Interreg CENTRAL EUROPE

Co-funded by the European Union

CURIOST

Circular design and development of sustainable products in 4 key sectors in Central Europe

Version 1

NOVEMBER 2024



GAP AND CHALLENGES ANALYSIS FOR DIGITAL AND CIRCULAR DESIGN IN SUSTAINABLE PRODUCT DEVELOPMENT

RESULT D 1.1.2

Table of contents

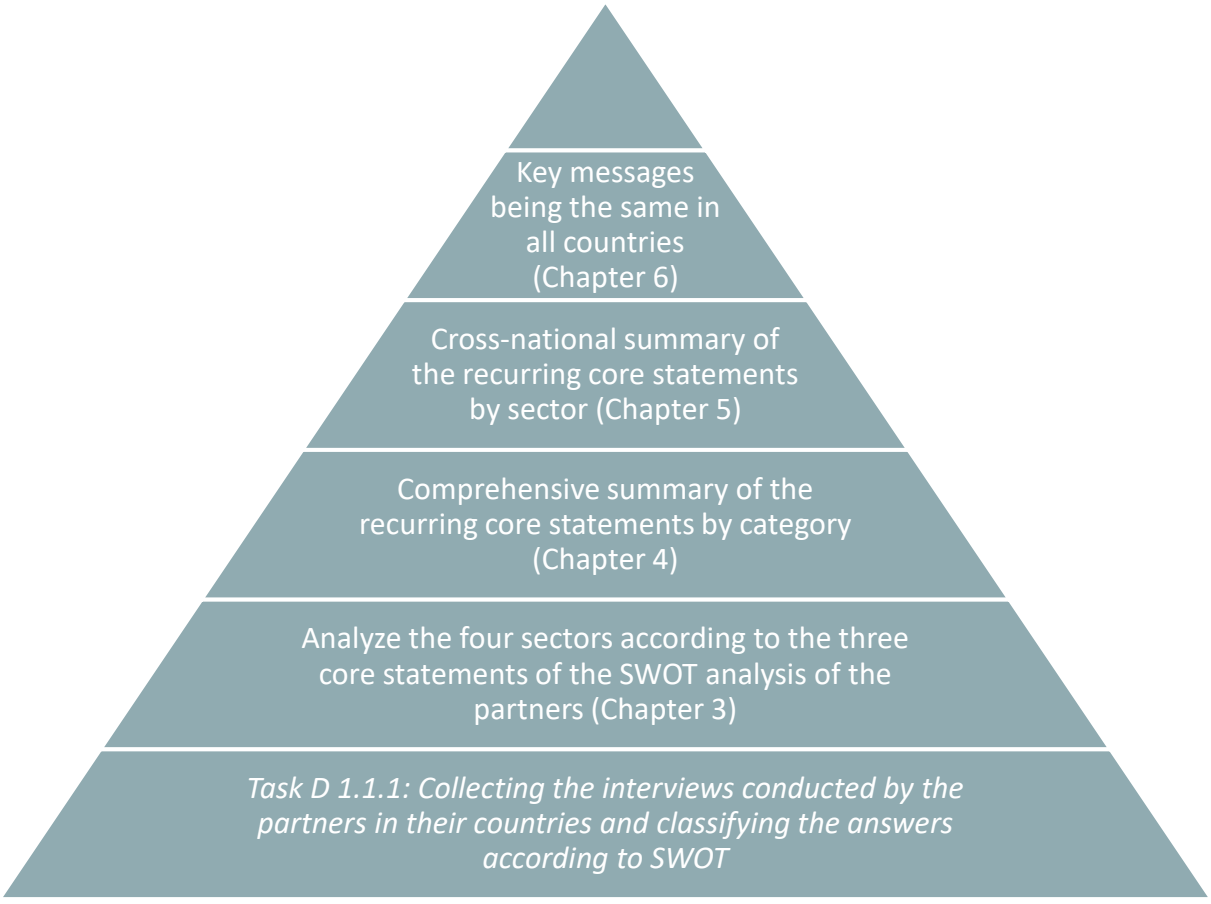
1. INTRODUCTION 2
2. PROCEDURE FOR D1.1.2 2
3. ANALYZING THE 4 SECTORS 4
4. CROSS-PARTNER SUMMARY 41
5. CROSS-NATIONAL SUMMARY 59
6. Key messages from all countries 77

1. INTRODUCTION

This report for deliverable D 1.1.2 for the CURIOST project analyzes the status quo regarding the implementation of the sustainability strategy in the partner countries. Some sectors are not so relevant in all countries or regions and therefore not assessed.

2. PROCEDURE FOR D1.1.2

In deliverable D 1.1.1 interviews were conducted with relevant companies in each of the partner countries and their statements were classified as part of a SWOT analysis. This data from the partners formed the basis for the analysis. The further basic procedure. is shown in the following diagram.



Three core statements were identified from the partner reports for the four sectors of plastics, mechanics & mechatronics, packaging and construction & building. This was done by evaluating the overall statements and looking for the 3 statements that appeared most frequently in the responses of the various interviewees, broken down by sector.

From these core statements for the respective partners, the recurring core statements for the respective countries were extracted across all partners. In this way, a focus was created for the respective country.

In the next step, the country-specific core statements were analyzed across all countries and a search was conducted to determine which statements are identical in all countries for the SWOT analysis. In the previous procedure, the different 4 sectors were always separated.

3. ANALYZING THE 4 SECTORS

The 4 sectors were each analyzed according to 3 key statements from the partners' SWOT analyses.

