, and Prototyping. The format emphasises **experiential learning and strategic co-creation**, culminating in the application of the Circular Business Model Canvas (CBMC) as an analytical tool (Section 4). Supporting roles — including the Jam Leader, Facilitators, and IP Advocates — are specified to ensure methodological integrity and the embedding of IP considerations at all stages of business model design.

Two core pedagogical tools developed under this deliverable are:

- **Use Case Cards** — short, structured profiles for rapid application of IP and CE principles;
- **Elaborated Case Studies** — Harvard-style teaching cases enabling deep-dive analysis and strategic foresight exercises.

These tools serve distinct didactic functions: the former supports low-barrier, high-repetition skill acquisition in early stages of learning; the latter enables scaffolded complexity for advanced analytical work. Both formats are integrated into the Co-Design Jam framework to ensure broad pedagogical reach and skill depth.

The training materials were developed in alignment with the IPR4SC’s multi-stakeholder approach, engaging partners from HEIs, VET providers, SME incubators, and innovation support organisations. The Training for Trainers (T4T) programme ensures the preparedness of facilitation teams to conduct Jams in a standardised, quality-assured manner (Section 3.1.1). Learners, in turn, are provided with foundational knowledge in IPR, sustainability, and innovation via pre-training modules, video lectures, and curated case libraries.

In conclusion, D6.1 offers a validated, field-tested educational format and comprehensive material set that empowers learners and educators to engage with IP-informed circular entrepreneurship. It demonstrates a concrete application of policy ambitions regarding digital, green, and entrepreneurial upskilling. Moreover, it lays the groundwork for cross-border transferability and mainstreaming of the Co-Design Jam model as a replicable practice in other educational and enterprise development contexts across the EU.

2 Introduction

This deliverable, D6.1 IP for Co-Design Jam Methodology and Training Materials, forms one of two core outputs of WP6 within the IPR4SC project — Developing Skills in Intellectual Property Rights Open Data for Sustainability and Circularity. It outlines the educational methodology, training assets, and use cases supporting the implementation of the Co-Design Jam. The Co-Design Jam is designed as an interactive, interdisciplinary learning environment that engages participants in co-creating sustainable and innovation-driven business strategies with a specific emphasis on intellectual property (IP) as both a strategic and operational resource.

The methodology and materials presented are situated within the overarching goal of IPR4SC: to foster IP-informed entrepreneurial competencies that are simultaneously digitally literate, sustainability-oriented, and strategically resilient. As detailed in the project's Description of Action (DoA), the project responds to critical skill gaps identified across the EU in the domains of IP management, IPR informatics, and innovation-driven circular business design. As such, the D6.1 responds to the needs detected in the WP2 – D2.1 Training needs Analysis. These deficits are particularly pronounced among SMEs, technology transfer offices (TTOs), and higher and vocational education learners and educators — the primary beneficiaries and target groups of the project (DoA, pp. 4–8).

The Co-Design Jam methodology itself serves as an innovative pedagogical intervention structured around collaborative knowledge creation and experiential learning. It bridges theoretical insights on IP and circular economy with hands-on business modelling exercises. Rooted in both sustainability imperatives and emerging entrepreneurial needs, the Jam format has been explicitly developed to enhance "IP for Business" skills by integrating intellectual property strategy into circular business models (DoA, pp. 5–6, 17–18).

This approach supports a key IPR4SC objective: to transition from IP as a legalistic concept to IP as a fundamental enabler of green, digital, and entrepreneurial transformation. As emphasised in the DoA, the "smart use" of IP — leveraging open data, patent intelligence, and intangible assets — is central to achieving Europe's digital and climate-neutral goals while also driving job creation and economic resilience (DoA, pp. 4–5, 7–8).

The training methodology detailed in this document is scaffolded by a dual-track learning strategy. Firstly, it prepares trainers through a comprehensive Training for Trainers (T4T) programme that builds their capacity in facilitation, IP literacy, and sustainability transitions. Secondly, it engages learners through a modular, use case-based approach designed to alternate between short, accessible "Use Case Cards" and deep-dive elaborated business cases. This progression from introductory to advanced cases supports incremental skill development and reflective learning (see Sections 3–6).

In alignment with the DoA, the Co-Design Jam adopts a transdisciplinary, practice-led learning architecture that addresses several core challenges: the underutilization of IPR in sustainability-focused entrepreneurship; limited awareness of open IP data resources; and the fragmentation of innovation training across disciplines and institutional boundaries (DoA, pp. 5–8, 72–93). By integrating real-world examples of circular business innovation and IP application, ranging from startups to established firms, the methodology supports context-sensitive learning and directly

reinforces the European Skills, Competences, Qualifications and Occupations (ESCO) classification improvements envisaged by the project (DoA, p. 8).

Ultimately, this deliverable contributes to IPR4SC's broader ambition: enabling new generations of entrepreneurs, educators, and innovation intermediaries to design and implement business models where intellectual property is not only protected but also leveraged as a driver of environmental, economic, and social sustainability.

3 Training materials for Co-design Jam

3.1 General introduction to the Co-Design Jam Sessions structure

The Co-Design Jam educational framework represents a dynamic pedagogical methodology characterised by a structured yet emergent learning architecture that crystallises at the intersection of predetermined methodological scaffolding and participant-driven knowledge co-creation. This framework encompasses a comprehensive pre-implementation infrastructure comprising both Training for Trainers—a tripartite preparation program equipping Facilitators and IP Advocates with theoretical foundations, content mastery, and implementation strategies—and asynchronous pre-training for learners, ensuring requisite intellectual property and circular economy conceptual understanding before engagement. Methodologically, the approach progresses through four sequential phases (Planning, Discovery/Brainstorming, Ideation, and Prototyping)¹, culminating in the development of a Circular Business Model Canvas and pitch presentation, while the implementation structure incorporates one asynchronous preparatory session followed by three time-bounded synchronous interactions facilitated through differentiated roles (Jam Leader, Facilitators, and IP Advocates) that collectively ensure procedural integrity, intellectual property consideration, and engagement dynamics. This educational intervention acknowledges the dialectical relationship between structural predetermination and emergent learning, positioning each Co-Design Jam as a unique epistemological journey where the complete educational experience materialises through collaborative knowledge construction.

3.1.1 Preparation phase - Training for Trainers (T4T)

The Training for Trainers (T4T) program, held online in three sessions (Jan 8, Feb 21, Feb 25, 2025), equipped Facilitators and IP Advocates for Co-Design Jam facilitation. Session one covered theoretical foundations of facilitation in collaborative design, emphasising process management, group dynamics, and psychological safety. Session two focused on the Co-Design Jam content, methodology, expected outcomes, and IP considerations. The final session addressed practical facilitation, including digital platform use, virtual breakout room management, collaborative tools, technical troubleshooting, and hands-on practice. This training program addressed competency gaps and established shared protocols for complex IP and sustainability collaborations. Sessions progressed from theory to content mastery and practical application, using adult learning principles and modelling facilitation techniques. The PowerPoint presentations serve as training materials and resources for future facilitators. This preparation benefits all facilitators by ensuring consistency, aligning expectations, and maintaining the pedagogical integrity of the Co-Design Jam methodology.²

¹ See [D6.2](#) (Section 3.2) for a full overview of the Framework of the Co-Design Jam as online course.

² See the [Annex I](#) for the ppt used for the Training for trainers (T4T).

3.1.2 Execution phase

3.1.2.1 *Pre-training for learners*

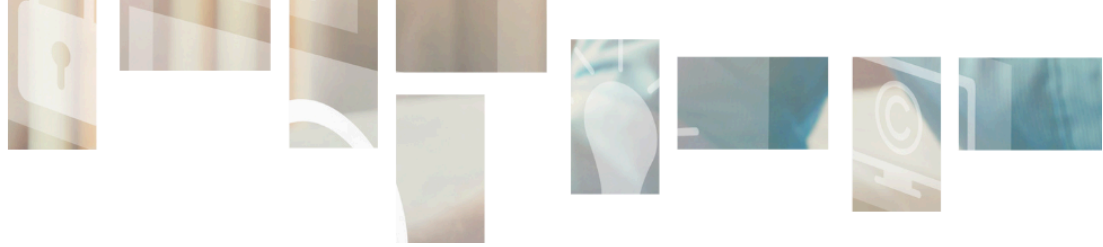
The pre-training sets a minimum knowledge before the commencement of the Synchronous sessions, and the materials are meant to provide every learner, regardless of prior experience, a foundational understanding of IPR, sustainability, circular economy, and their intersections with innovation and entrepreneurship. The process begins with an orientation phase in which students are invited to review a curated selection of multimedia resources and case materials.³

3.1.2.2 *Slides and Exercises for Co-Design Jams*

The slides and exercises for Co-Design Jams can be found in [Annex II](#). The course is structured in four sessions. The first session is asynchronous and is covered by the pre-training for learners' section. The other 3 sections are synchronous.⁴ Overall, in the slides, learners get introduced to the Circular Business Model Canvas as the primary analytical tool (Section 4), and to a preliminary case analysis to concretise theoretical knowledge (Section 5 and subsequent sections). The core phase entails interdisciplinary teams collaboratively analysing complex intellectual property and sustainability challenges through real-world business cases, operating in facilitated breakout environments under a time-constrained framework. Throughout this process, differentiated roles - Jam Leader (orchestrator), Facilitators (process stewards), and IP Advocates (technical specialists) - maintain procedural integrity while preserving participant agency. The methodology culminates in a formal presentation session where teams articulate strategic recommendations, balancing intellectual property protection with circular economy imperatives, thus fostering experiential knowledge construction at the intersection of legality, sustainability, and entrepreneurial innovation.

³ For a review of the Learning materials suggested as a pre-training for learners, see [D6.2](#) (Section 3.5.1 Pre-Training for Learners)

⁴ See [D6.2](#) for through explanation of the learning sessions.



4 Theoretical Framework for the Integration of IPR and Circularity Principles in Business Model Innovation

The transition towards sustainable development presents organisations with the dual challenge of maintaining competitive advantage while addressing urgent environmental concerns. Traditional business models, designed for linear economies, are increasingly inadequate in addressing these challenges. The Business Model Canvas (Osterwalder & Pigneur, 2010)⁵, while foundational in business model innovation, requires evolution to address contemporary sustainability imperatives and intellectual property considerations.

This framework addresses three critical gaps in current business model theory:

- While circular economy principles have gained prominence in sustainability discourse (Geissdoerfer et al., 2017)⁶, their integration into practical business model tools remains limited. Organisations struggle to translate circular economy theory into actionable business strategies while maintaining profitability and market position.
- The role of intellectual property rights (IPR) in enabling sustainable innovation requires careful consideration. As Chesbrough (2020)⁷ notes, the protection of green technologies must balance innovation incentives with the urgent need for widespread adoption of sustainable solutions. Traditional IPR frameworks may either enable or hinder this transition, necessitating new approaches to IP management in circular business models.
- The interconnection between IPR and circular economy principles presents unique challenges and opportunities that existing business model frameworks fail to address adequately. As highlighted by Antikainen & Valkokari (2016)⁸, circular business models often require complex stakeholder networks and novel value creation mechanisms that challenge traditional IP protection approaches.

This theoretical framework addresses these gaps by proposing an enhanced Business Model Canvas that explicitly integrates both IPR and circular economy principles. The framework builds upon established business model theory while incorporating insights from Circular economy research and intellectual property management literature. It provides organisations with a structured approach to designing and implementing sustainable business models that effectively balance innovation protection with environmental responsibility.

The original Business Model Canvas has proven to be a robust tool for business model analysis and design. However, contemporary challenges around sustainability and innovation protection require an enhanced framework that explicitly addresses these dimensions. The integration of IPR and circularity

⁵ Osterwalder, A., & Pigneur, Y. (2010). *Business Model Generation: A handbook for visionaries, game changers, and challengers*. John Wiley & Sons.

⁶ Geissdoerfer, M., Savaget, P., Bocken, N. M., & Hultink, E. J. (2017). The Circular Economy—A new sustainability paradigm? *Journal of Cleaner Production*, 143, 757-768.

⁷ Chesbrough, H. (2020). *Open innovation results: Going beyond the hype and getting down to business*. Oxford University Press.

⁸ Antikainen, M., & Valkokari, K. (2016). A framework for sustainable circular business model innovation. *Technology Innovation Management Review*, 6(7), 5-12.



principles represents a natural evolution of the canvas, responding to increasing pressure for both competitive advantage and environmental responsibility.

4.1 Circular Economy Principles

Circular economy theory emphasises the transition from linear "take-make-dispose" models to circular systems that minimise waste and maximise resource efficiency (Ellen MacArthur Foundation, 2013)⁹. This transition requires fundamental changes in how businesses operate, innovate, and create value. The principles of circularity influence every aspect of business model design, from value proposition to cost structure.

4.2 Intellectual Property Rights in Innovation

IPR theory suggests that innovation protection plays a crucial role in enabling sustainable competitive advantage (Teece, 1986¹⁰). In the context of circular economy transitions, IPR becomes particularly important as organisations invest in sustainable innovations. The protection of these innovations ensures continued investment in sustainability while enabling controlled knowledge sharing.

4.3 Framework Development

The integration of IPR and circularity into the Business Model Canvas led to the identification of nine key elements that combine these perspectives:

1. **Value Propositions:** The transformation of the traditional value proposition element acknowledges the dual nature of value creation in circular business models. Protected circular innovations create both competitive advantage and environmental benefits, requiring a careful balance between IP protection and sustainability transparency.
2. **Key Resources & IP Assets:** This element expands the original "key resources" to explicitly include intellectual property assets. The framework recognises that sustainable innovation requires both physical infrastructure and protected intellectual assets.
3. **Circular Activities & Processes:** Derived from "key activities," this element emphasises processes that support circularity while protecting innovation. The focus shifts to activities that enable both resource efficiency and competitive advantage through protected processes.
4. **Partners & Stakeholders:** The partnership element evolves to consider the complex network of relationships required for circular business models, including IP protection partners and sustainability certification bodies.

⁹ Ellen MacArthur Foundation. (2013). Towards the Circular Economy: Economic and business rationale for an accelerated transition.

¹⁰ Teece, D. J. (2018). Business models and dynamic capabilities. Long Range Planning, 51(1), 40-49.

5. **Customer Segments & Relationships:** This combined element recognises that circular business models often require deeper customer relationships and education, supported by protected innovations that enable sustainable solutions.
6. **Channels & Market Access:** The channels element expands to consider how protected innovations reach markets while maintaining circular principles, including reverse logistics and secure digital platforms.
7. **Cost Structure:** Cost considerations now explicitly include both IP protection investments and circular infrastructure development, recognising the dual nature of investment in sustainable innovation.
8. **Revenue Streams:** Revenue generation expands beyond traditional models to include value captured from both protected innovations and circular services, creating multiple value capture opportunities.
9. **Impact Measurement.** This new element addresses the crucial need to measure and validate both environmental impact and innovation effectiveness, ensuring accountability and continuous improvement.

5 Introduction to use case methodology

5.1 Types of cases: a scaffolding approach for alternating between quick wins and deep dives

According to Krogh et al (2015:202)¹¹ “through case-based learning, students can acquire knowledge, skills and competences at the level of recognition and understanding as well as higher levels of abstraction and problem-solving. Moreover, cases are often used as central components in conveying subject matter and theoretical components, thereby bringing these components into play with authentic problems emanating from practice.”

A case is a narrative, typically written in the third person, that presents a realistic scenario for analysis. It may include data, key background information, graphs, appendices, visuals (such as images), and may also pose questions or outline options for students to consider, serving as a foundation for exploring complex, real-world challenges.

To allow for diverse use of the cases and their adaptability, *we developed two types of cases*. Longer full cases (2) in which the cases are detailed and exhaustive, and shorter, use case format cases, with less detail, but allowing for more flexibility and potentially a wider range of usability.

This combined approach can support *a scaffolded learning experience* – i.e. a structured development of activities that progressively increase students’ abilities, empowerment and agency while reducing teacher-led direction (Vygotsky 1978¹²), starting with shorter cases to build foundational knowledge and confidence, and progressing to longer cases for synthesis, deeper analysis, and strategic thinking. It also supports diverse learning styles and *keeps engagement high by alternating between quick wins and deep dives*.

Thinking of longer, more detailed cases, these allow for deeper contextual understanding, encourage deeper analysis, and deal with real-life situations with a mix of relevant and non-relevant inputs. These cases immerse learners in complex, real-world scenarios, allowing them to understand not just the "what" but also the "why" and "how" behind decisions, actions, and outcomes. Furthermore, the richness of information encourages deeper analysis, comparison of options, and reflection on trade-offs – key skills in strategic, systems-level thinking, which is particularly relevant also in the areas dealing with transitions, such as circular and sustainable ones. Lastly, detailed narratives mimic the messiness of real life, helping students build intuition for dealing with ambiguity and incomplete information, crucial in applied sustainability and circularity contexts. For these, we rely on the approach for the development of Harvard-style teaching cases, which we have already developed in WP4 of the IPR4SC project - see also the case studies deliverable (see here <https://www.ipr4sc.eu/main.php#documents> Part 2_case studies).

¹¹ Krogh L., Stentoft, D., Emmersen, J. and Musaeus, P. (2015). Case-based learning. In University Teaching and Learning (pp. 201-214). Samfundslitteratur

¹² Vygotsky, L. S. (1978). Mind and Society: The Development of Higher Psychological Processes. Cambridge, MA: Harvard University Press

In contrast, *using shorter (in our case, use case card format) cases* allows for flexibility as well as use in shorter lesson segments, which also allows for students to be exposed to a variety of contexts in a single session. Their simplicity also allows for a low entry barrier to a new topic. Next, these short cases also allow students to work with certain frameworks repeatedly and hence practise their application (useful also when the class would also require the students to use a specific framework – in our case, the circular business model canvas – in their end (group or individual) assignment). These concise cases allow quick entry into specific topics or dilemmas. They work well for shorter class segments, workshops, or to spotlight concepts (e.g., a specific indicator or decision point). Multiple short cases can be presented in a single session, giving students exposure to a wider variety of contexts, sectors, and challenges without overwhelming them. They are ideal for practising the application of specific tools, frameworks, or indicators. Students can rapidly test how a method works in different settings. Lastly, their simplicity makes them ideal for learners new to the topic or as warm-ups before tackling more complex material. They also work well in flipped classrooms or co-creation formats like the Co-Design Jam. Since we have developed and used an adopted format of use case cards for shorter cases within IPR4SC WP6, we provide some information regarding this in the next section.