SWOT-Analysis for General

Partner	Strengths	Weaknesses	Opportunities	Obstacles
Biz-up	**Awareness of the circular economy:** Companies recognize the necessary transition to a circular economy and are prepared to take appropriate measures. **Compliance with legal requirements:** The companies strictly adhere to legally prescribed measures, which provides a solid basis for further steps.	**Little internal focus:** Little attention is paid to reducing plastic waste within the company. **Lack of long-term planning:** The further development of recommended measures for the circular economy is hardly being driven forward, which leads to a stagnating innovation process.	**Economic subsidies:** Potential government subsidies could serve as an incentive to implement new measures, even if they are currently perceived as too low. **Innovation in internal processes:** The transition to a circular economy could revolutionize internal work processes and increase efficiency.	**Risk aversion**: The perceived risks of introducing circular economy measures may be considered higher than the opportunities, which hinders progress. **Insufficient subsidies:** Low economic subsidies could further reduce the willingness to invest in sustainable technologies. **Competitive pressure:** Companies that focus

	Focus on external services: The existing approach of providing services for customers and markets shows a proactive attitude towards external requirements.	**High investment costs:** The transition to a circular economy requires considerable investment, which deters many companies.	**Growing market for recycling solutions:** With an increasing focus on sustainability, new markets for recycling services and products may emerge.	less on the circular economy could offer cheaper alternatives, making competition more difficult.
CPU	**Social awareness**: Sustainability is gaining importance in society, which motivates companies to adopt sustainable practices. **Promotion of research and development**: Strategies to promote research and innovation offer opportunities for the development of new technologies and approaches. **Pioneering role in Austria**: Austria is considered a pioneer in	**Complexity of regulation**: A flood of regulations without a clear overview and insight into the benefits can overwhelm companies. **High production costs**: The costs of implementing sustainable business models prevent many companies from adopting them. **Lack of training**: Current business models and training often do not take into	**Digital product passport**: The introduction of a digital product passport is seen as a positive aspect for sustainability and could increase transparency. **Opportunities at national level**: Circular economy strategies in Austria offer opportunities for transition, including green public procurement and	**Overburdened by regulations**: Companies fear that they will be overwhelmed by the new regulations, which could hinder implementation. **Slow transformation**: The lack of implementation and slow transformation could slow down progress in the circular economy. **Sustainability as a goal, not a process**: Recycling is often seen as the end goal, while

	the field of recycling and can make valuable contributions to the circular economy.	account the necessary aspects of sustainability.	funding for research and innovation. **Consumer education**: Mandatory education on sustainability and recycling could increase awareness and acceptance in society.	earlier steps such as reuse and product design are neglected.
UEBA	No SWOT analysis			
PBKIK	No SWOT analysis			
SPC	**Growing awareness of sustainability**: The general awareness of sustainability in small companies is increasing. **Potential for cost-efficient solutions**: There is a demand for sustainable solutions that offer economic benefits and are easy to implement.	**Lack of implementation**: Despite increased knowledge, sustainability is not yet integrated into operational processes. **Financial barriers**: Small businesses need cost-effective solutions to adopt sustainable practices, which is often a challenge.	**Combination of education and funding**: Training programs could be offered together with EU or national funding to support companies. **Leadership by advanced companies**: Advanced companies can act as mentors and multipliers and form training groups for less	**Lack of motivation to change**: Small companies may be reluctant to make necessary changes, even when the benefits are clear. **Competitive pressure**: The need to remain competitive could lead to sustainability initiatives being seen as less of a priority.

	Willingness to undergo further training: There is interest in training measures that demonstrate the real benefits of sustainability.	**Insufficient training resources**: There is a lack of targeted training programs that clearly communicate the benefits of sustainability.	experienced companies. **Use of social media**: Successful companies can share best practices via social media to inspire others and raise awareness of sustainability.	**Inconsistent information**: The dissemination of best practices can be hindered by different interpretations of sustainability and varying success stories.
STEP RI	**Integration of advanced technologies**: Companies are beginning to integrate modern technologies into their operations, leading to more efficient and sustainable processes. **Growing awareness of sustainability**: Recycling initiatives and energy-efficient manufacturing processes show an	**Reactive approaches**: The motivation to introduce sustainable practices is often reactive and dependent on external pressure and incentive systems, not on an internal commitment to environmental responsibility. **High compliance costs**: Companies face significant compliance costs that can drain their resources.	**Increasing demand for environmentally friendly solutions**: A growing market for sustainable products offers companies the opportunity to expand their range. **Future regulatory support**: Potentially supportive regulatory changes could encourage companies to invest in sustainable practices. **Opening up new market segments**:	**Economic considerations prevail**: In regions where economic factors take precedence over environmental concerns, the acceptance of sustainable products could be limited. **Dependence on financial incentives**: The need to rely on financial incentives and regulatory stimuli can jeopardize the long-

	increasing use of sustainable practices. **Improved competitive position**: Implementing sustainable practices can strengthen a company's market position.	**Limited market acceptance**: There is limited acceptance of sustainable products on the market, which makes implementation more difficult.	Companies can benefit from new market segments that are interested in green solutions.	term sustainability strategy. **Competitive pressure**: Companies may find it difficult to hold their own in a highly competitive environment in which sustainability is not always seen as a differentiating factor.
MJC	See STEP RI			
MESAP	**Strong commitment to sustainability:** The organizations actively update their business practices in accordance with international guidelines. **Networking:** Participation in large networks enables the exchange of resources and promotes sustainability goals.	**Structural and bureaucratic difficulties:** Smaller or less structured companies often have problems integrating sustainability beyond superficial approaches. **Lack of internal expertise:** The lack of expertise hinders the implementation of	**Recruitment and retraining**: Adapting the workforce to new technological requirements offers opportunities for growth. **EU funding and initiatives:** These support a holistic approach to human, social and economic development.	**Financial hurdles:** Financial difficulties can hinder the implementation of sustainability practices. **Regulatory complexity:** Unclear or complicated European regulations create uncertainty. **Neglect of sustainability at political level:** The risk of sustainability being

	Training and financial intermediation: The ability to provide training and facilitate access to finance is a competitive advantage.	effective sustainability strategies. **Dependence on flexible European regulations:** Getting used to flexible deadlines can slow down progress in achieving sustainability goals.	**Market standard for sustainability:** The trend towards sustainability is becoming the market norm, forcing companies to adopt it as a necessary business strategy.	neglected at higher political levels could lead to market instability.
Envipark	See MESAP			
BI	**Innovative technologies:** Some existing technologies, such as window recycling, are already being successfully implemented and promote the circular economy. **Growing independence from fossil resources:** Dependence on fossil fuels is decreasing, which improves the	**Insufficient financial transparency:** The presentation of financial decisions with regard to sustainability is inadequate, which undermines trust. **Lack of political pressure:** The association has not yet united sufficiently to exert political influence.	**Increasing the company's attractiveness**: A positive image through sustainable practices can attract qualified employees. **Expansion of business opportunities:** The circular economy opens up new markets and opportunities for innovation.	**Growth target vs. circular economy:** The pursuit of growth can be at odds with the goals of the circular economy. **Bureaucratic hurdles:** Excessive bureaucracy can hinder the implementation of sustainable measures. **Lack of awareness among SMEs:** The circular economy is not

	company's image and makes it more attractive to employees. **Good regulatory framework:** Existing legal regulations support the integration of sustainable practices.	**Insufficient political support:** Compared to other European countries, the circular economy in Germany does not receive enough political support.	**Demand for more transparency:** Initiatives to increase transparency can simplify regulatory processes and promote engagement.	yet sufficiently addressed in the construction industry in particular, which could lead to competitive disadvantages.
UCB	See BI			

SWOT-Analysis for Mechanics & Mechatronics

Partner	Strengths	Weaknesses	Opportunities	Obstacles
BIz-Up	**Attractiveness on the labor market:** Circular economy measures increase the company's appeal to the next generation of employees. **Value enhancement:** Transparent sustainability measures can increase the company's value in non-monetary areas such as "reputation". **Financing potential** The development of circular products could attract potential investors (shareholders, banks).	**Economic viability**: The development of products with a focus on circularity must be economically viable in order to finance technological innovations. **Slow implementation:** Technological and economic reasons can hinder rapid compliance with legal requirements. **Focus on environmental aspects:** Competition is often based on non-technological and economic aspects, which means that innovative approaches take a back seat.	**Future-oriented innovations:** Investments in sustainable technologies could create long-term competitive advantages. **Rising demand:** The growing interest in sustainable products offers opportunities for market expansion. **Cooperation and partnerships:** Cooperation with other companies and institutions can accelerate the innovation process.	**Regulatory hurdles:** Changes in legal requirements could slow down the implementation process. **Market pressure:** Competitors who focus less on sustainability could offer more cost-effective solutions. **Uncertainty in financing:** Fluctuations in the economic situation could jeopardize the necessary investments in sustainable measures.

CPU	**Use of digitalization and sensors**: High usage in products with a long service life promotes design for recycling. **Family-run companies**: Regionally rooted, family-run companies often integrate ESG dimensions and can act as trendsetters in niche markets. **Creative potential**: The openness to communication and cooperation promotes innovative approaches.	**Insufficient data quality**: The database for digitalization, sensors and simulation must be improved. **Lack of documentation of ESG efforts**: Many family-owned companies have not documented their ESG initiatives, which hampers transparency. **Different innovation cycles**: Sectors with long life cycles differ greatly from those with short life cycles (e.g. packaging), which limits adaptability.	**Creating value from residual materials**: Residues can become more valuable in society and in the economic sector. **Political framework conditions**: The implementation of important political framework conditions offers potential for long-term investments. **Focus on sustainable practices**: A growing awareness of sustainability can open up new markets and business opportunities.	**Contradictory regulations**: Differing interpretations and details in the regulations create uncertainty and hinder investment. **Company migration**: The increasing lack of transparency in Austria as a business location could prompt companies to move away. **Price pressure due to economic downturns**: In difficult economic times, price is the dominant factor, which can put pressure on sustainable practices.

UEBA	**Experience and expertise**: Over 30 years of experience in metal processing ensure high-quality work and precise production. **Flexibility in projects**: The ability to adapt quickly to different projects and customer requirements strengthens the competitive position. **Stable customer portfolio**: Established relationships with national customers provide a solid foundation for further growth.	**High investment costs**: The need to invest in modern machines creates financial burdens, especially for maintenance and upgrades. **Dependence on raw material suppliers**: Price fluctuations and availability problems with raw materials can affect production. **Limited material diversification**: Limited options for adapting the production portfolio to new material requirements.	**Sustainable production processes**: Developing and implementing environmentally friendly processes can attract new, environ-mentally conscious customers and strengthen the brand. **Opening up new markets**: Expansion into related sectors such as precision mechanics or customized metal solutions could open up additional sources of income. **Technological innovation**: Investing in innovative technologies to support the transition to a circular economy to promote efficiency and sustainability.	**Market flooded with cheap imports**: Competition from low-cost alternatives from Asia could put pressure on sales figures and margins. **Strict environmental regulations**: Increasing requirements for ecological production and waste management could increase operating costs. **Economic uncertainties**: Fluctuations in the economy could have a negative impact on demand for metal products and jeopardize profitability.

PBKIK	**Strategic commitment of large companies**: Larger companies have already addressed environmental and sustainability issues at a strategic level, often with the support of foreign parent companies. **Compliance with regulations**: Smaller companies comply with all Hungarian and EU regulations and have introduced appropriate environmental protection measures. **Customer orientation**: Adapting to customer requirements promotes the development of companies towards sustainability.	**Lack of independence**: Smaller companies do not make any independent efforts towards sustainability beyond fulfilling regulations and customer requirements. **Inadequate training**: The quality and quantity of the available workforce is not adequate, as underqualified students in vocational training do not receive the necessary practical training. **Cost burden**: The cost of complying with environmental regulations must be included in prices, which jeopardizes competitiveness.	**Need for state or EU funding**: High demand for funding could support small companies in implementing sustainability measures. **Support for dual training**: The initiative to promote dual training programs can improve the qualifications of the workforce in the long term. **Strong customer interest in sustainability**: The growing awareness and demand for sustainable products can serve as an incentive for companies to invest more in this area.	**Political uncertainty**: The unpredictable political situation in Hungary makes long-term planning and adjustments to changing conditions difficult. **Competitive pressure due to costs**: Companies that have to factor the costs of sustainability measures into their prices run the risk of losing out to the competition. **Lack of planning security**: The constant changes in the economic environment make it difficult for companies to adapt and develop strategies.