5.2 The use case card format approach: shorter cases

In recent years, interest in the role of intellectual property rights (IPR) in supporting circular business models and sustainable innovation has increased significantly. Traditional approaches to IPR - often centred on protection and exclusivity - are now being re-evaluated in light of the need for open, collaborative and regenerative forms of value creation. To better understand how IPR is being used in practice, *we have developed a customised “Use Case Card” format*: a clear and structured tool to capture and communicate real examples of IPR strategies in existing companies.

This tool builds on ideas originally developed in the context of AI policy and regulation, the “use case cards” proposed by Hupont et al. (2024),¹³, which provide a consistent way to describe how AI systems are used, for what purpose and under what conditions. *We adapt this idea for IPR-related scenarios and use a similar risk- and context-aware structure*. In this way, the map not only helps to organise key information, such as the intended use of specific IP assets, stakeholders involved or potential challenges but also enables a more systematic reflection on how IPR supports (or potentially constrains innovation within circular and sustainable frameworks).

In addition to its documentation function, the IPR use case map is also a practical learning and co-creation tool. It serves as a basis for practical exercises in which participants analyse, structure and reflect on real business cases. As such, *it is particularly useful for workshops and co-creation sessions* focusing on innovation and strategy development. As part of the IPR4SC project, the Use Case Cards played a central role during the Co-Design Jam, where multidisciplinary teams worked together using real-life examples from companies to explore how IPR strategies can be aligned with sustainability goals.

¹³ Hupont, I., Fernández-Llorca, D., Baldassarri, S. et al. Use case cards: a use case reporting framework inspired by the European AI Act. *Ethics Inf Technol* 26, 19 (2024). <https://doi.org/10.1007/s10676-024-09757-7>

By providing a standard, accessible format, the Use Case Card helps bridge the gap between technical IPR knowledge and broader innovation or sustainability strategies. It encourages dialogue, uncovers assumptions and supports informed decision-making between stakeholders - from policymakers and researchers to entrepreneurs and sustainability experts.

Below, we provide the template for the cases, and then one of the full cases, also in this use case card variant, as an exemplar (as well as to allow for contrast between shorter and longer versions).

Table 1: Business card table - template

Use case name	A short, specific name.
Use case description	Write a few sentences describing what the use case is about, the problem it solves, and the main benefits it offers.
Basic Business Inputs	Briefly describe key business information that relates to the use case, such as the company size, industry, main product or service, and target customers.
Circular Business Model Inputs	Explain how circularity is built into the business model for this use case. Describe the relevant Circular Business Model elements, the circular strategies of the company and how the company creates value through these elements.
IP Strategy	Summarise how the company protects its innovation or assets in this use case. Mention any use of patents, trademarks, copyrights, trade secrets, or licensing, and note whether the company uses open or proprietary approaches. If the company lacks an IP strategy, consider how intellectual property could support and strengthen its existing business strategy, mission, or long-term goals.
Challenges and Key Questions Related to IP and Circular Economy in the company	Identify a few of the main challenges or key questions the company faces with this use case, particularly those related to IP or implementing circular strategies.

Future Outlook	Describe the company's plans relevant to the case, such as scaling, entering new markets, improving the solution, or its expected contribution to the CE over time.
Additional information	Include any relevant links, references, photos, or supporting documents that help explain or support the use case.



6 Elaborated cases used for further editions of IP for entrepreneurship

In examining the short business cases developed within the IPR4SC project, a rich tapestry of different business maturities, intellectual property (IP) strategies, and entrepreneurial behaviours emerges. Although these companies vary in size, sector, and market focus, distinct patterns can be observed regarding their maturity, their approach to using and exploiting IP, and the way they position themselves for future growth. Cases were chosen from the Orbis IP database by filtering for IP active startups or SMEs located within the geographic scope of the partnership. Additionally, partners also used their networks, particularly connections to incubators, to identify relevant companies.

The businesses profiled exhibit a wide range of maturity levels. Some, such as *First Personal Coin*, *Eventnomad*, and *Rumundu*, are young, early-stage startups, characterised by small teams, high agility, and an ongoing search for stable market positioning. Their primary focus is on developing and refining their products and services rather than establishing complex internal structures. On the other end of the spectrum, more mature micro-enterprises like *Mizarstvo KOS*, *Geoapp*, and *BNESS Business Consulting* operate with stable or steadily growing revenues. These firms leverage their reputations and client relationships to maintain steady operations but often remain relatively small by design, focusing on high-quality niche offerings rather than rapid scaling. Finally, highly technical businesses like *Citus* and *Meteogen* stand out for their structured, R&D-intensive operations and a clear intent to expand internationally. They demonstrate a level of maturity not only through their technological sophistication but also through the strategic use of IP to fuel sustainable growth.

The usage and exploitation of intellectual property reveal further important differences. For many companies, particularly those rooted in consulting and services like *Mizarstvo KOS*, *Geoapp*, and *Impact Hub Roma*, IP is viewed primarily through the lens of brand protection. These firms prioritise safeguarding their trademarks and building trust-based reputations rather than investing heavily in patents or proprietary technologies. In contrast, more innovation-driven companies such as *Citus* and *Meteogen* integrate IP strategically into the heart of their business models. For them, patents, copyrights, and carefully crafted licensing models are not merely defensive tools but essential instruments for securing competitive advantage, facilitating partnerships, and enabling market scalability.

A recurring pattern across these cases is a reliance on external advisors for IP management. Most companies, especially smaller or service-based ones, do not have in-house legal or IP specialists. This external dependency offers flexibility and cost-efficiency but could become a liability as companies grow and face more complex international IP landscapes. Another notable trend is the central role of brand identity as an IP asset. Particularly among community-driven and service-based enterprises like *Impact Hub Roma* and *Eventnomad*, trust, reputation, and brand recognition are paramount. Protecting these intangible assets becomes the foremost concern, often outweighing considerations of patenting or formal technical IP protection.

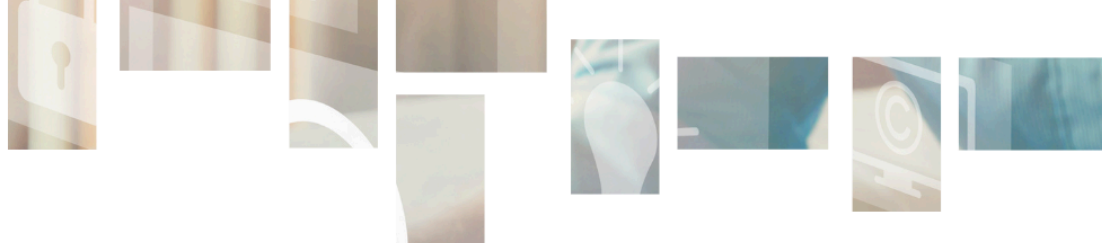
Despite the widespread integration of circular economy principles into business models—whether through sustainable material use, iterative service design, or community engagement—few companies actively leverage IP to support these circular practices. Most businesses treat circularity

and IP management as parallel, rather than intertwined, strategic tracks. This presents a significant untapped opportunity: aligning IP strategies more directly with sustainability goals could reinforce business resilience and innovation potential.

Another pattern concerns the balance between openness and protection. Several companies, particularly those engaged in social innovation or educational activities, grapple with how to maintain collaborative, trust-based ecosystems while protecting key assets. Finding this balance is increasingly critical as these businesses seek to expand their impact without sacrificing their core values or exposing themselves to unfair competition.

In conclusion, the short cases reveal businesses at various stages of growth and sophistication, each navigating the relationship between innovation, sustainability, and intellectual property in ways that reflect both their ambitions and constraints. Technological enterprises are leading the way in using IP as a growth enabler, while service and community-driven organisations rely on brand trust and reputation. Moving forward, all companies could benefit from more systematic internal IP management and a more strategic alignment between their sustainability goals and IP strategies. Those who succeed in doing so are likely to build stronger, more resilient, and more impactful business models in the evolving landscape of circular and sustainable economies.

The short business cases provide a highly valuable resource for educational purposes, particularly in teaching entrepreneurship and innovation management. By presenting real-world examples of how companies at different stages of maturity engage with intellectual property (IP), these cases allow students to explore both the strategic importance and the practical challenges of IP in entrepreneurial settings. The diverse IP strategies — from brand protection and basic trademarking to sophisticated patent portfolios and licensing models — offer a concrete basis for discussions on when and how to integrate IP thinking into business development. Educators can use these cases to prompt critical reflection on the role of IP in scaling a business, protecting innovations, enabling collaborations, or even supporting circular economy goals. Students can be tasked with analysing the strengths and weaknesses of each company's IP approach, proposing improvements, or designing alternative IP strategies aligned with growth ambitions and sustainability objectives. In this way, the cases serve not only to build technical IP knowledge but also to cultivate entrepreneurial skills in strategic decision-making, risk assessment, and long-term value creation.



6.1 Longer elaborated cases

6.1.1 f3nice - Circular Economy Solution for Additive Manufacturing

Introduction

f3nice is an innovative Italian start-up dedicated to converting scrap metal into metal powder for Additive Manufacturing (AM), commonly known as 3D printing. The firm has developed a sustainable and innovative process addressing two macro trends: decommissioning and distributed manufacturing. Unlike traditional methods that rely on mined or virgin raw materials, f3nice utilises 100 % scrap metal, significantly cutting CO2 emissions and reducing energy consumption.

By assisting customers in utilising scrap metal, the company seeks to harness the opportunities within the Circular Economy (CE), by entering the 3D printing market, which has a large potential from an environmental and economic point of view. In terms of the latter, the AM market size was valued at around USD 17-20 billion in 2023 and is expected to grow at a CAGR (compound annual growth rate) of over 20% in the next decade¹⁴. Metal 3D printing is gaining traction from south to north of Europe. In Norway, metal 3D printing is developing rapidly, with growing recognition of its potential and the emergence of a supporting ecosystem around it. Within these developments, there is an emphasis on using non-virgin (recycled) metal.



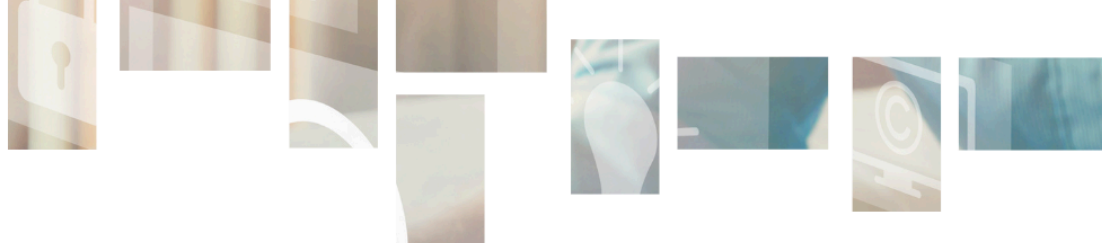
Figure 1: Traditional supply chain versus an AM supply chain

Back in 2015, the article in MIT Sloan Management Review¹⁵ claimed that what 3D printing needs is a 'killer app', and that app is the CE. We could also see this from the opposite direction, as CE has the potential to capitalise upon emerging digital technologies, including AM¹⁶. Following the idea that AM

¹⁴ GVR. (2024). Additive Manufacturing Market Size, Share & Trends Analysis Report By Component, By Printer Type, By Technology, By Software, By Application, By Vertical, By Material, By Region, And Segment Forecasts, 2024 – 2030. Available at: <https://www.grandviewresearch.com/industry-analysis/additive-manufacturing-market> ; Zion. (2024). Additive Manufacturing Market Size, Share, Trends, Growth and Forecast 2032. Zion Market Reports. Available at: <https://www.zionmarketresearch.com/report/additive-manufacturing-market>

¹⁵ Unruh, G. (2015). The killer app for 3D printing? The circular economy. *MIT Sloan Management Review*, 17-19.

¹⁶ Garmulewicz et al. (2018). Disruptive technology as an enabler of the circular economy: what potential does 3D printing hold?. *California Management Review*, 60(3), 112-132; Chauhan et al.. (2022). Linking circular economy and digitalisation technologies: A systematic literature review of past achievements and future promises. *Technological Forecasting and Social Change*, 177, 121508; Liu, Z., Liu, J., & Osmani, M. (2021). Integration of digital economy and circular economy: Current status and future directions. *Sustainability*, 13(13), 7217; Turner et al. (2019). Sustainable production in a circular economy: A business model for re-distributed manufacturing. *Sustainability*, 11(16), 4291; Neligan et al. (2023). Circular disruption: Digitalisation as a driver of circular economy business models. *Business Strategy and the Environment*, 32(3), 1175-1188.



can lead to order-on-demand manufacturing, AM can affect value chains as well as supply chains, making them more localised by supporting closed loops.

Business Input

Luisa Mondora and Matteo Vanazzi met in 2009 as undergraduate students in Materials Engineering and Nanotechnology at Politecnico di Milano. Luisa moved into industry after earning her degree, spending six years managing and turning the metallurgy family business Valland into a thriving company, following her career in Product Development at Loctite (Henkel). Matteo pursued further studies, completing a Master's in Nuclear Engineering followed by a Ph.D. in Energy and Nuclear Science.

In 2019, their conversations sparked the idea of f3nice, centred on sustainable metal feedstock for 3D printing. In 2020, they brought their vision to life, aiming to build a circular supply chain for AM. From Luisa and Matteo's shared interests in AM and sustainable methods, along with complementary skills, the backbone of f3nice was formed. In 2021, f3nice was selected from over 400 global applicants to join the Equinor & Techstars Energy Accelerator, aligning with Matteo's background in the energy sector¹⁷. During the program, they met Philip Hansteen, who later became the third co-founder. With over 15 years at Equinor, he brought critical business experience and strengthened the company's position in the oil and gas sector.

Originally based in Italy, where R&D and small-scale powder production remain, f3nice is now headquartered in Oslo. They plan to build a factory in Mo i Rana in Norway in early 2026. They see the competitive advantage of Mo i Rana in having an ecosystem for metallurgy with companies like Celsa there and see it as a suitable environment to continue working with Equinor. As CEO, Phillip says that their "ambition is to become an integrated part of the local community and contribute to value creation, while finding good partners to build a sustainable future together."¹⁸ The company currently employs nine people and has an annual turnover of €500,000.

Technological input - Additive Manufacturing

AM is a revolutionary manufacturing technique that constructs objects layer by layer from digital 3D models, offering advantages such as design flexibility, cost-effective production for low volumes, less material waste and weight savings. The performance and environmental impact of 3D-printed products depend on the quality and sustainability of the metal powder feedstock. f3nice has addressed this by developing a patented method for producing metal powder for AM, using scrap metal instead of virgin raw materials. AM enables local, on-demand production or repair of spare parts, often providing a faster and more cost-effective alternative to ordering new parts from distant locations.

Moreover, f3nice's technology addresses environmental, ethical, and commercial issues associated with traditional metal powder production. It mitigates soil, water, and air contamination that follows

¹⁷ Equinor was founded as an oil and gas company in Norway and is currently the largest supplier of energy to Europe, including also renewables and low-carbon solutions in their portfolio.

¹⁸ Rana Blad. (2024). Vil etablere en helt ny fabrikk i Mo i Rana: - Bjen har en sterk industriell historie som gjør den til et ideelt sted vår satsing, 2024-10-01.

traditional production with virgin materials, improving public safety and reducing physical disturbances to the landscape. Ethically, it ensures traceability and responsible sourcing of materials, countering the lack of transparency in the industry. Commercially, 3D-printing with metal scrap helps reduce dependency on countries with monopolies over rare earth element supplies, promoting local production and improving sustainability.

Circular Business Model Inputs

f3nice has gained international recognition also through taking part in competitions such as the above-mentioned one. The company has joined several joint industry projects, secured funding from Horizon Europe, and achieved early commercial traction. They use recycled metal scrap, turn it into metal powder, and then customers can 3D print new parts with the metal powder. For example, they have collaborated with Equinor, turning their scrap metal into metal powder, which has been then used by Equinor to print parts for their Johan Castberg project¹⁹.

f3nice employs a sustainable and innovative process to convert metal scrap into high-quality metal powder for 3D printing and aims to promote a circular economy and reduce the carbon footprint while improving customer operations. According to the firm, the technology and process use up to 76 % less energy and up to 92 % less CO₂ emissions compared to competitors. Furthermore, the company helps customers lower inventory costs through more efficient supply chain practices.

Their main customers include companies in the energy, oil and gas industry, such as Equinor, Shell, and Total, who require "just in time" production of parts to minimise downtime during maintenance. Additionally, they have third-party printing centres and OEMs such as Aidro, 3D Hub, Beamit, Exaddon, and Protolabs as clients. The key circular activity in their business model is the 100% scrap recycling process, linking industrial waste to new manufacturing technologies and reducing the need for mining for virgin resources.

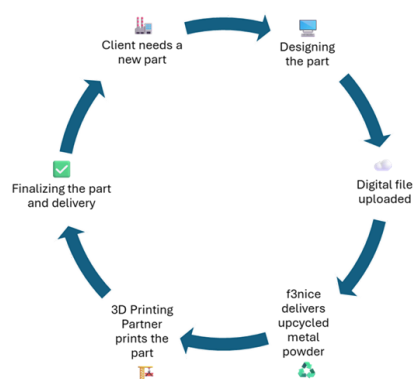


Figure 2: Example of Circular Metal 3D Printing Workflow

In terms of key activities, f3nice continuously invests in R&D for AM and is starting to produce on a larger scale. Additionally, f3nice conducts Life Cycle Assessment (LCA) reporting. One such

¹⁹ Shifter. GC Rieber har investert 75 millioner i 15 oppstarts-selskaper. Shifter, publisert 10. desember 2024. Sist oppdatert 10. desember 2024. Tilgjengelig fra: <https://shifter.no>

assessment compared two production methods for metal powder in AM, using specialised LCA software and reliable databases for accurate modelling. Results showed that f3nice's process consistently delivered lower environmental impacts, with a significant reduction in the Global Warming Potential (GWP100a) indicator, ensuring transparency and traceability across the value chain.

IP Strategy

f3nice maintains a structured intellectual property (IP) strategy. f3nice holds two patents that cover both its innovative recycling process and its hydrogen-compatible powder product (metal alloy). The first patent pertains to the process of recycling metallic materials to produce raw materials for additive manufacturing²⁰. The original patent is in Italy, while the company is currently moving towards securing patents in Brazil, Saudi Arabia and the United Arab Emirates²¹. The second patent is for the metal alloy and the method for manufacturing products suitable for use in environments exposed to hydrogen.