SPC	**High technical expertise**: The level of expertise in mechanics and mechatronics is very high, especially at the technical universities in Kraków. **Energy savings and sustainable products**: Mechatronics is recognized as a tool for improving mechanical systems, leading to more environmentally friendly solutions. **Openness to external collaboration**: Small companies are willing to work with external experts to drive innovation.	**Lack of qualified employees**: There is a general lack of good employees who are willing to work in technical professions. **Underfunded R&D departments**: Many small companies cannot afford adequate research and development (R&D) units or have them but underinvest. **High employment costs**: The high cost of employment and an inadequate remuneration system pose challenges for the industry.	**Development of innovation centers**: There is an urgent need to create more innovation centers that work on developing and testing new solutions. **Increasing interest in sustainable solutions**: The trend towards sustainable products could further drive the use of mechatronics. **Market for external expertise**: The willingness of small companies to work with external experts opens up opportunities for consulting and support services.	**Market challenges**: The general market could be seen as a challenge, particularly due to competition and economic uncertainty. **Focus on operations**: Small companies are often too focused on their current operations, which hinders the development of new solutions. **Competition for talent**: The shortage of skilled workers could be further exacerbated by competition for talented employees.
STEP RI	**Advanced technology**: Use of modern technologies such as	**Lack of focus on circular economy**: Companies do not currently	**Regulatory changes**: Future regulatory changes favoring	**Regulatory risks**: Companies could face challenges if new

	3D printing, helps to integrate innovative solutions into processes. **Established market presence**: Companies establish themselves as competent in the field of automated systems and develop a solid reputation in various sectors of the economy. **Technological capabilities**: Advanced technological capabilities provide a solid foundation to meet new market needs.	have a significant focus on circular economy initiatives as these are not part of their business strategy or market requirements. **Dependence on external factors**: There is a strong dependence on external drivers such as government regulations or market changes, which indicates a passive approach to sustainability. **Lack of incentives**: The lack of external pressure and incentives to implement circular economy practices could prevent companies from acting proactively.	circular economy practices could open up new business opportunities. **Shift in market demand**: As consumer demand increasingly shifts towards sustainable and circular products, technological capabilities could be used to meet these new market needs. **Expansion of the business area**: Potential regulatory changes or market shifts could open up new business areas.	regulations require rapid adjustments for which they may not be prepared. **Market pressure**: As sustainability increasingly becomes a market demand, companies could be at a competitive disadvantage if they fail to adapt their offerings to these evolving consumer preferences. **Disruption to business practices**: Future regulations or market demands could require significant changes that could disrupt current business operations.

MJC	**Experience and expertise**: Many years of experience in the industry and good international partnerships. **Use of renewable energies**: Willingness to implement sustainable energy sources. **Focus on digitalization**: Strategic focus on modern technologies and digital transformation.	**Traditional ways of thinking**: Resistance to change within the workforce. **Lack of ecological practices**: Unsustainable production methods that need to be improved. **Language barriers**: Difficulties in communication that make international cooperation more difficult.	**Development of the circular economy**: Growing demand for environmentally friendly products and processes. **Growth in waste management**: opportunity to develop innovative solutions in the area of recycling and waste recovery. **Education and training programs**: Cooperation with academic institutions to qualify the workforce.	**Global competitive situation**: Increasing pressure from international competitors. **Rising energy costs**: Increased production costs due to rising energy prices. **Political instability and climate change**: unpredictable external factors that can influence market conditions.
MESAP	**Commitment:** Strong internal commitment to sustainability, which is reflected in ethical principles and active communication (LAMEBO), environmental training and standards	**Internal challenges:** Customer resistance to additional costs (LAMEBO), difficulties in sourcing sustainable raw materials (TRIGENIA) and dependencies in the	**Demand:** Growing demand for sustainable products offers potential for market positioning. **Innovation:** Technological innovations in the area	**Regulatory inconsistencies:** Complex and inconsistent regulations that create uncertainty and hinder progress. **Competition standards:** Competition from companies that do not

	(TRIGENIA) and involvement in local networks (PRIMA INDUSTRIE). **Reputation & trust:** Good reputation and trustworthiness with stakeholders by focusing on ESG practices. **Differentiation:** Potential for differentiation in the market through sustainable product offerings.	supply chain (PRIMA INDUSTRIE). **Regulatory compliance:** Limited progress in regulatory compliance, limiting the use of sustainability as a business driver. **Harmonization:** Lack of harmonization of sustainability standards across different industries.	of waste reduction and resource efficiency. **Support:** Strong institutional support in certain regions, such as Piedmont, could promote growth.	prioritize sustainability but offer lower prices. **Bureaucracy**: Slow bureaucratic processes and delayed regulatory measures that can jeopardize long-term sustainability goals.
ENVIPARK	**New business opportunities:** The circular economy provides a basis for innovative business models and opportunities for diversification. **Rethinking industry:** The approach	**The need for up-to-date information:** Companies must constantly stay up to date with the latest legal requirements and technologies. **Complex regulations:** Difficulties in dealing with laws that regulate	**Market expansion:** Opportunity to diversify and open up new markets outside Europe. **Promoting innovation:** Investments in new technologies can	**Regulatory uncertainties:** Changes in laws and regulations can jeopardize the economic implementation of new business models. **Market volatility**: Unpredictable market conditions could affect

	promotes a reorganization of traditional ways of thinking and operating in the manufacturing sector. **Competitive advantage:** companies that focus on circular practices can position themselves as sustainable players	the handling of by-products as waste. **Financing requirements:** High investments in new technologies and equipment are required to implement circular approaches.	promote growth and efficiency. **Partnerships:** Cooperation and networks can facilitate access to resources and expertise.	the profitability of circular business models. **Competitive pressure:** Other companies that do not focus on the circular economy could offer more cost-effective alternatives.
BI	**Image enhancement and preparation for the future:** Strong focus on the development of new business models that are geared towards future market needs. **Market leadership through innovation:** Positioning as a pioneer in the recycling sector, which culti-	**Lack of framework conditions:** Inadequate legal and political framework conditions that hinder the development and implementation of recycling measures. **Higher costs and additional effort:** High costs and additional effort in the development of new	**Development of new business models:** Opportunity to develop innovative business models that rely on the circular approach and open up new markets. **Market leadership through technological innovation:** Continue to be a pioneer and thus secure a leading position in the market.	**Lack of political pressure:** Little political pressure, which delays the implementation of sustainable practices and impairs competitiveness. **Competition from non-innovative suppliers:** Competition from cheaper, non-innovative providers who put pressure on

	vates the company's image and creates trust. **Profitability in the area of pure materials:** Successful application of profitable recycling processes for materials such as copper, brass and aluminum.	technologies and processes. **Lack of customer acceptance:** Customers are often skeptical about new recycling approaches and have no strong desire for them.	**Profitability through sustainable practices:** Increasing interest in sustainable products could lead to a growing market for recycling.	the market with lower prices. **Lack of certification processes:** Unclear legal framework conditions and a lack of certification make market access and customer acceptance more difficult.
UCB	**Potential for take-back systems**: In mechanical engineering, there are opportunities to establish take-back systems for wear parts that can be repaired or recycled. **Design for repairability in sensor technology**: Approaches to improving the repairability of sensors can extend the service life of products.	**Difficulties in implementing take-back systems**: Obstacles such as transportation costs, additional effort and import/export regulations make it difficult to establish effective systems. **High demands on sensors**: The need to meet specific requirements such as dust protection can affect the reparability of sensors.	**High metal prices**: The high price of metals promotes the far-reaching implementation of circular economy principles (CiE) in the design and production of machines. **Potential to reduce waste**: The use of 3D printing offers opportunities to reduce processing waste.	**Dependence on metal prices**: High metal prices can temporarily affect the cost structure and force companies to adjust their strategies. **Limited acceptance of 3D printing**: The introduction of 3D printing technologies could be limited by a lack of knowledge or resources in the industry.

SWOT-Analysis for Packaging

Partner	Strengths	Weaknesses	Opportunities	Obstacles
Biz-Up	See CPU			
CPU	**Use of digitalization and sensors**: High usage in products with a long service life promotes design for recycling. **Family-run companies**: Regionally rooted, family-run companies often integrate ESG requirements and can act as trendsetters in niche markets. **Creative potential**: The openness to communication and cooperation promotes innovative approaches.	**Insufficient data quality**: The database for digitalization, sensors and simulation must be improved. **Lack of documentation of ESG efforts**: Many family-owned companies have not documented their ESG initiatives, which hampers transparency. **Different innovation cycles**: Sectors with long life cycles differ greatly from those with short life cycles (e.g. packaging), which limits adaptability.	**Creating value from residual materials**: Recyclates can become more valuable in society and in the economic sector. **Political framework conditions**: The implementation of important political framework conditions offers potential for long-term investments. **Focus on sustainable practices**: A growing awareness of sustainability can open up new markets and business opportunities.	**Contradictory regulations**: Differing interpretations and details in regulation create uncertainty and hinder investment. **Company migration**: The increasing lack of transparency in Austria as a business location could prompt companies to move away. **Price pressure due to economic downturns**: In difficult economic times, price is the dominant factor, which can put pressure on sustainable practices.

UEBA	**Long tradition**: Established production processes and experience in the industry promote trust and reliability. **Environmentally friendly solutions**: Gradual transition to more sustainable products strengthens competitiveness and meets growing consumer demands. **International cooperation**: A strong national focus and cooperation with international companies provide access to new markets and resources.	**Sensitivity to price changes**: High sensitivity to changes in input and energy prices, which can lead to low operating profit. **Dependence on consumer preferences**: Low flexibility in adapting to changes in consumer behavior, which can affect sales figures. **Limited diversification**: Partial diversification of products and customers, which makes the company more susceptible to market fluctuations.	**Transition to a circular economy**: The possibility of investing in circular production through appropriate support could open up new business opportunities. **Growing demand for sustainable packaging**: Increasing consumer and regulatory requirements for environmentally friendly packaging are creating new market opportunities. **Adaptation of customer behavior**: Promoting sustainable practices and products can strengthen long-term customer loyalty and brand usage.	**Economic instability**: Uncertainty in the economy can lead to a decline in consumption and investment, which has a negative impact on production and sales. **Increasing demands on ecological standards**: Stricter regulations on ecological sustainability can increase operating costs and require adjustments. **Market pressure from cheaper alternatives**: Increasing competition from cheaper products could put pressure on companies' margins.

PBKIK	**Active awareness-raising**: Companies are actively involved in raising their buyers' awareness of sustainability. **Market knowledge**: Companies know the market trends well and are informed about the latest research findings. **Export activities**: Some companies are already active in the export market, which increases their competitiveness.	**Financial instability**: Many companies do not have a stable financial background, which limits their flexibility. **Responsiveness**: Small and medium-sized enterprises (SMEs) find it difficult to react quickly to the negative global economic situation. **Lack of resources**: Lack of financial resources hinders the development of sustainable products.	**EU and state funding**: Access to EU or state funding could motivate companies to invest in sustainable product development. **Participation in EU projects**: Participation in Interreg projects can be beneficial for Hungarian SMEs and help them gain a competitive advantage. **Growing demand for sustainable products**: New market trends create opportunities for the development of innovative, sustainable products.	**Unpredictable legal and economic environment**: Instability in the legal and economic environment can make planning and implementation more difficult. **Lack of EU funding**: A lack of EU funding can hinder the development and growth of SMEs. **Competitive pressure**: Companies that are not innovative risk suffering a competitive disadvantage.
SPC	**Growing market**: The constantly increasing demand for paper packaging in eCommerce offers	**High competitive pressure**: Small and medium-sized enterprises (SMEs) are fighting for survival and	**Technological innovations**: The introduction of automated packaging solutions could	**Competition from abroad**: Strong competition from countries such as China and Turkey could