The firm leverages proprietary software to ensure full traceability throughout the production process, from metal scrap to metal powder, enabling efficient scrap handling through a patent-pending process. This system allows for real-time LCA, with specific environmental savings assigned to each batch of powder. The company's IP portfolio, including patents and trademarks, is managed in collaboration with an external consulting advisor.

Outlook

f3nice is focused on continuous innovation in sustainable manufacturing, aiming to further reduce environmental impacts and improve resource efficiency. f3nice plans to scale internationally by building small local factories, potentially replicating the Mo i Rana model. They have applied for patents in Brazil, Saudi Arabia and the United Arab Emirates. These countries are known for their significant oil production, with Brazil, Saudi Arabia, and the United Arab Emirates ranking among the top oil producers globally.

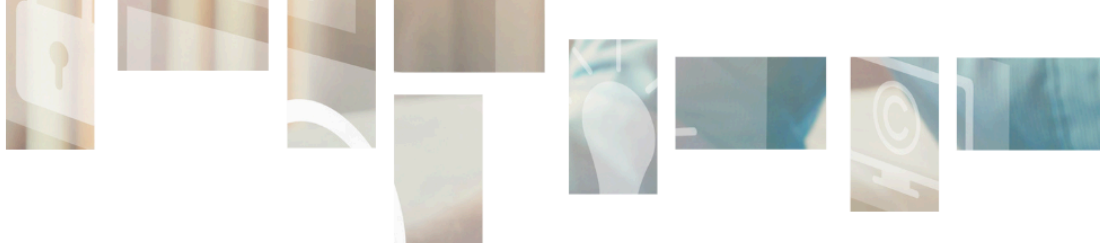
Looking ahead, f3nice aims to play a leading role in driving the transformation toward a CE within the AM industry, helping companies to reduce inventories and utilise scrap metal. As knowledge and information are the backbone for circular activities, the company has an option to offer LCA as a service, using its experience with environmental data and digital tools to move from LCA as a supportive service to core business.

²⁰ World Intellectual Property Organization (WIPO). (2023). Process for Recycling Metallic Materials for Additive Manufacturing. Patent No. WO2023046569. Retrieved from https://patentscope.wipo.int/search/en/detail.jsf?docId=WO2023046569&_fid=WO2023046569

²¹ See Figure 3 in the appendix for illustration.

*Figure 3: Patent Family*²²

²² World Intellectual Property Organization (WIPO). (2022). Process for Recycling Metallic Materials for Additive Manufacturing. Patent No. WO/2022/194413. Retrieved from https://patentscope.wipo.int/search/en/detail.jsf?docId=WO/2022/194413&_cid=P22-M98J77-71607-1



Teaching Note

Summary of the case

f3nice is an Italian-Norwegian start-up that converts scrap metal into metal powder for AM, contributing to sustainability and CE objectives. Their patented recycling process reduces CO₂ emissions and material waste, while supporting trends in distributed manufacturing and localised production. With strong IP protection and digital tools for traceability and LCA, f3nice presents a business model for combining technological innovation with environmental responsibility.

The f3nice case is flexible for teaching, as it connects to multiple topics. The case can therefore be used in teaching across various areas, including entrepreneurship, IP, CE, business models, and digital innovation (in this case represented by AM). In entrepreneurship education, it illustrates how a start-up identifies an emerging opportunity, builds a market presence, and scales internationally while maintaining a sustainability focus. For IP topics, the case shows how patents and IP strategies can align with broader business and environmental goals, as well as the complexities of protecting innovations, especially when contributing to open innovation (for instance, R&D consortia and supply chain collaboration). About the CE, the case offers a concrete example of closing resource loops and building circular supply chains in an industrial setting. When teaching business models, f3nice provides a platform to explore value creation through sustainable innovation, customer partnerships, and the integration of digital services such as LCA reporting and real-time traceability. The case also offers a possibility of exploring CBMs. Regarding digital innovation and AM, the case demonstrates how digital AM technologies enable distributed production and resource efficiencies.

Teaching objectives

The learning objectives of this case study are discovery learning and reflective learning. Discovery learning involves engaging with the case material to understand the organisation, its innovation, and the surrounding environment. Reflective learning encourages students to identify what they have learned, how they have learned it, and how they can apply the analytical frameworks to future scenarios.

A range of analytical frameworks and tools can be applied to this case, offering flexibility based on the specific focus of your course and the intended learning outcomes you have set for your students. Since the main topic centres around IP for entrepreneurship in general and IP and CBM in specific, we propose four alternative frameworks, each suited to different angles of analysis. This approach allows instructors to adapt the case to various teaching objectives and student needs, making the learning experience more targeted and relevant.

First, if you want students to explore the ecosystem perspective and the broader sustainability impacts, we suggest using the framework for sustainable circular business model innovation developed by Antikainen and Valkokari (2016)²³, see Figure 4. While based on the original BM framework, this approach expands to incorporate the multilevel analysis often linked to sustainability. It adds a business ecosystem level that captures external trends, key drivers, and stakeholder

²³ Antikainen, M., & Valkokari, K. (2016). A Framework for Sustainable Circular Business Model Innovation. *Technology Innovation Management Review*, 6(7), 5–12. <https://doi.org/10.22215/timreview1000>

involvement. Furthermore, it introduces a sustainability impact layer that considers both the requirements and the potential benefits of sustainable innovation.

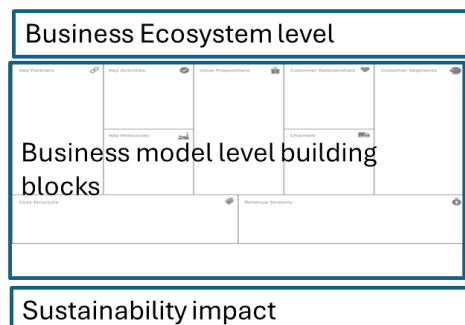


Figure 4: Adapted from Antikainen and Valkokari (2016)

Second, when the learning outcomes centre on specific CE actions or interventions and their impact across the various BM blocks, the Circular Business Model (CBM) canvas developed by Nussholz (2018)²⁴ provides a way to illustrate this. Nussholz (2018) builds on the original BM framework by visually mapping how circular strategies, such as extending product lifespans and closing material loops, can be integrated into each element of the model.

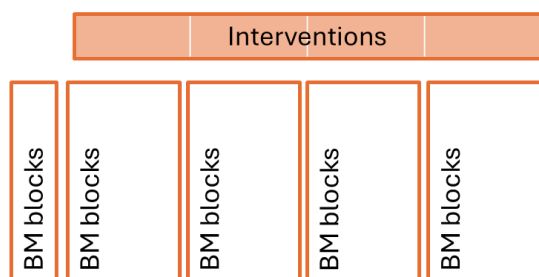


Figure 5: Adapted from Nussholz (2018)

Third, if you want students to learn about innovation and societal impact, a starting point is the Ecocanvas developed by Daou et al. (2020)²⁵. This CBMC builds on Osterwalder's original framework, adding additional blocks that address environmental and social foresight and impact. It also separates CBM and innovation into its dedicated block, encouraging deeper consideration of circular strategies.

²⁴ Nußholz, J. L. K. (2018). A circular business model mapping tool for creating value from prolonged product lifetime and closed material loops. *Journal of Cleaner Production*, 197, 185–194. <https://doi.org/10.1016/j.jclepro.2018.06.112>

²⁵ Daou, A., Mallat, C., Chammas, G., Cerantola, N., Kaye, S., & Saliba, N. A. (2020). The Ecocanvas as a business model canvas for a circular economy. *Journal of Cleaner Production*, 258, 120938. <https://doi.org/10.1016/j.jclepro.2020.120938>

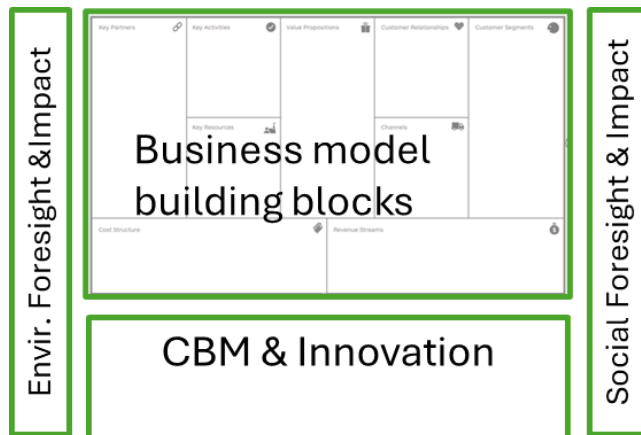


Figure 6: Adapted from Doao et al. (2020)

Fourth, when the aim is for the students to explore sustainability-oriented business model innovation, the Triple Layered Business Model Canvas developed by Joyce and Paquin (2016)²⁶ is a valuable framework. The framework extends beyond the original BM Canvas, which primarily addresses the economic dimension, by adding two additional layers that focus on environmental and social impact (see Figure 4).

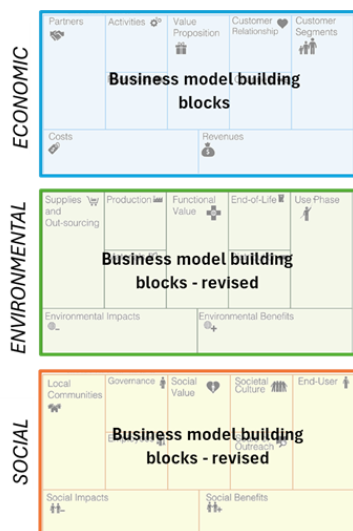


Figure 7: Triple Layered BMC from Joyce and Paquin (2016)

Finally, an adapted version of the BMC, i.e. the adopted innovative CBMC, developed during the IPR4SC Co-Design Jam, is made available for topics centring on IPR for CE businesses. It builds on the original BMC by adding CE- and IPR-related key questions and topics to each building block. The IPR4SC-adapted BMC is flexible and can be easily customised for different topics within IPR and CE. Instructors can select the most relevant questions and topics to guide students' focus according to

²⁶ Joyce, A., & Paquin, R. L. (2016). The triple layered business model canvas: A tool to design more sustainable business models. *Journal of Cleaner Production*, 135, 1474–1486. <https://doi.org/10.1016/j.jclepro.2016.06.067>

specific learning goals. Please see Section 4 for the CE and IPR-related key questions and key topics for each of the different building blocks of the original business model. An example of the first two building blocks is found in Figure 8.

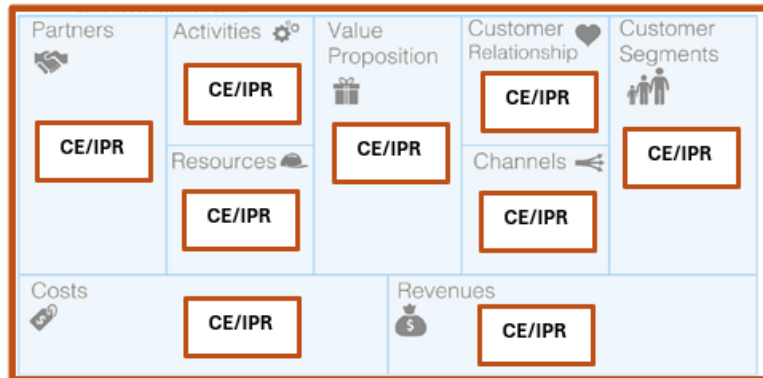


Figure 8: Adapted innovative CBMC, from IPR4SC

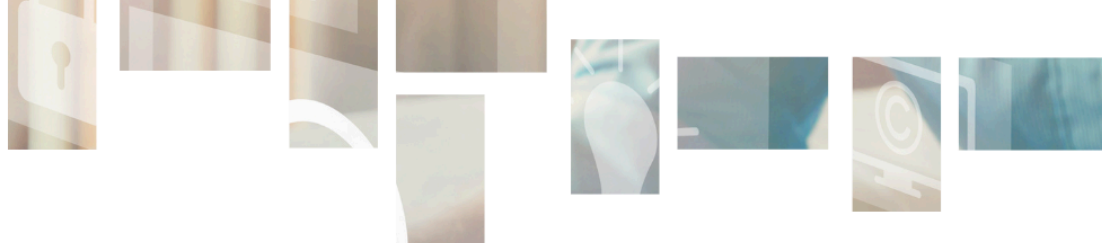
1. Value Proposition	2. Key Resources & IP Assets
<p>KEY QUESTIONS TO DISCUSS</p> <ol style="list-style-type: none"> How does IP protection enhance your circular value proposition? What specific sustainability benefits do your protected technologies deliver? How do you communicate IP-protected and/or circular innovations to customers? <p>KEY TOPICS</p> <ul style="list-style-type: none"> Protected circular innovations Sustainability benefits IP-backed quality guarantees Environmental impact reduction claims Community/users engagement and reputation 	<p>KEY QUESTIONS TO DISCUSS</p> <ol style="list-style-type: none"> What are your critical IP-protected and/or circular technologies and processes? How do you manage your physical and intellectual resources for circularity? What role does the technology play in your resource management? <p>KEY TOPICS</p> <ul style="list-style-type: none"> Patent portfolio Trade secrets (forms of IP comprising confidential information producing economic value) Physical recycling infrastructure Technical expertise and know-how

Figure 9: Examples of key questions and topics

These different tools and frameworks offer multiple entry points for analysis, allowing instructors to tailor the case study to various learning objectives and thematic focuses within IP, CE and BM. The case itself is also designed to be flexible and can be adapted or extended depending on the learning objectives and aim. For example, a version of the case focusing on digital technology (AM) is available in the appendix for inspiration. A short version of the case is also provided in Section 6.2 for use when time is limited or to support more focused discussions.

Teaching Approach

When using this case study for teaching, a few key actions should be considered to ensure an effective learning experience. First, clearly define the aim and learning objectives of the lecture. This will help determine which version of the case is most appropriate, whether it is the full version (Section 6.1), the short version (Section 6.2), or a customised adaptation tailored to the course content.



After defining the aim and choosing the case version, the instructor can choose from the analytical tools introduced earlier, each supporting different perspectives within CE, CBM and IPR. Whichever version and tool are selected, it is important to guide students on what specific issues or themes they should focus on when engaging with the case data, based on the intended outcomes.

Question about the case

Here are some suggested questions that can be used to explore various topics within CE, CBM, digital technologies, and IPR in the context of the case.

Concerning CE

- What CE strategies can be identified in f3nice's business model?
- What challenges might the f3nice face in scaling their production or advancing their existing circular business model to new regions, and how can these be addressed? (For instance, new regions and countries with different regulatory systems)

Concerning Circular Business Models

- How do stakeholder relationships and ecosystem dynamics show up in the CBMC analysis of this case?

Concerning CE and IPR

- How can patents be used to prevent competitors from replicating f3nice's processes while enabling partnerships?
- Are there specific areas where open IP could benefit the circular ecosystem while retaining a competitive advantage?

Concerning Digital (AM)

- What are the main opportunities and risks associated with digital file sharing in AM, especially when files can be reused or copied indefinitely?
- How can businesses balance collaboration with partners (open innovation) with protecting IP in AM ecosystems?

Feedback

The Digital AM version of this case (attached in the Appendix) has been used in an MBA course on Circular Economy, Business Models, and Innovation at Nord University. Feedback from students highlighted that the case was useful for illustrating the concept of Circular Business Models (CBMs) in practice. However, some students found it challenging to identify barriers, as the company appears to be operating successfully. To encourage critical reflection, future use of the case could place greater stress on exploring potential limitations within the firm's CBM and the challenges of scaling or expanding the business to other regions. These aspects could be integrated more explicitly into the case presentations or guiding questions.

Additional Resources

Teachers and students are encouraged to seek additional resources from both academic and non-academic sources. The tools and frameworks suggested are from the following articles.

Antikainen, M., & Valkokari, K. (2016). A Framework for Sustainable Circular Business Model Innovation. *Technology Innovation Management Review*, 6(7), 5–12. <https://doi.org/10.22215/timreview1000>

Daou, A., Mallat, C., Chammas, G., Cerantola, N., Kayed, S., & Saliba, N. A. (2020). The Ecocanvas is a business model canvas for a circular economy. *Journal of Cleaner Production*, 258, 120938. <https://doi.org/10.1016/j.jclepro.2020.120938>

Joyce, A., & Paquin, R. L. (2016). The triple layered business model canvas: A tool to design more sustainable business models. *Journal of Cleaner Production*, 135, 1474–1486. <https://doi.org/10.1016/j.jclepro.2016.06.067>

Nußholz, J. L. K. (2018). A circular business model mapping tool for creating value from prolonged product lifetime and closed material loops. *Journal of Cleaner Production*, 197, 185–194. <https://doi.org/10.1016/j.jclepro.2018.06.112>

Furthermore, please see Section 4 for additional CE and IPR-related key questions and key topics for each of the different building blocks of the original business model.

The homepage of f3nice is <https://f3nice.com/>



6.1.2 ACBC – Anything Can Be Changed

Introduction

ACBC (Anything Can Be Changed) SRL is a pioneering Italian company at the forefront of sustainable innovation in the fashion and footwear industries. Founded in 2016 in Milan by Gio Giacobbe and Edoardo Iannuzzi, ACBC has established itself as a leader in integrating circular economy principles into both its business model and the broader luxury sector. The company's mission is to drive positive change by empowering organisations to transform their governance, products, and supply chain standards to excel in sustainability and ESG performance - thereby transforming not only products and processes but also the mindset of its clients and partners.

ACBC's journey began with the successful launch of the Zipshoe on Kickstarter in 2017, which raised over €1 million in pre-orders and set the stage for rapid growth and international expansion. Today, ACBC operates from its headquarters in Milan, with direct presence in France and the United States, and subsidiaries in more than 6 countries. The company employs 55 professionals and reported revenues of €16.5 million. Its consultancy-driven model has enabled important collaborations, including prominent luxury fashion houses.

Recognised as a B Corporation, ACBC is committed to measurable environmental impact, leveraging ISO 14067-certified life cycle assessment (LCA) and carbon footprint analysis to deliver scientifically validated sustainability outcomes. The company's approach is distinguished by its rigorous use of data, transparent reporting, and a philosophy that incremental changes are insufficient, advocating instead for systemic transformation and deep integration of circularity. ACBC's experience demonstrates that successful, sustainable business models require not only technological and organisational innovation but also a sophisticated approach to intellectual property (IP) management, balancing the need to protect proprietary knowledge with the imperative to foster industry-wide change. The central challenge for ACBC has been to scale its sustainable innovations globally while protecting its brand and unique methodologies. This involves navigating the complexities of IP law, fostering open collaboration, and maintaining a competitive edge in a fast-evolving market. ACBC's story offers valuable lessons for organisations seeking to implement circular business models, highlighting the importance of IP strategy, data transparency, and collaborative ecosystems in achieving both sustainability and profitability.