	potential for companies in this sector. **Need for innovation**: There are numerous ways to improve logistics and material quality, especially for paper boxes. **Willingness to change**: Companies that recognize the need are prepared to implement changes, which can create the basis for innovation.	can often only differentiate themselves through price. **Insufficient legal support**: A lack of enforcement of existing laws, such as the ban on plastic in restaurants, is hampering the industry. **Lack of recognition of ecological products**: The lack of classification and recognition of organic and recycled products leads to uncertainty in the market.	increase efficiency and reduce costs. **Increasing acceptance of sustainable products**: A well-designed, tested and reasonably priced sustainable product could be accepted by many companies. **Optimization of packaging sizes**: By adapting the packaging sizes to the product dimensions, storage and transportation costs could be significantly reduced.	increase the pressure on local companies. **Psychological barriers**: The perception of recycled paper as inferior could hinder acceptance, even if the quality is actually high. **Cost of innovation**: The high cost of new technologies and innovations could prevent small companies from implementing necessary changes.
STEPRI	N/A			
MJC	N/A			
MESAP	See ENVIPARK			
ENVIPARK	**Innovative solutions:** Bio-based packaging	**Higher costs:** Bio-based packaging is more	**Utilization of raw materials:** Waste from	**Economic viability**: The economic and financial

	offers comparable performance to conventional packaging and promotes sustainable practices. **Sustainable properties:** Biodegradability, sustainability and compostability are strong drivers of market demand for new packaging solutions. **EU funding:** EU regulations have driven research and development in the field of sustainable food packaging, creating opportunities for companies.	expensive than traditional options, which can limit its marketability. **Limited applicability:** Bio-based materials can only be used for certain product types, which limits their flexibility. **Unclear regulations:** EU and national laws are often unclear, especially with regard to end-of-waste criteria.	the food packaging industry can be used as a new business opportunity. **Regional funding:** Funding programs offer opportunities to create synergies and develop new materials and technologies. **Network expansion:** There is a need to expand networks in order to facilitate access to EU and national/regional funding.	viability of bio-based products requires external support, which entails uncertainties. **Regulatory barriers:** EU regulations could be seen as an obstacle to the implementation of a circular economy instead of promoting it. **Market adaptation:** The transition to bio-based products must be financially viable in order to ensure acceptance on the market.
BI	N/A			
UCB	N/A			

SWOT-Analysis for Plastics

Partner	Strengths	Weaknesses	Opportunities	Obstacles
BIZ-up	See CPU			
CPU	**Use of digitalization and sensors**: High usage in products with a long service life promotes design for recycling. **Family-run companies**: Regionally rooted, family-run companies often integrate ESG goals and can act as trendsetters in niche markets. **Creative potential**: The openness to communication and cooperation promotes innovative approaches.	**Insufficient data quality**: The database for digitalization, sensors and simulation must be improved. **Lack of documentation of ESG efforts**: Many family-run companies have not documented their ESG initiatives, which hampers transparency. **Different innovation cycles**: Sectors with long life cycles differ greatly from those with short life cycles (e.g. packaging), which limits adaptability.	**Creating value from residual materials**: Residues can become more valuable in society and in the economic sector. **Political framework conditions**: The implementation of important political framework conditions offers potential for long-term investments. **Focus on sustainable practices**: A growing awareness of sustainability can open up new markets and business opportunities.	**Contradictory regulations**: Differing interpretations and details in regulation create uncertainty and hinder investment. **Company migration**: The increasing lack of transparency in Austria as a business location could prompt companies to move away. **Price pressure due to economic downturns**: In difficult economic times, price is the dominant factor, which can put pressure on sustainable practices.

UEBA	**Traditional production**: Many years of experience in production promote the trust and stability of companies. **Innovative materials**: Efforts to use innovative materials increase competitiveness and adaptability to market trends. **Quality certifications**: Commitment to compliance with quality standards and obtaining certificates strengthens market position and customer loyalty.	**Energy-intensive production**: High energy consumption in production processes can significantly increase operating costs. **Dependence on material inputs**: Lack of suitable alternatives for certain materials poses a challenge. **Low capital resources**: Insufficient financial resources make it difficult to make the necessary investments in modern technologies and ecological measures.	**Financial support for ecological solutions**: Access to funding and subsidies promotes the implementation of sustainable practices. **Protection against cheap imports**: Measures to prevent imports that distort market conditions can improve competitive conditions. **Transition to a circular economy**: Creating a suitable environment for a gradual transition to circular production methods.	**Rising material costs**: Increases in the price of raw materials from the commodities markets can jeopardize the profitability of companies. **Growing demands on sustainability**: Increasing demands on the ecological design of all production stages and end products can increase production costs. **Economic instability**: Macroeconomic developments in the EU and the eurozone could lead to uncertainty, which could have a negative impact on business activity.

PBKIK	**Many years of experience**: 40 years of experience in the field of plastics and plastics renovation provide a solid foundation. **Committed employees**: Companies have stable, well-trained and committed employees. **Modern production facilities**: Magnus Aircraft has a state-of-the-art factory that is superior to its competitors in terms of production conditions.	**Lack of state support**: A lack of state aid and tendering opportunities restricts development. **Unstable regulatory environment**: Unpredictable changes to regulations by the government, such as the establishment of new supervisory bodies, make planning more difficult. **Limited freedom to experiment**: Strict safety regulations leave little room for innovation and experimentation in the production process.	**Unused opportunities in waste management**: There is potential to purchase regranulators and implement local laboratories to make better use of waste. **Growing demand for recycled plastic products**: The demand for high-quality plastic products made from recycled material is high and growing. **Development of environmentally friendly products**: Focusing on the production of environmentally friendly aircraft opens up new business opportunities.	**Regulatory pressure**: New control systems introduced by the government could bring additional burdens. **Lack of industry-specific recycling regulations**: A lack of clear rules for recycling waste in the industry makes compliance difficult. **Competition from less well-equipped manufacturers**: While Magnus Aircraft is well positioned, many competitors may not be able to deliver high-quality products, which could unsettle the market.