Business Inputs

ACBC SRL, established in Milan in 2016, is a private company specialising in ESG advisory and sustainable procurement, primarily serving the fashion and luxury industries. The company employs 55 staff members and operates under the NAICS code 46.42.4, reflecting its focus on wholesale and supply chain transformation within the sector. ACBC's annual revenue stands at €16.5 million.

The company's business model is fundamentally B2B, targeting luxury brands and supply chains that seek to align with increasingly stringent ESG and sustainability regulations at both national and European levels. Headquartered in Milan, ACBC has established a direct presence in France and the United States and maintains subsidiaries in more than 6 countries, supporting its international reach and capacity to manage complex, global projects. Since its inception, ACBC has Supported over 145+ global companies covering the entire value chain in Fashion & Luxury, significant

collaborations in FMCG (Financial Institutions and Manufacturing) and set an ambitious target to impact 1% of the global footwear market by 2027. The company's structure is characterised by cross-functional teams that integrate technical expertise, business development, and sustainability analytics, enabling the delivery of tailored solutions for diverse client needs. ACBC, in particular, empowers their clients with a 360-degree ESG approach along the value chain.

We empower our clients with a 360° ESG approach along the value chain

ACBC
ANYTHING CAN BE CHANGED

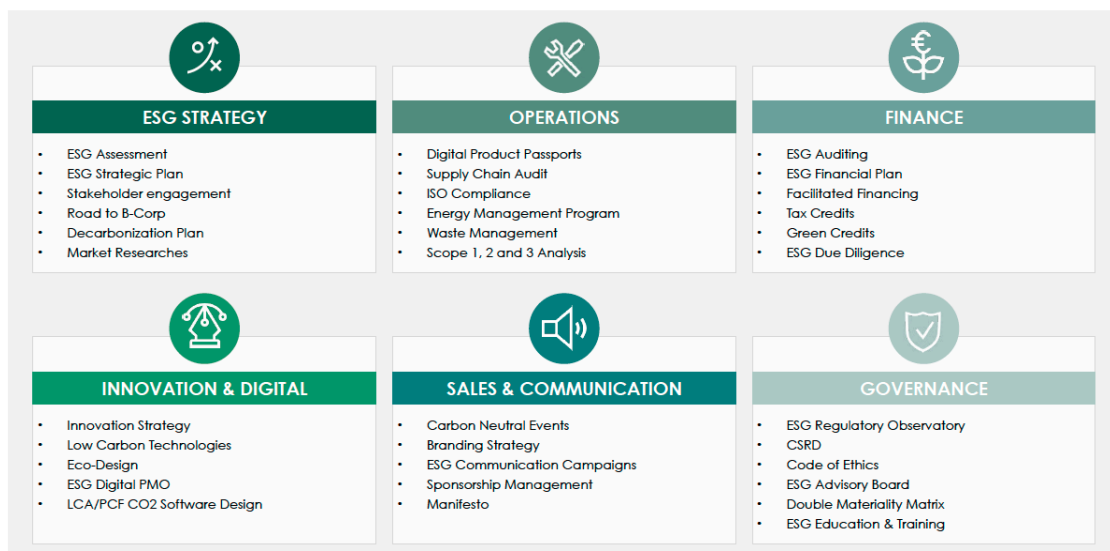


Figure 1: ACBC ESG approach

A distinctive feature of ACBC's business approach is its integration of scientific rigour and data-driven methodologies, particularly through ISO 14067-certified life cycle assessments (LCA) and carbon footprint analysis. These tools allow ACBC to provide clients with robust, actionable insights and to quantify environmental impacts across the entire product lifecycle. The company's proprietary software and database of over 1,000 validated circular materials further enhance its ability to offer innovative, sustainable alternatives to traditional materials, supporting both compliance and market differentiation. ACBC's growth has been fueled by a strong commitment to research and development, with a focus on continuous innovation in sustainable materials, modular design systems, and digital traceability. The company's consultancy-based model not only delivers direct environmental benefits for client brands but also positions ACBC as a thought leader and enabler of systemic change within the fashion and footwear industries. Its organisational culture emphasises collaboration, transparency, and a holistic view of sustainability that extends from product design to supply chain management and end-of-life solutions. In addition to its core business activities, ACBC invests in educational initiatives such as the ACBC Academy, which provides training for managers and professionals in ecological transition and sustainable business practices. The company's B Corporation certification and multiple industry awards attest to its leadership in driving measurable, impactful change in the sector. Overall, ACBC's business inputs reflect a blend of market-driven growth, scientific excellence, and a deep commitment to advancing the principles of circular economy and sustainability on a global scale.

Technological Praxis: Translating Circular Economy Theory into Industry Transformation

ACBC's operational methodology demonstrates the practical application of circular economy principles through a comprehensive suite of technologically advanced, data-driven interventions across the fashion value chain. The company's case portfolio illustrates how theoretical sustainability concepts materialise into tangible industry transformations. For luxury watchmaker Panerai, ACBC developed proprietary bio-circular polymers utilising starch, algae biomass, and used cooking oil, simultaneously addressing material performance requirements and environmental impact reduction in premium manufacturing contexts.

Material Innovation Case: Panerai

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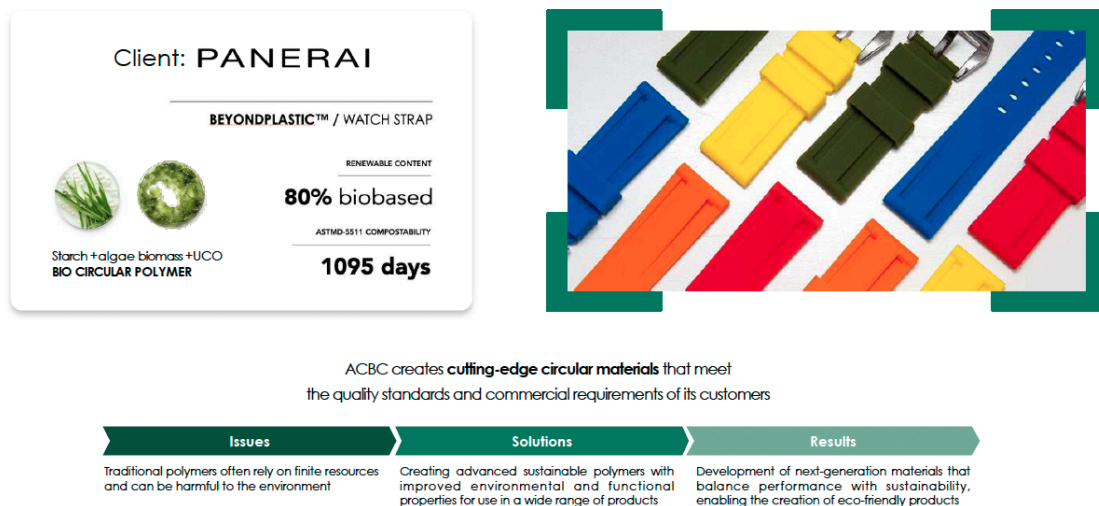


Figure 2: Solution implemented for the client PANERAI

In collaboration with Chloé, ACBC implemented ethical sourcing protocols that integrated sustainability from initial design phases through comprehensive supply chain management, demonstrating the feasibility of circular principles in high-fashion applications.

Product Eco-Design Case: Chloé

ACBC
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ACBC offers **ethical sourcing turn-key solutions** through partnership with its ESG certified global suppliers, **from product sourcing to supply chain management**, ensuring top-tier product quality and the highest environmental and social standards

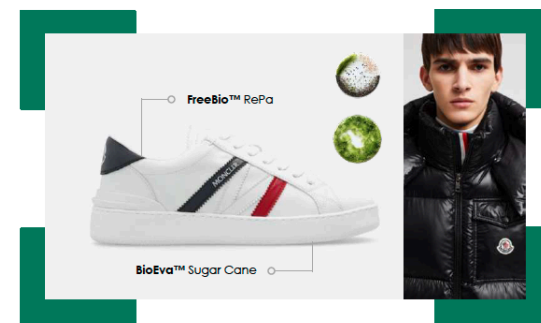


Figure 3: Solution implemented for the client Chloé

The firm's transformation of Moncler's flagship sneaker represents perhaps its most significant technological achievement, employing proprietary FREEBIO™ leather alternative and bio-based polymers derived from sugarcane to achieve a 75% carbon footprint reduction while maintaining luxury performance standards.

Product Eco-Design Case: Moncler

ACBC
ANYTHING CAN BE CHANGED



ACBC **empowers brands to lead in sustainability** by offering cutting-edge **ESG R&D** and strategic **consulting**, delivering transformative solutions that significantly reduce environmental impact while maintaining product performance.



Figure 4: Solution implemented for the client Moncler

For Chanel, ACBC conducted ISO 14067-aligned lifecycle assessments that quantified material impacts across product lines, enabling evidence-based decision-making regarding material selection and manufacturing processes. The company's cross-industry collaboration with Pirelli exemplifies technological transfer, validating FSC-certified rubber technology for footwear applications beyond traditional tire manufacturing. Meanwhile, ACBC's comprehensive ESG advisory work with Zucchi Group demonstrates how their technological approaches facilitate regulatory compliance within complex EU frameworks.

These case implementations are underpinned by ACBC's digital infrastructure-blockchain-enabled traceability systems that deliver verified 76% energy consumption reduction and 92% CO₂ emissions reduction compared to industry standards-illustrating how their methodological rigour translates circular economy theory into measurable industry transformation across diverse contexts in the luxury and fashion sectors.

Circular Business Model Inputs

ACBC has developed a circular business model that exemplifies systemic innovation in the fashion sector, integrating scientific rigour, advanced technologies, and market-driven strategies. The model is founded on sustainable product design, with items conceived for easy disassembly, repair, and recycling, achieved through the prioritised use of recycled, biodegradable, or bio-based materials selected from a proprietary database of over one thousand validated alternatives. Production is organised according to principles of energy efficiency and waste reduction, with a strong focus on responsible sourcing and the use of renewable energy. The logistics system incorporates reverse logistics and take-back programs, facilitating the collection and reintegration of end-of-life products into the production cycle and promoting advanced recycling and upcycling through innovative chemical and mechanical technologies. Traceability and transparency are ensured by digital tools such as blockchain and software for life cycle assessment (LCA) and carbon footprint analysis, compliant with ISO 14021 and ISO 14067 standards, which enable monitoring of environmental impacts across the entire value chain and support clients in meeting European regulations such as the Corporate Sustainability Reporting Directive (CSRD) and the Eco-design for Sustainable Products Regulation (ESPR). The "Sustainable Procurement as a Service" platform facilitates matchmaking between brands and certified suppliers, enabling the creation of closed-loop supply chains that comply with current regulations. The model is further strengthened by strategic partnerships with technical laboratories, academic institutions such as Politecnico di Milano, and ESG consultancies, as well as ongoing training and awareness-raising activities through the ACBC Academy. This approach creates value for clients and stakeholders by reducing costs, improving environmental performance (for example, achieving a 23% reduction in CO₂ emissions in specific products), enhancing brand differentiation, and mitigating regulatory risks, while supporting the commercial scalability of circular solutions in the luxury segment. The robustness of the model is further validated by external certifications such as the Circulytics Gold rating and B Corp certification, and is reflected in a balanced revenue structure between sustainable product sales and ESG advisory services, confirming ACBC's ability to combine intellectual property protection, open innovation, and leadership in the transition towards a circular economy.

We develop innovative solutions thanks to a wide network of leading institutional and industrial partners.

ACBC
ANYTHING CAN BE CHANGED

By collaborating with a diverse network of academic institutions and technical partners, we push innovation beyond traditional limits. We develop sustainable solutions that span from governance and organizational consulting to supply chain and product innovations.

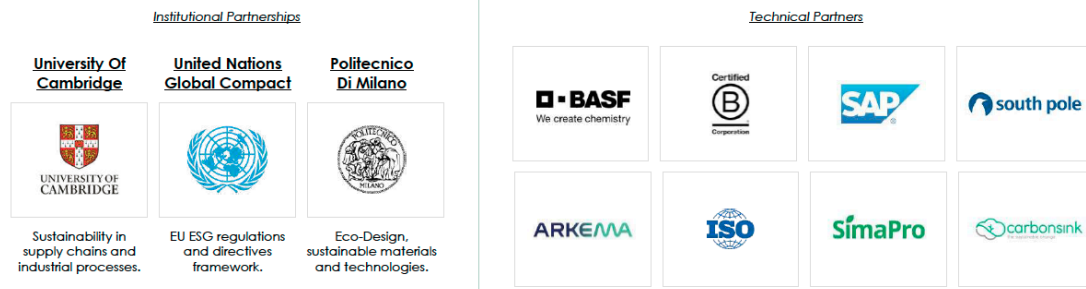
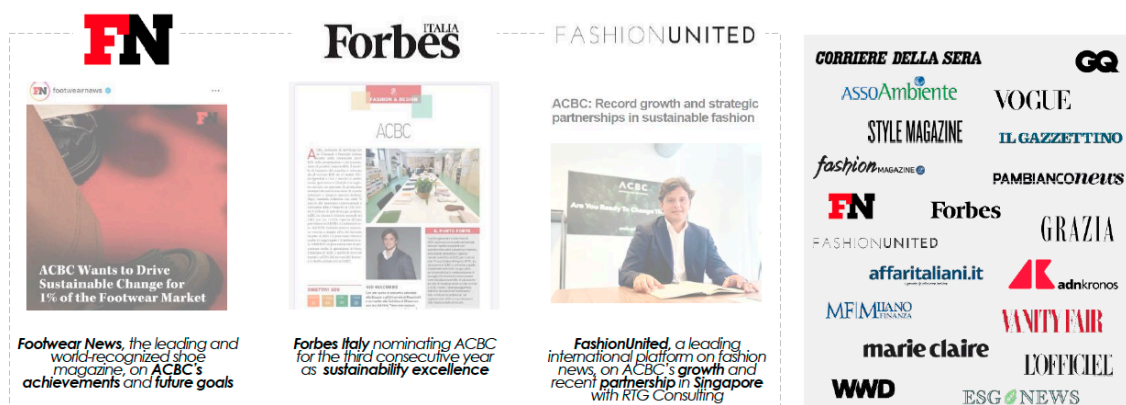


Figure 5: Some of the ACBC partnerships

Lastly, a strong and influential media presence with high-profile endorsements is bolstering global visibility and placing the Group at the forefront of sustainability. The unique approach to sustainability has attracted widespread media coverage, placing the Group at the forefront of sustainability and drawing a larger audience dedicated to sustainability.

A strong and influential media presence with high-profile endorsements bolstering global visibility and placing the Group at the forefront of sustainability

ACBC
ANYTHING CAN BE CHANGED



The unique approach to sustainability has attracted widespread media coverage, placing the Group at the forefront of sustainability and drawing a larger audience dedicated to sustainability

Figure 6: ACBC Media presence

IP Strategy

ACBC's intellectual property strategy exemplifies a sophisticated integration of protection mechanisms and open innovation principles, designed to secure competitive advantage while advancing industry-wide sustainability. The company maintains a €2 million IP portfolio comprising three active patents - covering optimised life cycle assessment (LCA) methodologies, blockchain-enabled supply chain traceability systems, and hybrid recycled material compositions - with two additional patents pending registration. These protections are strategically concentrated on innovations critical to circular economy outcomes, such as FREEBIO™, a patented material combining post-consumer recycled polyester and polyurethane for luxury footwear.

The strategy balances exclusivity with collaboration: core technologies remain patented to safeguard R&D investments (5% of annual revenue), while environmental impact data and modular design principles are shared to drive sector-wide adoption of circular practices. ACBC employs external IP advisors to navigate jurisdictional complexities in key markets, including the EU and the U.S., ensuring alignment with evolving frameworks like the Corporate Sustainability Reporting Directive (CSRD). This dual approach enables the company to license technologies selectively-such as its ISO 14067-certified LCA software-while maintaining control over critical innovations.

Notably, ACBC's IP management extends beyond traditional assets. The company holds trademarks for its B Corp-certified brand identity and employs blockchain to create immutable records of material provenance, effectively patenting supply chain transparency as a competitive differentiator. This aligns with academic research emphasising IP's role in substantiating environmental claims and fostering consumer trust in circular business models.

Future initiatives aim to expand the patent portfolio into advanced biomaterials and digital tools, including a SaaS platform for real-time environmental impact analytics. ACBC is also piloting IP-sharing agreements with strategic suppliers to accelerate closed-loop material flows, reflecting emerging models of "circular patents" that incentivise collaboration while protecting core assets. By intertwining IP protection with open data sharing, ACBC demonstrates how sustainable innovators can reconcile proprietary control with a systemic transformation paradigm increasingly recognised as essential for scaling circular economies.

Future Outlook

Looking ahead, ACBC is strategically positioned to consolidate and expand its leadership in sustainable and circular innovation within the global fashion and footwear industry. The company's future trajectory is defined by a commitment to continuous innovation, international market expansion, and the deepening integration of circular economy principles across its operations and client base. ACBC's ambition to impact 1% of the global footwear market by 2027 reflects both its scale of vision and the credibility it has built through partnerships.

ACBC plans to further invest in research and development, particularly in the creation of advanced biomaterials and digital tools that enhance traceability, life cycle assessment, and environmental impact measurement. The company is preparing to launch a SaaS platform for real-time environmental data management, enabling brands to monitor and improve their sustainability performance efficiently. This digital transformation will not only strengthen ACBC's consultancy and

service offerings but also help clients comply with increasingly stringent regulatory requirements, such as the EU Green Deal and Corporate Sustainability Reporting Directive (CSRD).

A key pillar of ACBC's future strategy is the expansion of its intellectual property portfolio, with new patents targeting innovative materials and supply chain solutions that support closed-loop systems. The company is also exploring innovative IP-sharing contracts and licensing models with strategic partners to accelerate the adoption of circular solutions while safeguarding its competitive advantages. By balancing proprietary protection with selective openness, ACBC aims to foster industry-wide transformation without compromising its market position. ACBC's approach to sustainability is set to become even more holistic, incorporating carbon offset initiatives-such as reforestation and conservation projects help clients achieve net-zero goals and demonstrate environmental responsibility. Through the ACBC Academy, the company will continue to invest in education and capacity-building, training managers and professionals to lead the transition to sustainable and circular business models.