SPC	**High awareness of sustainability**: Companies show a strong awareness of sustainable practices in 3D printing. **Openness to external collaboration**: The willingness to collaborate with external experts promotes innovation, especially at the chemical level. **Cost reduction target**: Focusing on cost reduction can strengthen competitiveness on the international market.	**Lack of internal resources**: Lack of time and resources prevent the internal development of necessary solutions. **Necessary improvements to machinery**: There is an urgent need to increase the efficiency of printing technology and machinery. **Access to laboratories and test procedures**: Limited access to laboratories and testing resources hinders the development and improvement of materials and technologies.	**Growth of the market for sustainable 3D printing**: The increasing demand for sustainable solutions in 3D printing is opening up new business opportunities. **Development of innovative materials**: Improvements in the consistency of the printing powder can lead to better quality printing results. **Cooperation with research institutions**: Partnerships with research and educational institutions can improve access to resources and expertise.	**International competition**: The pressure to remain competitive in the international market can pose challenges when it comes to implementing sustainable practices. **Technological backlogs**: The delay in implementing new technologies could affect the competitiveness of companies. **Unforeseen costs**: Unexpected costs for external consulting and the development of new technologies could put a strain on financial resources.

STEP RI	**Recycling initiatives**: Strong recycling practices that use technological waste as an input for new production improve resource efficiency and reduce waste. **Commitment to sustainability**: A clear commitment to sustainability can be seen in the ongoing efforts to integrate circular economy principles into business processes. **Technological adaptation**: The use of technologies for recycling and reusing materials within production processes is a significant advantage.	**Dependence on external recycling facilities**: Reliance on external facilities for certain recycling operations could introduce vulnerabilities in terms of cost and disruption to the supply chain. **Technological limitations**: Current technologies may limit the efficiency and effectiveness of recycling processes, which could hinder the improvement of sustainability practices. **Inadequate government support**: Lack of support and incentives from government agencies can be a critical barrier that slows the adoption of more ad-	**Expansion of recycling capabilities**: Investments in new technologies to improve recycling capabilities offer opportunities for growth and efficiency. **Market developments towards sustainability**: Increasing consumer and company demand for sustainable products could open up new markets and strengthen the company's competitive position. **Networking and knowledge exchange**: Involvement in platforms such as the CURIOST project can offer new insights and opportunities for cooperation.	**Regulatory changes**: Changes in environmental legislation could bring new compliance costs and operational challenges. **Economic pressure**: Market fluctuations or economic downturns could affect the financial viability of the company's sustainability initiatives, especially if they are costly. **Technological disruption**: Rapid advances in recycling and production technology by competitors or new players could jeopardize the company's market

		vanced sustainability measures.		position if it fails to keep pace.
MJC	**Innovative additive technologies**: opening up new possibilities for product design and cost reduction. **Export orientation**: A high proportion of turnover comes from the international market. **Focus on sustainability**: prioritization of sustainable materials and technologies in the production chain.	**Dependence on raw material prices**: Costs for materials and machine maintenance influence profitability. **Waiting for progress in mobile robotics**: delays in the implementation of new technologies could cause competitive disadvantages. **Lack of transparency in sustainability initiatives**: Difficulties in the effective implementation and communication of sustainability goals.	**Growth in the circular economy**: potential to increase efficiency and reduce waste through innovative recycling technologies. **Participation in global supply chains**: membership in initiatives such as SEDEX and EcoVadis to improve market position. **Increasing demand for sustainable products**: Consumer pressure forcing companies to adopt more environmentally friendly practices.	**Intense global competition**: strong pressure from other international manufacturers. **Regulatory requirements**: Need to constantly adapt to new EU requirements and standards. **Volatility of commodity markets**: Uncertainty regarding the availability and prices of raw materials can increase production costs.

MESAP	**Technological adaptability:** ETRA can continuously adopt new technologies to increase the competitiveness of recycled tires against new materials. **Focus on environmental factors:** The emphasis on sustainable practices strengthens the market position and promotes innovative potential. **Flexibility as an SME:** The adaptability of a small and medium-sized enterprise (SME) enables ETRA to react quickly to changes in the market.	**Market volatility:** High processing costs and uncertainties in the market for recycled materials are having a negative impact on competitiveness. **Cost structure:** The production costs for recycled tires are often higher, which makes them less competitive than non-recycled tires. **Lack of resources:** As an SME, ETRA has fewer opportunities to absorb costs or invest in innovation compared to larger companies.	**Political and regulatory progress:** Improvements in legislation could promote the recycling of tires and create incentives for the use of recycled materials. **Raising awareness:** Increased public awareness of the importance of recycling could lead to a better reputation and more support for the industry. **Regulatory reorganization**: The removal of market access barriers could promote the growth of recycling and the acceptance of recycled products.	**International competition:** Cheap tires from the Chinese market are putting pressure on prices for recycled tires. **Regulatory uncertainties:** Inconsistencies in regulations and incentives as well as an uncoordinated European approach to tire recycling create uncertainty. **Bureaucratic hurdles:** Resistance from public administration and regulatory bodies that do not fully support recycling practices makes it difficult for smaller companies to compete in a highly competitive market.

ENVIPARK	**Established processes:** Mechanical recycling is a well-defined and well-known process, while chemical recycling is more cost-effective. **Environmentally friendly:** The use of recycling methods helps to reduce waste and promote sustainable practices. **EU funding:** Investments in pilot plants by the EU create incentives for companies to invest in the recycling sector.	**High costs:** Mechanical recycling is more expensive and could deter potential investors. **Confusion with certifications:** Unclear certification processes can hinder competitiveness and commercial growth. **Competition from China:** Cheap biopolymers from China without certification are increasing the price pressure on European companies.	**Market demand:** Recycling of sports equipment is demanded by major brands, which creates new business opportunities. **EU directives:** Changes to EU directives could boost the market for recycling and biopolymers. **Synergies through EU funds:** Funding can be used to create links and support research and development.	**Market uncertainty:** The market is not ready for major investments in recycling technologies, which is hampering growth. **Legislation:** Strict EU regulations can act as barriers to investment and the development of recycling facilities. **Lack of investment:** The need for research and development in the recycling sector is hampered by insufficient financial resources.
BI	See UCB			
UCB	**High application potential for recyclates**: There are many opportunities to use recycled materials in non-critical areas	**Low acceptance of recycled materials**: The motivation of decision-makers (e.g. CEOs, designers) influences	**Growing interest in bioplastics**: The use of bioplastics offers companies an interesting opportunity	**Resistance to change**: Companies that do not want to act sustainably could only fulfill regulations on paper