Ultimately, ACBC's future outlook is characterised by a dual focus: scaling its impact through technological and business innovation, and reinforcing its role as a trusted partner for brands navigating the complexities of sustainability, circularity, and intellectual property management. By maintaining its rigorous, data-driven approach and commitment to measurable results, ACBC is poised to drive systemic change, setting new standards for responsible business in the fashion industry and beyond.

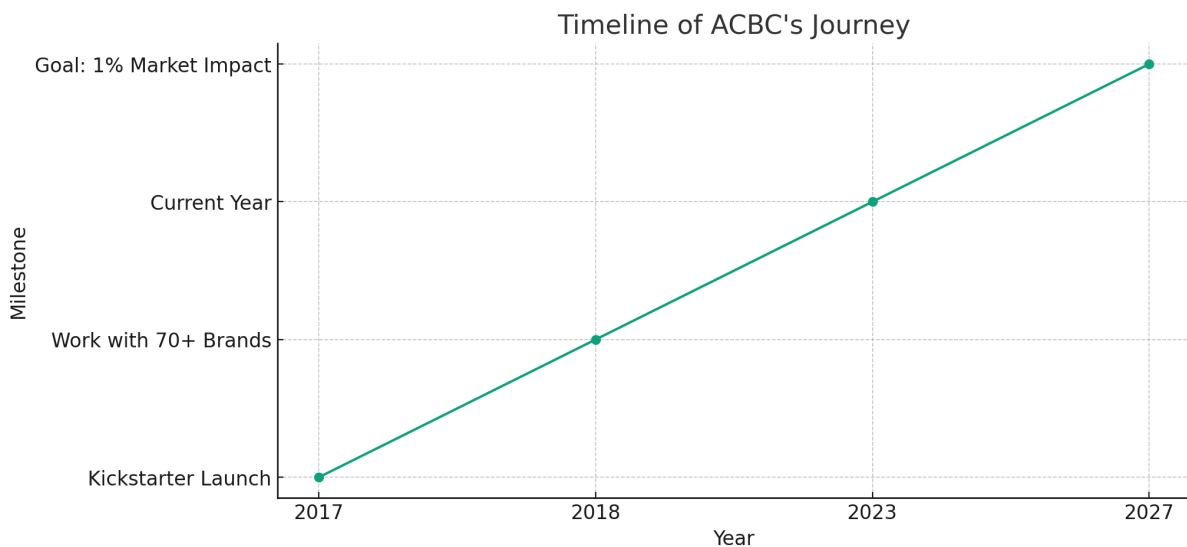


Figure 7: Timeline of ACBC's Journey

Additional information

Website: <https://acbc.com/>

Certifications:

ISO 14001: <https://www.iso.org/standard/60857.html>

ISO 14064: <https://www.iso.org/standard/66453.html>

ISO 14067: <https://www.iso.org/standard/71206.html>

B Corporation (score: 82)

Awards:

- Global Change Award (2022): <https://globalchangeaward.com/>
- Circulytics Gold Rating: <https://ellenmacarthurfoundation.org/resources/circulytics/overview>

Educational Outreach: ACBC Academy's "Manager della Transizione Ecologica" program (70-hour educational program focusing on sustainability strategies and tools)

Key Technologies:

- FREEBIO™: A patented material combining recycled polyester and polyurethane
- BEYONDPLASTIC™: Bio-circular polymers
- SOLEIC™: The First Biodegradable Insole

Teaching Note

Summary of the case

ACBC (Anything Can Be Changed) is an Italian B Corporation pioneering sustainable innovation in the footwear and fashion industries. Founded in 2016, the company combines rigorous intellectual property (IP) management with circular economy principles to drive systemic change. ACBC's hybrid strategy protects core technologies as its patented FREEBIO™ material and blockchain-enabled traceability systems-while openly sharing environmental impact data to foster industry-wide transparency. The firm collaborates with luxury brands, including Chanel and Moncler, to redesign supply chains using ISO 14067-certified life cycle assessments (LCAs) and modular design principles. ACBC's business model balances exclusivity and collaboration: 5% of annual revenue is reinvested in R&D, while selective patent licensing and open-data initiatives promote scalable circular practices. Key challenges include navigating jurisdictional IP complexities, aligning proprietary controls with open innovation, and quantifying the commercial value of sustainability metrics in competitive markets.

Teaching objectives

The learning objectives of this case study are discovery learning and reflective learning. Discovery learning involves engaging with the case material to understand the organisation, its innovation, and the surrounding environment. Reflective learning encourages students to identify what they have learned, how they have learned it, and how they can apply the analytical frameworks to future scenarios.

A range of analytical frameworks and tools can be applied to this case, offering flexibility based on the specific focus of your course and the intended learning outcomes you have set for your students. Since the main topic centres around IP for entrepreneurship in general and IP and CBM in specific, we propose four alternative frameworks, each suited to different angles of analysis. This approach allows

instructors to adapt the case to various teaching objectives and student needs, making the learning experience more targeted and relevant.

First, if you want students to explore the ecosystem perspective and the broader sustainability impacts, we suggest using the framework for sustainable circular business model innovation developed by Antikainen and Valkokari (2016)²⁷, see Figure 8. While based on the original BM framework, this approach expands to incorporate the multilevel analysis often linked to sustainability. It adds a business ecosystem level that captures external trends, key drivers, and stakeholder involvement. Furthermore, it introduces a sustainability impact layer that considers both the requirements and the potential benefits of sustainable innovation.

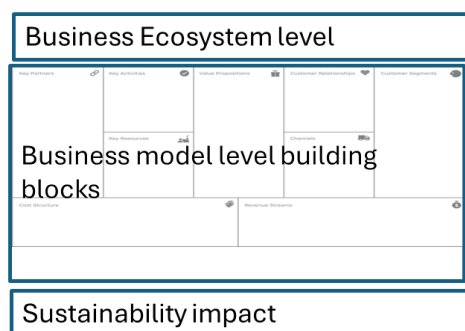


Figure 8: Adapted from Antikainen and Valkokari (2016)

Second, when the learning outcomes centre on specific CE actions or interventions and their impact across the various BM blocks, the Circular Business Model (CBM) canvas developed by Nussholz (2018)²⁸ provides a way to illustrate this. Nussholz (2018) builds on the original BM framework by visually mapping how circular strategies, such as extending product lifespans and closing material loops, can be integrated into each element of the model.

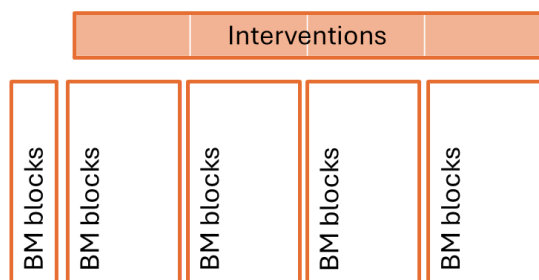


Figure 9: Adapted from Nussholz (2018)

²⁷ Antikainen, M., & Valkokari, K. (2016). A Framework for Sustainable Circular Business Model Innovation. *Technology Innovation Management Review*, 6(7), 5–12. <https://doi.org/10.22215/timreview1000>

²⁸ Nußholz, J. L. K. (2018). A circular business model mapping tool for creating value from prolonged product lifetime and closed material loops. *Journal of Cleaner Production*, 197, 185–194. <https://doi.org/10.1016/j.jclepro.2018.06.112>

Third, if you want students to learn about innovation and societal impact, a starting point is the Ecocanvas developed by Doao et al. (2020)²⁹. This CBMC builds on Osterwalder's original framework, adding additional blocks that address environmental and social foresight and impact. It also separates CBM and innovation into its dedicated block, encouraging deeper consideration of circular strategies.

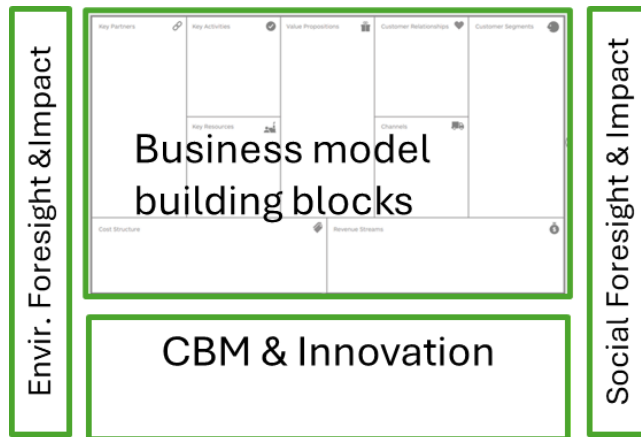
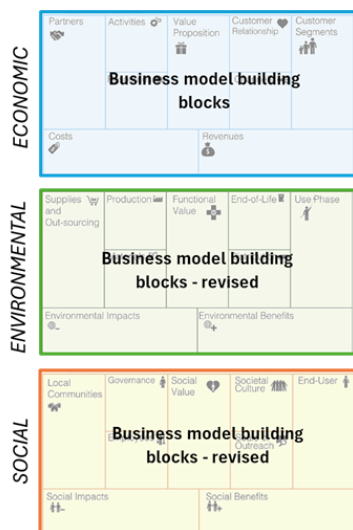


Figure 10: Adapted from Doao et al. (2020)

Fourth, when the aim is for the students to explore sustainability-oriented business model innovation, the Triple Layered Business Model Canvas developed by Joyce and Paquin (2016)³⁰ is a valuable framework. The framework extends beyond the original BM Canvas, which primarily addresses the economic dimension, by adding two additional layers that focus on environmental and social impact (see Figure 8).



²⁹ Daou, A., Mallat, C., Chammas, G., Cerantola, N., Kayed, S., & Saliba, N. A. (2020). The Ecocanvas as a business model canvas for a circular economy. *Journal of Cleaner Production*, 258, 120938. <https://doi.org/10.1016/j.jclepro.2020.120938>

³⁰ Joyce, A., & Paquin, R. L. (2016). The triple layered business model canvas: A tool to design more sustainable business models. *Journal of Cleaner Production*, 135, 1474–1486. <https://doi.org/10.1016/j.jclepro.2016.06.067>

Figure 11: Triple Layered BMC from Joyce and Paquin (2016)

Finally, an adapted version of the BMC, i.e. the adopted innovative CBMC, developed during the IPR4SC Co-Design Jam, is made available for topics centring on IPR for CE businesses. It builds on the original BMC by adding CE- and IPR-related key questions and topics to each building block. The IPR4SC-adapted BMC is flexible and can be easily customised for different topics within IPR and CE. Instructors can select the most relevant questions and topics to guide students' focus according to specific learning goals. Please see Section 4 for the CE and IPR-related key questions and key topics for each of the different building blocks of the original business model. An example of the first two building blocks is found in Figure 8.

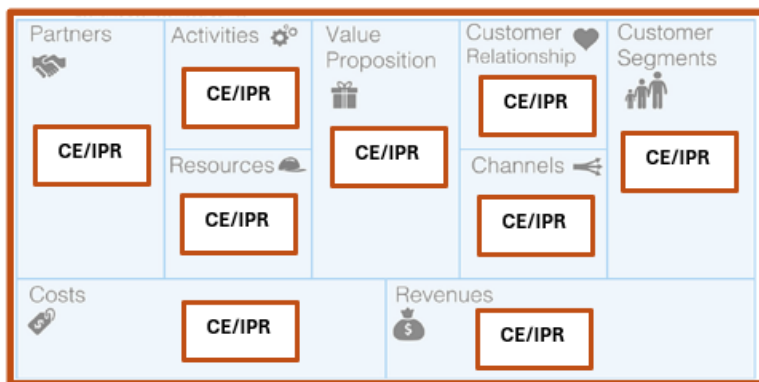


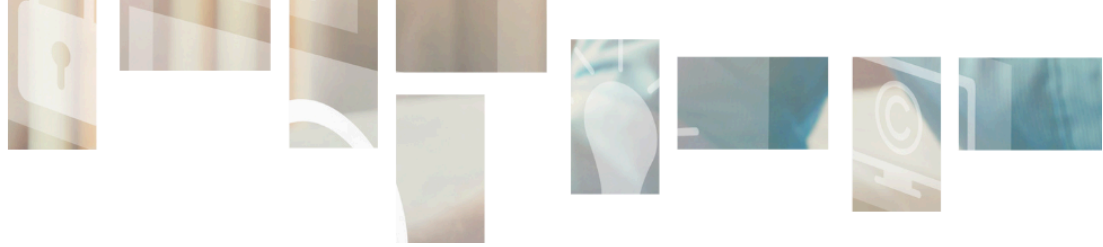
Figure 12: Adapted innovative CBMC, from IPR4SC

<p>1. Value Proposition</p> <p>KEY QUESTIONS TO DISCUSS</p> <ol style="list-style-type: none"> 1. How does IP protection enhance your circular value proposition? 2. What specific sustainability benefits do your protected technologies deliver? 3. How do you communicate IP-protected and/or circular innovations to customers? <p>KEY TOPICS</p> <ul style="list-style-type: none"> - Protected circular innovations - Sustainability benefits - IP-backed quality guarantees - Environmental impact reduction claims - Community/users engagement and reputation 	<p>2. Key Resources & IP Assets</p> <p>KEY QUESTIONS TO DISCUSS</p> <ol style="list-style-type: none"> 1. What are your critical IP-protected and/or circular technologies and processes? 2. How do you manage your physical and intellectual resources for circularity? 3. What role does the technology play in your resource management? <p>KEY TOPICS</p> <ul style="list-style-type: none"> - Patent portfolio - Trade secrets (forms of IP comprising confidential information producing economic value) - Physical recycling infrastructure - Technical expertise and know-how
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Figure 13: Examples of key questions and topics

These different tools and frameworks offer multiple entry points for analysis, allowing instructors to tailor the case study to various learning objectives and thematic focuses within IP, CE and BM. The case itself is also designed to be flexible and can be adapted or extended depending on the learning objectives and aim. For example, a version of the case focusing on digital technology (AM) is available in the appendix for inspiration. A short version of the case is also provided in Section 6.2 for use when time is limited or to support more focused discussions.

Teaching Approach



When using this case study for teaching, a few key actions should be considered to ensure an effective learning experience. First, clearly define the aim and learning objectives of the lecture. This will help determine which version of the case is most appropriate, whether it is the full version (Section 6.1), the short version (Section 6.2), or a customised adaptation tailored to the course content.

After defining the aim and choosing the case version, the instructor can choose from the analytical tools introduced earlier, each supporting different perspectives within CE, CBM and IPR. Whichever version and tool are selected, it is important to guide students on what specific issues or themes they should focus on when engaging with the case data, based on the intended outcomes.

Questions about the case

Here are some suggested questions that can be used to explore various topics within CE, CBM, digital technologies, and IPR in the context of the case.

CE Integration:

- How does ACBC's modular shoe design system (e.g., FREEBIO™ materials, blockchain traceability) enable circularity while maintaining product durability and luxury standards? Analyse quantitative outcomes from their ISO 14067-certified LCAs.
- What challenges does ACBC face in scaling its "take-back" programs for end-of-life footwear in markets with underdeveloped recycling infrastructure (e.g., Southeast Asia)? Propose solutions aligned with their localised factory model.

Regulatory Adaptation

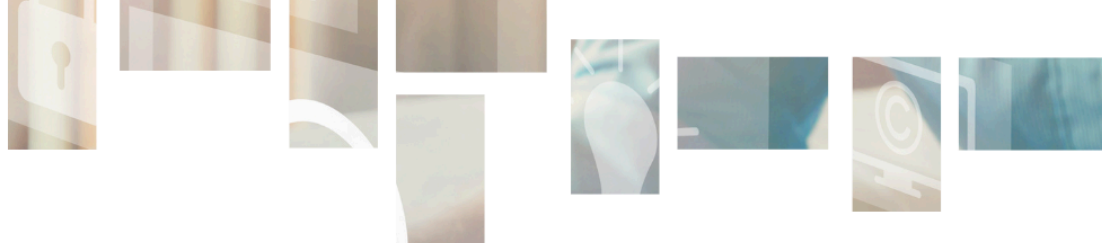
- How can ACBC's hybrid IP strategy (patents + open data) comply with divergent sustainability regulations, such as the EU's Corporate Sustainability Reporting Directive (CSRD) vs. weaker frameworks in emerging markets?

Stakeholder Dynamics

- Map ACBC's partnerships (e.g., Chanel, Moncler) using the Triple-Layered Business Model Canvas. How do these collaborations enable closed-loop material flows while protecting proprietary innovations like bio-based polymers?
- How does ACBC's "Sustainable Procurement as a Service" platform balance transparency with competitive advantage in luxury supply chains?

Value Proposition

- Analyse the tension between ACBC's premium pricing (driven by patented technologies) and its mission to democratise circular practices. Can their B2B consultancy model reconcile these goals?



Strategic IP Management

- Why did ACBC patent its blockchain traceability system (IT102021000005194) but keep hydrogen purification parameters as trade secrets? Evaluate risks in jurisdictions with lax IP enforcement.
- Should ACBC open-source its LCA software to accelerate industry adoption of circular metrics, even if it erodes their competitive edge in ESG consulting?

Open Innovation

- How can ACBC's "IP-sharing" agreements with suppliers (e.g., Pirelli for FSC-certified rubber) prevent competitors from replicating their closed-loop material systems?
- Propose a licensing framework for ACBC's FREEBIO™ technology in Brazil, linking royalties to verified CO₂ reductions by licensees.

Data Transparency

- ACBC's open sharing of production data (e.g., carbon footprint per batch) strengthens brand equity or exposes vulnerabilities in its supply chain?

Balancing Collaboration and Protection

- Design a "data trust alliance" for ACBC's material database (1,000+ entries). How can shared access coexist with protections for proprietary biomaterial formulations?

Additional Resources

Teachers and students are encouraged to seek additional resources from both academic and non-academic sources. The tools and frameworks suggested are from the following articles.

Antikainen, M., & Valkokari, K. (2016). A Framework for Sustainable Circular Business Model Innovation. *Technology Innovation Management Review*, 6(7), 5–12. <https://doi.org/10.22215/timreview1000>

Daou, A., Mallat, C., Chammas, G., Cerantola, N., Kayed, S., & Saliba, N. A. (2020). The Ecocanvas as a business model canvas for a circular economy. *Journal of Cleaner Production*, 258, 120938. <https://doi.org/10.1016/j.jclepro.2020.120938>

Joyce, A., & Paquin, R. L. (2016). The triple layered business model canvas: A tool to design more sustainable business models. *Journal of Cleaner Production*, 135, 1474–1486. <https://doi.org/10.1016/j.jclepro.2016.06.067>

Nußholz, J. L. K. (2018). A circular business model mapping tool for creating value from prolonged product lifetime and closed material loops. *Journal of Cleaner Production*, 197, 185–194. <https://doi.org/10.1016/j.jclepro.2018.06.112>

Furthermore, please see Section 4 for additional CE and IPR-related key questions and key topics for each of the different building blocks of the original business model.

The homepage of ACBC is <https://acbc.com/>



6.2 Shorter elaborated cases

6.2.1 Mizarstvo KOS

Use case name	Mizarstvo Kos d.o.o.
Use case description	Mizarstvo Kos d.o.o. is a Slovenian company dedicated to creating top-quality wooden products for outdoor design with sustainability and tradition in mind. Their products include a wide range of unique wooden structures, such as terrace canopies, pergolas, summer kitchens, and tiny houses, which combine aesthetics and practicality. They also operate the Lesarius Museum, which represents a rich wood heritage. The company strives to use local resources and ecological principles, which attracts clients (individuals and companies) who are looking for sustainable and customised solutions. They also offer design-architectural planning, and engineering for comprehensive outdoor space design.
Basic Business Inputs	The company was founded on 21.10.1991 and currently has 6 employees. It is located in Velika Preska in the municipality of Litija, Slovenia. It is a privately owned company. Its revenue is 334.909,37 EUR. The company primarily operates in Slovenia, but due to the growing interest in sustainable solutions, its customers also come from Croatia.
Circular Business Model Inputs	<p>The sustainable focus is reflected in the use of wood, a renewable natural resource, and in a circular economy, which reduces waste. Tradition is expressed in the preservation of old techniques, which are integrated into modern solutions, while innovation drives new ideas that enable unique, customised solutions. This combination provides a unique approach that unites the past and the future. Customers recognise the company for its exceptional sense of quality and aesthetics.</p> <p>The company offers its customers customised wooden solutions that combine modern aesthetics with tradition. Their offer includes innovative wooden structures, such as unique terrace canopies, pergolas, summer kitchens, playhouses, and tourist sculptures, which are functional and environmentally friendly. In addition to products, they offer their customers comprehensive consulting and planning for outdoor arrangements, which allows for a harmonious</p>



	<p>integration of nature and architecture. With each product, they strive to tell a story about wood, its origin and sustainability. Due to their unique knowledge and personal approach, they build long-term relationships with their customers.</p> <p>Kos carpentry is based on a circular model that allows for minimal waste and utilises all parts of the wood. Circular economy is part of their business model, as they optimise all stages of production and look for ways to recycle waste materials. In this way, they create not only aesthetic products but also sustainable solutions, which provide added value to customers. Stakeholders recognise the company as a trustworthy partner that contributes to the preservation of nature with every project. In addition to products, the company also offers educational services to raise awareness about the importance of sustainability.</p> <p>Key partners include suppliers of sustainably sourced wood and technology partners to optimise production. Working with sustainable construction experts helps them stay in line with the latest sustainability industry standards. They develop innovative solutions with partners to reduce their environmental footprint. They also involve experts in recycling and material processing, which contributes to the sustainability of the model. Collaborations enable greater efficiency and flexibility in project implementation.</p>
IP Strategy	<p>Total Patents: 0 Patent Portfolio Value: 0</p> <p>The company does not have its IP strategy.</p> <p>The company has only protected the name 'Wind Organ', which will be used in various products associated with this project.</p>
Challenges and Key Questions Related to IP and Circular Economy in the company	<p>They are facing different challenges related to staff, for example, that every employee is specialised in a certain area and for that reason, every missing employee causes a great loss. The general problem is the need for more staff in this field; other industries may be more attractive in terms of pay and reputation. There is also an issue with the change of generations and how to connect old ways of thinking with new ones. One of the challenges is balancing the scope of work and investment in staff's knowledge.</p> <p>Another important challenge they face is investment in development, which they see as very important but difficult to</p>



	resolve because the small company needs more financial resources to invest in development.
Future Outlook	<p>At Mizarstvo Kos d.o.o. (Joinery Kos) www.mizarstvo-kos.si, we envision a future where wood becomes the foundation of a sustainable, innovative, and culturally rich society. Our mission is to contribute to a better quality of life in Slovenia and globally by creating bespoke wooden solutions that are deeply rooted in tradition, shaped by knowledge, and driven by the principles of sustainability and circular economy.</p> <p>We collaborate across disciplines—engaging designers, educational institutions, suppliers, and the wider wood processing industry—to drive innovation and promote responsible craftsmanship. Through continuous education and awareness-building, we empower both our team and the community to participate in shaping a sustainable future.</p> <p>As part of our commitment to the "Wooden Age 2020–2050" initiative, we have identified seven key pillars of development, each exploring the deep connection between wood and different aspects of human experience:</p> <ol style="list-style-type: none"> 1. Wood and Heritage – Honouring tradition through the establishment of the <i>Lesarius Museum</i> www.lesarius.si, a space dedicated to preserving and celebrating the cultural heritage of woodworking. 2. Wood and Living – Designing natural, high-quality living environments that elevate everyday life. 3. Wood and Culinary Arts – Fusing wood with gastronomy, from interior elements to unique culinary presentation and experiences. 4. Wood and Sports – Integrating wood into active lifestyles through thoughtfully crafted sports infrastructure and equipment. 5. Wood and Music – Supporting the creation of musical instruments and acoustically refined spaces that bring harmony between nature and sound. 6. Wood and Health – Promoting the healing and calming properties of wood in therapeutic and wellness settings. 7. Wood and Fashion – Innovating with wooden materials in wearable art, accessories, and eco-conscious fashion. <p>This holistic vision reflects our belief in the transformative power of wood, not just as a material, but as a way of life. It aligns fully with</p>

	the goals of the IPR4SC project by championing sustainable innovation, social responsibility, and the intelligent use of natural resources for long-term competitiveness and resilience.
Additional information	<p>Company website https://www.mizarstvo-kos.si/</p> <p>Lesarius museum website: lesarius.si</p> <p>zunanjaureditev.com</p>



6.2.2 Citus

Use case name	CITUS – Driving Innovation through IP in a Circular Tech Business
Use case description	<p>CITUS is a Croatian micro-enterprise specialising in the development of software solutions that increase productivity and security, especially in the context of growing cyber threats. By embedding circular practices into their business model, such as iterative product development and continuous user feedback, they ensure that their innovations are scalable and adaptable across multiple industries. Intellectual property (IP) plays a central role in protecting and enabling these practices. This case shows how IP can serve not only as a protection tool but also as a driver of sustainable innovation and long-term competitiveness.</p>
Basic Business Inputs	<p>Company Name: CITUS Location: Croatia (global market focus) Employees: 10 full-time, 43 external collaborators Annual Revenue: €674,675 Target Market: Niche global markets within the tech and data industries Collaborations: Partners include Microsoft and a network of external experts Core Values: Innovative, Agile, Entrepreneurial Organisational Model: Department leads act as both managers and practitioners</p>

Circular Business Model Inputs	<p>Value Proposition: Innovative, secure digital solutions tailored to boost productivity and adaptability</p> <p>Key Resources: Skilled human capital, advanced technical infrastructure, proprietary technology</p> <p>Key Activities:</p> <ul style="list-style-type: none"> • Deep research and algorithmic development • MVP creation and multi-stage testing with real users and partners • Cross-industry application and scaling of validated solutions <p>Customer Engagement:</p> <ul style="list-style-type: none"> • ISO 9001 quality system to manage continuous feedback • Long-term partnerships with co-development elements <p>Value Delivery:</p> <ul style="list-style-type: none"> • Circular R&D loops to refine and adapt innovations • Agile delivery through reusable, evolving platforms and technologies
IP Strategy	<p>IP is embedded in the entire value creation process at CITUS. The company has five active IT-related patents (with two more expected by the end of the year) and holds copyright and design rights valid throughout the EU and the US. Its intellectual property includes:</p> <p>Proprietary technologies derived from in-house research and development</p> <ul style="list-style-type: none"> • Customised solutions for digital transformation projects • Platform-based innovations that enable scalable reuse <p>The protection of intellectual property ensures the uniqueness of the product, supports cross-industry applications and strengthens CITUS' position in innovation ecosystems. IP is also of central importance for customer trust and the commercialisation of their solutions.</p>

Challenges and Key Questions Related to IP and Circular Economy in the company	<ol style="list-style-type: none"> 1. How can CITUS scale its innovation while ensuring the continued protection of new intellectual property in different markets? 2. What is the best way to balance open collaboration with external partners with the need to protect key intellectual property rights? 3. How to structure IP licensing models that support the circular economy and reuse without restricting future growth? 4. What internal capabilities (legal/strategic) are needed to effectively manage IPR while remaining flexible?
Future Outlook	<p>CITUS endeavours to expand its patent portfolio and strengthen IP-based partnerships with global players. As its solutions are increasingly integrated into digital transformation projects, CITUS plans to:</p> <ul style="list-style-type: none"> • Deepen industry-specific innovations • Open up new international markets through strong IPR positioning • Act as an innovation enabler for customers and utilise IP to enable sustainable transformation • CITUS's role in the co-development of digital circular solutions is expected to increase as more industries adopt agile, IP-driven business models.
Additional information	<p>Website: https://www.citus.hr</p> <p>Additional knowledge:</p> <ul style="list-style-type: none"> • COMPETITION IN THE CIRCULAR ECONOMY: OECD Competition Policy Roundtable Background Note • European IP Helpdesk



6.2.3 Geoapp

Use case name	Geoapp
Use case description	<p>Geoapp is a small, dynamic company specialising in geospatial and environmental consultancy, operating primarily across South and North America. With a modern, technically savvy, and flexible team structure composed of a CEO, business developers, and technical experts, Geoapp offers a unique blend of expertise tailored to client needs. Their circular business model is centred around leveraging their distinctive mix of skills and experience to deliver value-driven services. Although intellectual property (IP) plays a modest role, focused more on reputation than formal rights, Geoapp uses external advisors to manage IP-related matters, recognising that maintaining a strong brand reputation is key to sustaining growth in a rapidly expanding market.</p>
Basic Business Inputs	<p>Company Name: Geoapp Location: South America, North America Employees: 10 Annual Revenue: €2–2.5 million Target Market: Growing (exact size not precisely estimated) Collaborations: External advisors for IP management Core Values: Modern, technically savvy, flexible Organisational Model: Small corporate structure with CEO, business development, and technical experts</p>
Circular Business Model Inputs	<p>Value Proposition: Geoapp offers a unique mix of geospatial and environmental consultancy expertise, delivering flexible, technically advanced, and tailored solutions to clients across South and North America.</p> <p>Key Resources:</p> <ul style="list-style-type: none"> • Highly skilled technical team (business developers, technical experts) • Deep technical knowledge in the geospatial and environmental sectors • Strong brand reputation • External IP advisors supporting brand and reputation management <p>Key Activities:</p>

	<ul style="list-style-type: none"> • Providing specialised consultancy services in the geospatial and environmental fields • Applying technical expertise to complex client needs • Continually updating and expanding service offerings based on market demands <p>Customer Engagement:</p> <ul style="list-style-type: none"> • Building relationships through technical excellence and flexible service delivery • Customising consultancy solutions to fit specific client projects and regions • Maintaining a modern, responsive approach to client communications and project needs <p>Value Delivery:</p> <ul style="list-style-type: none"> • Delivering specialised, high-quality consultancy solutions that combine technical precision with flexibility • Ensuring ongoing customer satisfaction through adaptive service offerings and reputation-driven trust • Sustaining value creation by expanding expertise into growing regional markets
IP Strategy	<p>Geoapp's IP strategy focuses primarily on protecting and strengthening its brand reputation, which is a key asset in its consultancy-driven business model. While formal IP registrations such as trademarks are considered, the company currently relies on external advisors to manage IP-related matters. Strengthening their approach could involve formalising trademarks and developing internal guidelines to safeguard proprietary knowledge and client solutions better. In the future, a more structured IP strategy could help Geoapp enhance its market position, support expansion into new regions, and build long-term customer trust.</p>
Challenges and Key Questions Related to IP and Circular Economy in the company	<ol style="list-style-type: none"> 1. How can Geoapp better formalise its intellectual property protection to safeguard its unique expertise and consultancy services as it expands? 2. What internal processes or competencies should Geoapp develop to strategically manage its IP assets and reduce reliance on external advisors?

	<ol style="list-style-type: none"> How can Geoapp maintain its flexible and client-focused service approach while ensuring that its innovative methods and solutions are not exposed to imitation? How can Geoapp leverage stronger IP practices to enhance its credibility, secure new markets in South and North America, and sustain its circular value creation model?
Future Outlook	<p>Geoapp is well-positioned to expand its consultancy services by leveraging its strong technical expertise and growing reputation across South and North America. Strengthening its intellectual property practices, particularly around brand protection and proprietary knowledge, could further secure its competitive advantage. By investing in internal IP management capabilities and formalising key aspects of its expertise, Geoapp can enhance customer trust and long-term resilience. As the demand for flexible and specialised environmental solutions grows, Geoapp has the opportunity to solidify its role as a trusted leader in its niche markets.</p>
Additional information	www.geoapp.it



6.2.4 First Personal Coin

Use case name	First Personal Coin (FPC).
Use case description	<p>FPC is an innovative Italian startup specialising in Distributed Ledger Technology (DLT) applications across various industries. With a strong focus on decentralised culture and a holistic approach to technology, FPC delivers innovations and efficiency to clients entering the financial and digital markets. Operating primarily in Italy, the company maintains a small and agile team composed of 2 full-time employees and 2 collaborators. Their target market includes new entrants in the financial sector and innovative businesses operating within a rapidly growing field. FPC protects its core innovations through patents and trademarks, with the support of external advisors. Although intellectual property does not currently play a central role in enabling circular practices for FPC, it remains vital for safeguarding the company's technological developments and maintaining a competitive edge.</p>
Basic Business Inputs	<p>Company Name: FPC Location: Italy Employees: 2 full-time + 2 collaborators Annual Revenue: (Not explicitly stated in the file; only employee info is provided) Target Market: New entrants in the financial market and innovative companies Collaborations: External advisors for IP management; operates in innovative ecosystems Core Values: Decentralised culture, holistic technology approach, innovation Organisational Model: Innovative startup operating in the Distributed Ledger Technology (DLT) sector with a lean team structure</p>
Circular Business Model Inputs	<p>Value Proposition: Providing innovations and efficiency through Distributed Ledger Technology (DLT) applications tailored for financial market newcomers and innovative companies.</p> <p>Key Resources:</p> <ul style="list-style-type: none"> • Proprietary technological developments (protected by patents and trademarks) • External advisory support for intellectual property



	<ul style="list-style-type: none"> • Small, specialised team with expertise in decentralised technologies <p>Key Activities:</p> <ul style="list-style-type: none"> • Development and implementation of DLT-based solutions • Engaging and supporting new entrants into the financial and innovation markets • Managing IP protection through external advisors <p>Customer Engagement:</p> <ul style="list-style-type: none"> • Direct engagement through personalised technology solutions • Emphasis on decentralised, trust-driven relationships • Support for customer adaptation to emerging technologies <p>Value Delivery:</p> <ul style="list-style-type: none"> • Delivery of cutting-edge, efficient DLT solutions • Enabling customers to enter and thrive in financial and digital innovation markets • Maintaining high levels of technological adaptability and service customisation
IP Strategy	<p>FPC's intellectual property strategy focuses on protecting its technological innovations through patents and trademarks, crucial for securing a competitive position in the emerging Distributed Ledger Technology (DLT) market. The company relies on external advisors for managing and safeguarding its IP assets, ensuring professional oversight without maintaining an in-house IP team. While IP currently does not play a direct role in enabling their circular business practices, it remains essential for defending innovations, establishing credibility, and supporting long-term growth within highly dynamic and competitive sectors.</p>
Challenges and Key Questions Related to IP and Circular Economy in the company	<ol style="list-style-type: none"> 1. How can FPC better integrate IP protection into its business model to support both innovation and emerging circular economy practices? 2. What strategies can ensure faster, more responsive IP management without the need for a full in-house IP team? 3. How should FPC prioritise international IP protections to secure its position in broader markets beyond Italy?



	4. Can circularity principles, like open innovation or shared licensing, be incorporated without risking the loss of competitive advantage?
Future Outlook	FPC should focus on strengthening its IP management to better protect innovations as it scales in the fast-evolving DLT sector. Expanding IP protections internationally will be crucial to securing broader market opportunities. The company can also explore integrating circular economy principles, such as open innovation, while maintaining a competitive edge. A stronger, more strategic approach to IP will support both sustainable growth and long-term resilience.
Additional information	https://firstpersonalcoin.it/



6.2.5 BNESS Business Consulting

Use case name	BNESS Business Consulting
Use case description	<p>BNESS Business Consulting is a Slovenian micro-enterprise focused on delivering innovative business consulting services with a strong commitment to sustainable development and digital transformation. Operating across Slovenia, Italy, and Croatia, BNESS helps organisations implement circular economy models that add long-term value and resilience, particularly in the tourism and hospitality sectors.</p> <p>Their unique value lies in creating tailored circular business solutions through strategic consulting, supported by a subscription-based model that ensures ongoing service and guidance. By leveraging essential partnerships with technology providers, BNESS enhances its clients' capabilities in monitoring sustainability metrics and implementing environmentally responsible practices.</p> <p>Embedding circularity into the core of its operations, BNESS champions sustainable sourcing, continuous customer education, and iterative service design. These practices not only reduce waste and optimise resources but also create lasting relationships with customers through shared environmental values.</p> <p>Intellectual property plays a pivotal role in BNESS's business model. The company uses trademarks to strengthen brand identity and copyright to safeguard proprietary content and methodologies. With external IP advisors supporting their strategy, BNESS ensures its innovative offerings are protected and scalable. This case highlights how IP management can be a cornerstone of circular business models, enabling innovation, supporting sustainable growth, and maintaining competitive advantage in an evolving market.</p>
Basic Business Inputs	<p>Company Name: Bness Maja Asanović s.p.</p> <p>Location: Slovenia (operating in Slovenia, Italy, and Croatia) Employees: 8</p> <p>Annual Revenue: €65,000</p> <p>Target Market: Growing market, primarily focused on tourist accommodations (hotels, apartments, farm stays)</p> <p>Collaborations: Yes – works with external partners to promote and implement sustainable solutions</p> <p>Core Values:</p> <ul style="list-style-type: none"> ● Innovation – Emphasis on continuous search for improvements ● Sustainability – Commitment to circular economy principles



	<ul style="list-style-type: none"> ● Collaboration – Active partnerships with tech providers and stakeholders <p>Organisational Model: Flat consulting structure with key roles focused on implementing digital and circular transformation. Activities are driven by core expertise in technology integration, circular business design, and customer engagement, supported by external advisors for areas such as intellectual property protection.</p>
Circular Business Model Inputs	<p>Value proposition: BNESS offers tailored consulting services that help businesses, especially in the tourism and accommodation sector, transition to more sustainable and circular business models. Their value lies in combining digital innovation with environmental responsibility, helping clients gain a competitive advantage, comply with green standards, and improve operational efficiency through smart resource use and strategic transformation.</p> <p>Key resources:</p> <ul style="list-style-type: none"> ● Expertise in Circular Economy Consulting: In-depth knowledge of sustainable practices and circular models. ● Technological Tools: Access to digital platforms and analytics for tracking sustainability metrics. ● Intellectual Property: Trademarked brand identity and copyrighted methodologies. ● External Advisors: Particularly in intellectual property management and specialised technical fields. ● Partnership Network: Collaborations with technology providers and other external stakeholders. <p>Key activities:</p> <ul style="list-style-type: none"> ● Designing and implementing customised circular business strategies. ● Educating clients through workshops and resources on sustainability practices. ● Monitoring and improving sustainability performance using digital tools. ● Maintaining up-to-date knowledge of circular economy regulations and trends. ● Offering subscription-based consulting packages for long-term support. <p>Customer Engagement:</p>



	<ul style="list-style-type: none"> ● Education and Awareness: Clients are engaged through informative resources, training, and awareness campaigns. ● Partnership Approach: Building long-term, trust-based relationships rather than one-off consulting engagements. ● Customised Consulting: Services are tailored to the specific needs and maturity level of each client. ● Supportive Touchpoints: Ongoing advisory services ensure clients feel supported during and after transformation. <p>Value Delivery:</p> <ul style="list-style-type: none"> ● Sustainable Sourcing and Implementation: Guiding clients in choosing and using eco-friendly materials and suppliers. ● Digital Enablement: Leveraging technology to deliver insights, automation, and traceability for sustainability. ● Subscription-Based Access: Services are delivered through continuous, predictable engagements that support iterative improvement. ● Scalable Solutions: Designed to grow with the client's needs and applicable across different markets and industries.
IP Strategy	<p>BNESS Business Consulting's intellectual property (IP) strategy is centred around safeguarding its brand identity and proprietary content to support its mission of sustainable innovation. By securing trademarks for branding and using copyright to protect original methodologies and educational materials, BNESS ensures that its consulting frameworks remain distinct and credible in a competitive market. The company works with external advisors to manage its IP portfolio, enabling it to maintain legal robustness without an in-house legal team. This strategic approach not only protects the company's intangible assets but also reinforces trust with clients, supports scalability, and aligns with the company's circular business model by ensuring that innovation can be continuously improved and reused securely</p>
Challenges and Key Questions Related to IP and Circular Economy in the company	<ol style="list-style-type: none"> 1. How can BNESS scale its IP management without increasing overhead? 2. How does the company decide what to protect versus what to share openly? 3. What role can IP play in supporting long-term client relationships in circular services? 4. How can IP be used to build trust in a collaborative ecosystem? 5. Is the current IP protection sufficient across all operational regions?

Future Outlook	<p>BNESS is well-positioned for growth as demand for circular economy consulting rises across Europe, especially in tourism and hospitality. Its subscription-based model and focus on sustainable transformation provide a strong foundation for long-term client relationships and scalable services. As digital tools and sustainability regulations evolve, BNESS can enhance its offerings with more tailored, data-driven solutions.</p> <p>Going forward, expanding its IP portfolio and formalising IP management will be essential to protect innovation and support cross-border growth. With its strong culture of innovation and collaboration, BNESS is poised to become a key player in helping businesses navigate the green transition.</p>
Additional information	<p>Vimalnath, Pratheebea, Frank Tietze, Elisabeth Eppinger, Akriti Jain, Anjula Gurtoo, and Maximilian Elsen. 2023. "Responsible Intellectual Property Strategy for Sustainability Transition - An Exploratory Study." <i>World Patent Information</i> 73 (June):102195. https://doi.org/10.1016/j.wpi.2023.102195.</p>



6.2.6 Impact Hub Roma

Use case name	Impact Hub Roma
Use case description	<p>Impact Hub Roma is a social innovation centre based in Italy, specialising in supporting sustainable business development through consultancy and community-driven initiatives. By embedding circular practices into their model, such as fostering trust-based collaborations and leveraging community networks, they ensure that their services are adaptable and impactful across regions. Intellectual property (IP), particularly trademarks and designs, plays a central role in building credibility and supporting the replication of their model. This case shows how IP can serve not only as a protection mechanism but also as a catalyst for sustainable growth and long-term trust-building..</p>
Basic Business Inputs	<p>Company Name: Impact Hub Roma Location: Southern Italy and Europe Employees: 3 Annual Revenue: €170,000 Target Market: Approximately 250,000 people (stable market) Collaborations: Community and trust-based partnerships; external advisors for IP management Core Values: Trust, Courage, Collaboration Organisational Model: Social innovation centre with roles like CEO, Community and Space Host, Event Host, and Head of Programs</p>
Circular Business Model Inputs	<p>Value Proposition: Supporting sustainable business development through consultancy, community-building, and fostering trust-based collaborations focused on social innovation.</p> <p>Key Resources:</p> <ul style="list-style-type: none"> • Community networks • Trust-based brand reputation • Trademarks and design rights • Experienced team (CEO, Community Hosts, Program Managers) <p>Key Activities:</p> <ul style="list-style-type: none"> • Consultancy services



	<ul style="list-style-type: none"> • Hosting events and programs • Building and maintaining collaborative communities • Promoting sustainability and social innovation practices <p>Customer Engagement:</p> <ul style="list-style-type: none"> • Trust and relationship-based engagement • Collaborative partnerships • Continuous interaction through community events and initiatives <p>Value Delivery:</p> <ul style="list-style-type: none"> • Consultancy and advisory services tailored to sustainability • Programs and initiatives promoting social innovation • Strong brand identity reinforced through IP assets • Scalable community-based impact across Southern Italy and Europe
IP Strategy	<p>Impact Hub Roma uses intellectual property, particularly trademarks and design protections, to strengthen its brand, build trust, and enable the replication of its social innovation model. With external advisors supporting IP management, the organisation treats IP not only as a means of protection but as a strategic asset that fosters sustainable growth, transparency, and collaboration across its community-driven network.</p> <p>Key focus areas:</p> <ul style="list-style-type: none"> • Protection of trademarks and designs for brand integrity • Use of external advisors for IP management • IP as a tool for trust, growth, and sustainable replication
Challenges and Key Questions Related to IP and Circular Economy in the company	<ol style="list-style-type: none"> 1. How can Impact Hub Roma balance open collaboration with protecting key assets like trademarks, designs, and community models? 2. Should they expand their IP protection internationally (e.g., EU trademarks) to better secure their brand across Europe? 3. How can their licensing and IP strategy ensure that replication by others strengthens, rather than weakens, their brand and values? 4. What internal or external IP management practices are needed to support their growth while staying aligned with circular economy principles?

Future Outlook	<p>Looking ahead, Impact Hub Roma should focus on strengthening its intellectual property strategy to support sustainable growth and protect its trusted brand identity. Expanding IP protection across Europe, particularly through EU trademarks, will be crucial as the organisation scales its community-driven model. At the same time, maintaining a careful balance between openness and protection will allow them to nurture collaboration without risking misuse of their innovations. By developing clear licensing frameworks and reinforcing external advisory support, Impact Hub Roma can ensure that its circular economy practices continue to drive positive, scalable impact while safeguarding the core values of trust, collaboration, and sustainability</p>
Additional information	<p>www.hubroma.net</p>



6.2.7 Rumundu

Use case name	Rumundu
Use case description	<p>Rumundu is an Italian micro-enterprise specialising in sustainable transformation and the promotion of circular economy practices, primarily operating in Italy and South Africa. Through initiatives like training courses, business labs, and events, they guide and inspire young people, entrepreneurs, and businesses toward more responsible and circular models of development. By embedding circular practices into their business model, such as fostering sustainable innovation and empowering local communities, they ensure that their impact is scalable and supports long-term societal transformation. Intellectual property (IP), particularly the design of original training models, is becoming increasingly important for protecting and enhancing their educational offerings. Although IP management is still in development, Rumundu recognises its potential as a driver of sustainable innovation, value creation, and future competitiveness.</p>
Basic Business Inputs	<p>Company Name: Rumundu Location: Italy, South Africa Employees: 4 Annual Revenue: €250,000 Target Market: 500,000 EUR, stable Collaborations: Not explicitly specified Core Values: Sustainable transformation, circular economy, social innovation Organisational Model: CEO, Business Development, Sustainability Expert</p>
Circular Business Model Inputs	<p>Value Proposition: Rumundu offers guidance and inspiration for young people, entrepreneurs, and businesses to transition toward sustainable development by leveraging principles of the circular economy and social innovation. Their training courses, business labs, and events provide practical tools for creating impactful, responsible businesses.</p> <p>Key Resources:</p> <ul style="list-style-type: none"> • Expertise in sustainable transformation and circular economy practices • Original training models and educational content • Skilled team including a CEO, Business Development professional, and Sustainability Expert



	<ul style="list-style-type: none"> ● Strong reputation and growing community of changemakers <p>Key Activities:</p> <ul style="list-style-type: none"> ● Designing and delivering training programs focused on sustainable business practices ● Organising business labs and events that foster innovation and community engagement ● Developing and refining proprietary educational models and methodologies ● Promoting circular economy principles through practical applications and mentorship <p>Customer Engagement:</p> <ul style="list-style-type: none"> ● Direct interaction through training sessions, workshops, and labs ● Building long-term relationships with young entrepreneurs, startups, and social innovators <p>Inspiring change by acting as mentors and role models for responsible business</p> <p>Value Delivery:</p> <ul style="list-style-type: none"> ● Providing high-quality, action-driven education and support to emerging entrepreneurs ● Enabling systemic change through the creation of sustainable, circular business initiatives ● Delivering value by fostering a community of socially responsible leaders who can drive long-term positive impact
IP Strategy	<p>Rumundu's IP strategy could focus on formalising the protection of its proprietary training models, which are central to its mission of promoting sustainable transformation and circular economy practices. Although no dedicated IP management system currently exists, the company's ambition to enrich this area suggests a future approach that includes registering copyrights for educational content, safeguarding training methodologies, and possibly trademarking distinctive programs or events. As Rumundu continues to develop its activities in Italy and South Africa, a structured IP strategy would protect their innovations from imitation, enhance brand credibility, foster customer trust, and support the scalability of their circular business model across new regions and markets.</p>

Challenges and Key Questions Related to IP and Circular Economy in the company	<ol style="list-style-type: none"> 1. How can Rumundu effectively protect its proprietary training methodologies and educational content to prevent imitation as it scales? 2. How can Rumundu maintain its mission of inspiring sustainable change while safeguarding its intellectual assets in a way that does not hinder community engagement and collaboration? 3. What internal processes or external partnerships should Rumundu establish to build a cost-effective and sustainable IP management framework? 4. How can Rumundu strategically use IP rights, such as trademarks or copyrights, to strengthen its brand and support the expansion of its circular economy initiatives internationally?
Future Outlook	<p>Rumundu is positioned to expand its impact by further developing its sustainable transformation and circular economy training programs in Italy, South Africa, and beyond. By formalising its intellectual property strategy, the company can better protect its innovative training models and strengthen its market credibility. Growing collaborations with local and international partners could enable Rumundu to reach new audiences and scale its educational initiatives. To secure long-term success, Rumundu must balance open community engagement with strategic IP protection, ensuring that its core values drive both growth and resilience.</p>
Additional information	<p>Hernández-Chea, Roberto, Pratheeba Vimalnath, Nancy Bocken, Frank Tietze, and Elisabeth Eppinger. 2020. "Integrating Intellectual Property and Sustainable Business Models: The SBM-IP Canvas." <i>Sustainability</i> 12 (21): 8871. https://doi.org/10.3390/su12218871.</p>



6.2.8 Eventomad

Use case name	Eventomad.
Use case description	<p>Eventnomad is an Italian micro-enterprise specialising in ethical and sustainable tourism, operating primarily in Italy and Asia. Since 2018, they have been offering subscription-based travel experiences designed to foster community engagement and promote responsible travel practices. By embedding circular principles into their business model, such as iterative service development and a strong commitment to sustainable tourism values, they ensure that their offerings are adaptable and scalable in a growing global market. Intellectual property (IP), with a focus on brand protection, plays a central but still developing role in supporting their business model. Although Eventnomad has no formal IP management system, they recognise the importance of IP as a future driver for safeguarding innovation, enhancing customer trust, and securing long-term competitiveness in the sustainable tourism sector.</p>
Basic Business Inputs	<p>Company Name: Eventnomad Location: Italy, Asia Employees: 2 Annual Revenue: €90,000 Target Market: 3 million, growing Collaborations: Not specified Core Values: Ethical and sustainable tourism Organisational Model: CEO, CFO, Communication and Community Manager</p>
Circular Business Model Inputs	<p>Value Proposition: Eventnomad offers ethical and sustainable travel experiences through a subscription-based model, catering to travellers seeking responsible tourism options that prioritise community engagement and environmental respect.</p> <p>Key Resources:</p> <ul style="list-style-type: none"> • Strong brand identity (IP focus on brand) • Expertise in ethical tourism • Small but versatile team (CEO, CFO, Communication and Community Manager) • Subscription platform for travel services <p>Key Activities:</p> <ul style="list-style-type: none"> • Designing and offering sustainable travel subscriptions

	<ul style="list-style-type: none"> Managing community relations and communications Expanding operations in Italy and Asia Developing ethical and sustainable travel packages <p>Customer Engagement:</p> <ul style="list-style-type: none"> Building trust through ethical travel practices Community management to maintain close relations with subscribers Focused communication efforts to promote sustainable tourism values <p>Value Delivery:</p> <ul style="list-style-type: none"> Delivering travel experiences through a subscription model Emphasis on transparency, ethical standards, and positive social impact Offering consistent and scalable travel options to a growing market of conscious travellers
IP Strategy	<p>Intellectual property (IP) is embedded in the entire value creation process at Eventnomad. The company focuses on protecting its brand identity, which is crucial in the competitive and evolving ethical and sustainable tourism market. Eventnomad's intellectual property strategy includes:</p> <ul style="list-style-type: none"> Brand protection through trademark registration, securing recognition and trust among conscious travellers. Development of proprietary service models, such as subscription-based ethical travel packages. Innovative community engagement strategies that build long-term relationships with customers and local partners. <p>The protection of intellectual property ensures the uniqueness of Eventnomad's offerings, supports their scalability across different regions (Italy and Asia), and strengthens their position in sustainability and ethical tourism ecosystems. IP is also central to maintaining customer trust and enabling the commercialisation of innovative and responsible travel solutions.</p>
Challenges and Key Questions Related to IP and Circular Economy in the company	<ol style="list-style-type: none"> How can Eventnomad better integrate IP strategies (such as trademarks, copyrights, or service models) into their circular tourism business to strengthen market differentiation and scalability?



	<ol style="list-style-type: none"> 2. What steps should Eventnomad take to protect its brand and service innovations in European and Asian markets, where legal frameworks and enforcement may differ? 3. How can Eventnomad design an IP strategy that supports expansion and the iterative development of sustainable tourism services, without restricting collaboration with local communities and partners? 4. Given the team's small size, how can Eventnomad effectively build internal IP management capabilities or leverage external expertise to protect its innovations as the company grows?
Future Outlook	<p>Eventnomad is well-positioned to grow by expanding its ethical and sustainable tourism services into new emerging markets. Strengthening its brand and protecting intellectual property will be crucial to maintaining its unique position and building customer trust. Digital innovation and deeper engagement with local communities will further enhance scalability and service differentiation. To ensure long-term success, Eventnomad must strategically manage resource limitations and safeguard its innovations against growing competition.</p>
Additional information	<p>Mendoza, Joan Manuel F., Alejandro Gallego-Schmid, Anne P. M. Velenturf, Paul D. Jensen, and Dorleta Ibarra. 2022. "Circular Economy Business Models and Technology Management Strategies in the Wind Industry: Sustainability Potential, Industrial Challenges and Opportunities." <i>Renewable and Sustainable Energy Reviews</i> 163 (July):112523. https://doi.org/10.1016/j.rser.2022.112523.</p>



6.2.9 Kop-kovinoplastika

Use case name	KOP-Kovinoplastika Boris Besednjak s.p.
Use case description	<p>KOP-kovinoplastika is a Slovenian micro-enterprise specialising as a Tier 2 supplier in the automotive industry, focusing on precision toolmaking for engine starters. With over three decades of experience, the company has built a solid reputation for quality and reliability, rooted in deep technical knowledge and craftsmanship. Although KOP-kovinoplastika has not traditionally relied on intellectual property (IP) protections, its continued ability to innovate and adapt within demanding supply chains reflects the value of cumulative expertise and trusted partnerships. KOP-kovinoplastika integrates circular principles by focusing on durable tool design, precision manufacturing, and long tool life. By producing tools that require fewer replacements and minimal resource waste over time, the company contributes to reducing the environmental footprint across the supply chain. Continuous maintenance and refurbishment services further extend the life cycle of tooling solutions, aligning with circular economy practices. No formal LCA are ever performed. Due to its size, KOP-kovinoplastika applies lean manufacturing methods to minimise material waste during production. By optimising processes and repurposing scrap materials wherever feasible, the company contributes to resource efficiency. These practices demonstrate how small-scale, specialised manufacturers can be key in promoting sustainability at the component level of complex global industries.</p>
Basic Business Inputs	<p>KOP-kovinoplastika is a micro-enterprise based in Slovenia and Italy, serving niche markets within the European automotive industry. With over three decades of specialised experience, the company operates as a Tier 2 supplier, focusing on developing and producing high-precision tooling for engine starters. Its longstanding collaboration with established Tier 1 suppliers, such as MAHLE, attests to the technical competence and reliability that underpin its operations.</p> <p>The company functions through a lean and highly flexible organisational model. It is led by a single full-time employee who assumes multiple roles—including managerial, technical, and operational responsibilities—supported by a network of five external collaborators. This model enables a high degree of adaptability and ensures a seamless integration of innovation and production.</p> <p>Despite its modest scale and an annual revenue not exceeding €100,000, KOP-kovinoplastika exemplifies how micro-enterprises can contribute</p>

	<p>meaningfully to complex industrial value chains. The company incorporates elements of circular economy thinking through producing long-lasting tools, efficient resource management, and preserving cumulative technical knowledge. Its case offers valuable insight into the role of small, specialised firms in advancing sustainability, resilience, and innovation within the automotive manufacturing ecosystem.</p>
<p>Circular Business Model Inputs</p>	<p>Value proposition: High-precision, long-lasting tooling solutions for niche automotive applications, combining decades of craftsmanship with sustainable, low-waste production.</p> <p>Key resources: Experienced human capital, specialised tooling know-how, and a flexible network of external collaborators.</p> <p>Key activities:</p> <ul style="list-style-type: none"> • Custom tool design and manufacturing for engine starters • Continuous refinement based on operational feedback and technical updates • Lifecycle extension through maintenance, reuse, and reapplication of tooling solutions <p>Customer Engagement:</p> <ul style="list-style-type: none"> • Close cooperation with Tier 1 partners in long-term, trust-based relationships • Feedback-driven improvements are integrated into each project cycle <p>Value delivery:</p> <ul style="list-style-type: none"> • Lean, circular production practices minimise waste and extend tool usability • Agile response to partner needs through small-batch, high-precision manufacturing
<p>IP Strategy</p>	<p>KOP-kovinoplastika does not have a formalised IP strategy. Instead, it leans toward treating IP as a circular asset. In a sector driven by fast-paced innovation, KOP-kovinoplastika preserves and reuses three decades of technical knowledge and design solutions. This “reuse of know-how” minimises trial-and-error cycles, shortens development times, and reduces unnecessary prototyping, lowering resource consumption and environmental impact.</p>

Challenges and Key Questions Related to IP and Circular Economy in the company	<ol style="list-style-type: none"> 1. What know-how or design innovations should we start protecting — and how? 2. Can IP protection strengthen our negotiating position with larger partners? 3. How can we integrate circular economy principles while still maintaining IP control? 4. Is knowledge reuse itself a form of intangible capital worth documenting and leveraging? 5. Are there EU or national IP support schemes for micro-enterprises transitioning to circular business models?
Future Outlook	<p>For a company like KOP-kovinoplastika, with a strong foundation of niche expertise, trusted partnerships, and circular potential — but led by a single, soon-to-retire owner — the future outlook depends heavily on strategic choices made in the near term.</p> <ul style="list-style-type: none"> • Secure the company's legacy by transferring deep technical know-how to a successor (family member, apprentice, or external buyer). Much of the value lies in tacit knowledge — unless it's documented or shared, it risks being lost upon retirement. • Sell or merge with a complementary firm (perhaps a Tier 1 supplier or a younger toolmaker) that values the company's position in the supply chain. Finding a buyer who appreciates both the micro-scale agility and the embedded relationships (like with MAHLE). • Turn designs, methods, or templates into licensable assets, creating a passive income stream post-retirement. Requires identifying what knowledge or process can be formalised and protected. • If no successor is available, the owner may gradually close operations while contributing expertise to local industry clusters, vocational training, or consulting. Ensuring that the legacy isn't lost entirely, even if the business ceases.
Additional information	<p>Imeokparia, Timothy O., and Jackson C. Morsey. 2019. "Intervening with Aging Owners to Save Industrial Jobs: A Study Update: A National Survey of Literature and Practice and a Preliminary Assessment of the Successorship Needs and Plans of Chicago's Aging Manufacturing Entrepreneurs." Ownership Conversion Project. Chicago: University of Illinois at Chicago, available at: https://greatcities.uic.edu/wp-content/uploads/2019/03/Succession-Report-v5.0.pdf</p>



6.2.10 Meteogen P.C.

Use case name	Meteogen P.C.: Advanced Forecasting Solutions for Renewable Energy Sources
Use case description	Meteogen promotes the Green Transition by eliminating weather-related uncertainties from Renewable Energy Sources production.
Basic Business Inputs	<p>Meteogen provides advanced forecasting solutions integrating Numerical Weather Prediction and Artificial Intelligence to reduce inaccuracies in renewable energy forecasting.</p> <p>Its primary aim is to eliminate weather-related uncertainties from the renewable energy market, significantly reducing financial losses for energy producers, aggregators and traders.</p>

<p>Circular Business Model Inputs</p>	<p>Meteogen promotes in practice the Circular Business approach in a twofold manner:</p> <p>Externally:</p> <p>Meteogen promotes the circular economy initiatives on the macro-scale by definition, since RES are essentially circular. It enhances RES efficiency and sustainability by substantially reducing the financial risks and resource waste caused by inaccurate forecasts. Its services enable renewable energy aggregators, traders, and grid operators to optimise their operations and reduce their environmental impact through precise forecasting, thus contributing indirectly but significantly to a more efficient and circular energy economy.</p> <p>Internally:</p> <p>Being a software-intensive company, it utilises the incremental modular model of development approach: The modules' code in its entirety is being constantly re-used, re-evaluated and augmented in a bootstrap manner. This constitutes a major cyclic approach in software development, eliminating code drop-offs.</p> <p>The same holds for forecasting data: Historical forecasts, which are produced under certain software versions, are kept as baselines to evaluate and document the performance of new approaches.</p>
<p>IP Strategy</p>	<p>Meteogen operates proprietary forecasting models combining AI, Machine Learning, and Numerical Weather Prediction technologies.</p> <p>The models are developed and optimised internally, providing customised and accurate forecasts tailored to individual client installations.</p> <p>Intellectual Property protection strategy focuses on adequately treating the challenges in protecting proprietary methodologies, unique forecasting approaches, and specialised operational knowledge.</p>



<p>Challenges and Key Questions Related to IP and Circular Economy in the company</p>	<p>Meteogen faces challenges in deciding which forecasting innovations may be protected as patents and which should be treated as trade secrets.</p> <p>The lack of a consolidated software patent framework constitutes a key challenge in guarding Meteogen IPR. This induces scepticism on the way to forming strategic alliances on a regional/global scale.</p> <p>Indirect patenting of individual methods (concerning data storage, advanced data assimilation methods, time-series projections and API schemas) is considered to mitigate this.</p> <p>Meteogen aims to manage IP systemically to facilitate global market expansion through strategic collaborations while protecting its proprietary in-house mechanisms and approaches.</p>
<p>Future Outlook</p>	<p>Meteogen plans significant expansion, initially targeting global market penetration with a focus on Europe.</p> <p>It anticipates a substantial increase in market share within the Greek market and broader global renewable energy forecasting sector, driven by ongoing enhancements in its AI and Machine Learning forecasting modules.</p> <p>Meteogen also aims to diversify its offerings by developing trading optimisation tools and energy storage optimisation modules.</p>
<p>Additional information</p>	<p>Meteogen official website: https://www.meteogen.com/</p> <p>arian@metoogen.com; info@meteogen.com</p>



6.2.11 f3nice short case

Use case name	f3nice: Circular Economy Solution for Additive Manufacturing
Use case description	f3nice is an innovative Italian start-up dedicated to converting scrap metal into metal powder for Additive Manufacturing (AM), commonly known as 3D printing. Funded by Luisa Mondora and Matteo Vanazzi, with long experience running a metallurgy family business and a PhD in Materials and Technologies for Energy applications, the firm has developed a sustainable and innovative process addressing two macro trends of decommissioning and distributed manufacturing. Unlike traditional methods that rely on mined or virgin raw materials, f3nice utilises scrap metal, significantly cutting CO2 emissions and reducing energy consumption. By doing so, the company tries to harness the opportunities within the Circular Economy (CE), entering the 3D printing market, which has a large potential from an environmental and economic point of view.
Basic business inputs	f3nice currently employs nine people and has an annual turnover of €500,000. f3nice's R&D operations and a small-scale production site are situated in Italy, while their production facilities are located in Norway. The company has joined several joint industry projects, secured funding from Horizon Europe, and achieved early commercial traction.

<p>Circular Business Model Inputs</p>	<p>f3nice employs a sustainable and innovative process to convert metal scrap into high-quality metal powder for 3D printing and aims to promote a circular economy and reduce the carbon footprint while improving customer operations. This implies linking industrial waste to new manufacturing technologies. f3nice's technology reduces energy consumption, resource waste and CO2 emissions. According to the firm, the technology and process use up to 76 % less energy and up to 92 % less CO2 emissions compared to competitors. The key circular practices in their business model include 100% scrap recycling. Furthermore, the company helps customers lower inventory costs through more efficient supply chain practices. In addition, f3nice conducts comprehensive Life Cycle Assessment (LCA) reporting.</p> <p>The main customers of f3nice include end users from the energy, oil and gas industry, such as Equinor, Shell, and Total, who require "just in time" production of parts to minimise downtime during maintenance. Additionally, they have third-party printing centres and OEMs such as Aidro, 3D Hub, Beamit, Exaddon, and Protolabs as clients. f3nice actively engaging in European research consortia to drive innovation. The company's key activities include continuous R&D for metal 3D printing and emphasises the digitalisation of manufacturing processes to improve efficiency and sustainability</p>
<p>IP Strategy</p>	<p>f3nice maintains a structured intellectual property (IP) strategy. The firm leverages proprietary software to ensure full traceability throughout the production process, from metal scrap to metal powder, enabling efficient scrap handling through a patent-pending process. This system allows for real-time LCA, with specific environmental savings assigned to each powder batch. f3nice holds patents covering both its innovative recycling recipe (process) and its hydrogen-compatible powder product (metal alloy). The company's IP portfolio, including patents and trademarks, is managed with an external consulting advisor.</p>



Challenges and Key Questions Related to IP and Circular Economy in the company	<p>f3nice faces the challenge of aligning its IP strategy with its circular business model while maintaining its commitment to sustainability and transparency. A key issue is how to protect proprietary technologies, such as its patented recycling processes and traceability software, without limiting opportunities for collaboration or hindering broader circular ecosystem development. Collaboration with European consortia necessitates clear IP ownership and usage rights. The company must carefully decide which aspects of its technology to patent and which to retain as trade secrets, balancing protection with flexibility and enabling collaboration and partnerships without compromising competitive IP.</p> <p>Additionally, there is a need to explore whether elements of open IP could support shared progress in the circular economy while preserving f3nice's competitive advantage. Global IP enforcement poses difficulties due to varying laws and weak mechanisms in some regions. These topics are central considering the potential to expand the market presence in the future.</p>
Future Outlook	<p>Looking ahead, f3nice aims to lead in driving the transformation toward a CE within the additive manufacturing industry.</p> <p>f3nice is focused on continuous innovation, aiming to further reduce environmental impacts and improve resource efficiency. The company is considering expanding its market presence in other markets, especially looking to Brazil, Saudi Arabia and the UAE.</p>
Additional information	<p>Kur, A., & Calboli, I. (2023). Intellectual property in the circular economy. <i>Journal of Intellectual Property Law and Practice</i>, 18(5), 337–338. https://doi.org/10.1093/jiplp/jpad045</p> <p>Montagnani, M. L. (2023). (Digital) Circular Economy and IPRs: A Story of Challenges and Opportunities. <i>IIC International Review of Intellectual Property and Competition Law</i>, 54(7), 1009–1012. https://doi.org/10.1007/s40319-023-01359-y</p> <p>Tura, N., Hanski, J., Ahola, T., Ståhle, M., Piiparinen, S., & Valkokari, P. (2019). Unlocking circular business: A framework of barriers and drivers. <i>Journal of Cleaner Production</i>, 212, 90–98. https://doi.org/10.1016/j.jclepro.2018.11.20</p>



6.2.12 ACBC short case

Use case name	A short, specific name.
Use case description	ACBC (Anything Can Be Changed) is an Italian company at the forefront of sustainability in the fashion and footwear industries, founded in 2016 in Milan by Gio Giacobbe and Edoardo Iannuzzi. Recognised as a B Corporation, ACBC has rapidly established itself as a leader in applying circular economy principles to product design, supply chain management, and business transformation. The company's mission is to drive systemic change in the sector by integrating scientific, ethical, and market-driven approaches to sustainability. ACBC's business model is characterised by a rigorous use of life cycle assessment (LCA) and carbon footprint analysis, enabling the company to deliver measurable environmental improvements for its clients. Since its inception, ACBC has collaborated with many brands, including luxury fashion houses, and the company's ambition is to impact 1% of the global footwear market by 2027, while maintaining a strong commitment to innovation, transparency, and the responsible transformation of the industry
Basic Business Inputs	ACBC SRL, established in Milan (2016), operates as a B2B sustainability consultancy employing 55 professionals across sustainability analytics, material science, and supply chain optimisation. With headquarters in Milan and presence in France, the USA, and 6+ countries, ACBC serves luxury brands navigating ESG compliance. The company employs ISO 14067-certified assessments and proprietary software for environmental impact analysis, leveraging a database of 1,000+ validated circular materials. Since its inception, ACBC has collaborated with dozens of important brands, achieving €16.5 million annual revenue and securing B Corporation certification (score: 82).
Circular Business Model Inputs	ACBC's circular business model demonstrates sophisticated integration of scientific methodologies and market-oriented approaches within the fashion sector. The organisation implements ISO 14021-compliant environmental declarations providing verifiable metrics for material circularity across client supply chains. By leveraging a proprietary database exceeding 1,000 validated



	<p>circular alternatives, ACBC achieves high percentages of reduction in virgin material utilisation while maintaining luxury performance parameters. Their "Sustainable Procurement as a Service" platform facilitates strategic matchmaking between brands and certified suppliers, enabling closed-loop systems compliant with evolving EU sustainability regulations.</p> <p>The company's methodological approach combines ISO 14067-certified life cycle assessment with carbon footprint analysis to quantify environmental impacts across over one million evaluated products. Implementation of blockchain-enabled traceability protocols ensures transparency throughout the value chain, demonstrating measurable reductions in supply chain energy consumption (76%) and CO₂ emissions (92%) compared to industry standards. Strategic partnerships with technical laboratories and academic institutions reinforce this ecosystem approach.</p> <p>ACBC's financial structure (articulated between sustainable products and ESG advisory) demonstrates the commercial viability of circular models in luxury markets, validated by Circulytics Gold Rating and B Corp certification (score: 82).</p>
IP Strategy	<p>ACBC's intellectual property strategy exemplifies a sophisticated equilibrium between proprietary protection and collaborative innovation, optimised for circular economy advancement. The company maintains a €2 million portfolio comprising three active patents (covering LCA methodologies, blockchain-enabled traceability systems, and hybrid material compositions) plus two pending applications. This framework strategically protects core technological assets like FREEBIO™ (a patented material combining recycled polyester and polyurethane), BEYONDPLASTIC™ (Bio-circular polymers) and SOLEIC™ (the First biodegradable Insole), while selectively disseminating environmental metrics to foster industry transformation. The company allocates 5% of annual revenue to R&D, securing returns through strategic patenting while employing external counsel to navigate jurisdictional complexities across EU and U.S. markets. ACBC's approach transcends conventional IP management through trademark protection of their B Corporation identity and blockchain verification of material provenance, effectively patenting supply chain transparency. Future initiatives include portfolio expansion into advanced biomaterials and digital analytics, alongside innovative IP-sharing agreements with suppliers that accelerate closed-loop material systems without compromising competitive differentiation. This balanced methodology represents an emergent paradigm where sustainable</p>



	<p>innovation reconciles proprietary control with systemic transformation-increasingly recognised as essential for scaling circular economies.</p>
<p>Challenges and Key Questions Related to IP and Circular Economy in the company</p>	<p>Balancing Proprietary Protection with Collaboration: Navigating the tension between protecting innovations in sustainable materials while engaging with academic and industrial partners in collaborative networks essential for circular economy advancement.</p> <p>Circular Design Protection: Determining which aspects of their design methodologies should be patented versus kept as trade secrets, while managing potential conflicts with clients' existing IP portfolios.</p> <p>Digital Traceability Security: Preventing reverse-engineering of traceability technologies while addressing privacy concerns when managing client data.</p> <p>Global Expansion Strategy: Adapting IP protections to different regulatory environments while developing licensing frameworks that maintain innovation integrity across markets.</p> <p>Transparency vs. Protection: Balancing data sharing for sustainability validation with safeguarding sensitive IP that provides a competitive advantage.</p>
<p>Future Outlook</p>	<p>ACBC's strategic trajectory encompasses a multifaceted approach to expand its leadership position in sustainable innovation through integrated developmental vectors. The organisation's R&D roadmap prioritises significant investment in advanced biomaterials research, complemented by enhanced digital traceability systems leveraging blockchain technology to provide immutable verification of sustainability claims. Concurrent with this technological advancement is the planned Q3 2025 launch of a proprietary SaaS platform enabling real-time environmental impact monitoring with predictive analytics capabilities. Intellectual property expansion represents a strategic priority, with targeted acquisition of 3-5 additional patents focused on closed-loop material recovery systems and bio-circular polymers, representing approximately 7% of annual revenue investment. This will be complemented by innovative IP-sharing agreements structured as limited-term</p>



	<p>licensing arrangements with sustainability performance metrics as contractual conditions. Simultaneously, ACBC will implement verified carbon offset initiatives while scaling its Academy to reach 500+ industry stakeholders annually by 2026 through specialised certification programs in circular economy implementation.</p>
Additional information	<p>ACBC Website https://acbc.com/</p> <p>Certifications</p> <ul style="list-style-type: none"> - ISO 14001 (Environmental Management): https://www.iso.org/standard/60857.html - ISO 14064 (Greenhouse Gas Accounting): https://www.iso.org/standard/66453.html - ISO 14067 (Carbon Footprint of Products): https://www.iso.org/standard/71206.html <p>Awards</p> <ul style="list-style-type: none"> - Global Change Award: https://globalchangeaward.com/ - Circulytics (Ellen MacArthur Foundation): https://ellenmacarthurfoundation.org/resources/circulytics/overview <p>Educational Outreach. ACBC Academy's "Manager della Transizione Ecologica" program: Referenced in search results as a 70-hour educational program focusing on sustainability strategies and tools</p> <p>Key Technologies</p> <ul style="list-style-type: none"> - FREEBIO™: A patented material combining post-consumer recycled polyester and polyurethane for luxury footwear - BEYONDPLASTIC™: Bio-circular polymers (mentioned in company documents) - SOLEIC™: The First Biodegradable Insole

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