	such as outdoor products or products not used for food or skin contact. **Flexibility in the use of materials**: The ability to meet different quality requirements in different sectors offers competitive advantages for injection molding companies. **Growing importance of environmental declarations**: Environmental product declarations are gaining in importance, which promotes transparency and responsibility in the industry.	the willingness to use recycled materials. **Quality challenges**: The reduced quality of recycled plastic compared to virgin material is an obstacle, as is the uncertainty regarding possible contamination. **Market power of large suppliers**: Large granulate suppliers have a high level of market power and often set high minimum order quantities, which puts a strain on smaller injection molders.	to develop sustainable products. **Political support for sustainability**: The national circular economy strategies and specific measures could lead to an increase in the use of recyclates. **Development of trading platforms**: The creation of platforms for trading production waste could help small companies to make better use of resources.	and delay necessary changes. **Regulatory uncertainties**: Inconsistent opinions on the usefulness of sustainability regulations can unsettle the industry. **Market situation for recycled materials**: The high market power of large suppliers and their pricing strategies can jeopardize the competitiveness of smaller companies.

SWOT-Analysis for Building & Construction

Partner	Strengths	Weaknesses	Opportunities	Obstacles
Biz-up	N/A			
CPU	**Resilience of large companies**: Large construction companies that cover different sectors are more resilient to market fluctuations. **Growing importance of sustainability**: The focus on sustainability attracts young talent and promotes a positive image in the industry. **Innovations and reuse**: There are increasingly innovative approaches to reducing waste and reusing existing materials.	**Over-regulation**: A multitude of standards and regulations can make it difficult for small companies in particular to remain compliant. **Shortage of skilled workers**: The shortage of skilled workers is a pressing problem, as many workers are moving to other industries. **Negative image of the industry**: The construction industry has a bad reputation, perceived as "dirty work".	**Focus on renovations**: Political support for renovation projects offers opportunities for companies that focus on sustainable practices. **Funding for recycling projects**: More funding for innovative approaches to the reuse of construction site materials can kick-start new projects. **Growing importance of sustainability reports**: The need to produce sustainability reports is becoming increasingly important for both large companies and SMEs.	**Decline in the construction industry**: High prices for raw materials and excessive regulation could lead to a sustained decline in the industry. **Greenwashing**: Despite the increasing interest in sustainability, there are many cases of greenwashing, which undermines credibility. **Narrow-minded political view**: Politicians and decision-makers often only see the industry in terms of economic growth and profit, which could hin-

				der sustainable developments.
UEBA	N/A			
PBKIK	**Openness to new technologies**: Member companies are prepared to use new technologies and products in their field. **Experienced workforce**: Companies such as IMG Építő kft have an experienced workforce with a low turnover rate and have been working with reliable suppliers for 20 years. **Sustainability in the corporate DNA**: Sustainability practices are integrated into the decision-making processes of corporate	**Lack of financial reserves**: Many companies see sustainability as an "unnecessary" activity and have no funds for corresponding measures. **Lack of language skills**: There is a lack of foreign language skills, which makes international cooperation more difficult. **Dependence on EU subsidies**: Hungarian companies are heavily dependent on EU subsidies in order to survive and make investments.	**Awareness-raising and training**: There is great potential to educate customers about sustainability and communicate simple best practices. **Market share to promote green products**: Larger companies can influence the market by withdrawing classic products and only offering green alternatives. **Technological innovations**: The industry has the opportunity to develop innovative technologies to reduce CO_2 emissions	**Legal restrictions**: Strict regulations and taxes jeopardize both sustainability efforts and the industry as a whole. **Cost awareness of customers**: The pursuit of the cheapest product without considering the ecological footprint limits sustainable initiatives. **Technological challenges in the cement industry**: The lack of suitable technology for storing green energy and the dependence on fossil fuels pose significant challenges.

	management and shape the company.		and improve energy efficiency.	
SPC	**Diverse sector structure**: The sector comprises a wide range of players, from mid-capitalized companies to house developers and small manufacturers of building materials. **Push for certification**: Investors in the office space sector are increasingly required to comply with green building certificates, which promotes awareness of sustain-able building practices. **EU directives as drivers**: New EU directives on the thermal modernization and revitalization of buildings create	**Lack of sustainable tenders**: The tender law does not allow sustainable materials to be offered, which hinders the introduction of environmentally friendly options. **Tendency to build cheaply and quickly**: The focus on cheap and fast construction methods can affect the quality and sustainability of construction projects. **High demands on new products**: New sustainable products must be affordable, tested and of good quality, which is a	**Growing demand for workers**: The need for 100,000 new workers to implement thermal building modernization opens up new employment opportunities. **Future trend in timber construction**: Timber construction could establish itself as a forward-looking trend in residential construction and promote sustainable solutions. **Urgent need for adaptation**: The need to bring buildings to zero emissions by 2040 will push companies to develop innovative and sustainable solutions.	**Lack of green tenders**: The lack of green tenders could hinder the adoption of sustainable materials and practices. **Market pressure on prices**: The focus on cost-effective construction could lead to a neglect of quality and sustainability. **Regulatory challenges**: The implementation of new EU directives may require extensive adjustments that could overwhelm small companies.

	incentives for sustainable practices.	challenge for manufacturers.		
STEP RI	**Innovative use of waste materials**: The integration of waste materials into products reduces costs and improves the market position through unique and sustainable product features. **Expertise in sustainable materials**: specialist knowledge and pioneering research position the company at the forefront of integrating circular economy principles into the construction industry.	**Financial burden of regulations**: The cost of complying with stringent environmental regulations and industry standards can limit Draco Pro's ability to transform and scale sustainably. **Limited adaptability of infrastructure**: The limited adaptability of the local industrial infrastructure and the prevailing traditional practices pose significant challenges for the practical application of their sustainable innovations.	**Supportive policy measures**: Anticipated policy support for circular economy practices could provide financial incentives and operational benefits that enable a faster transformation towards sustainability. **Growing global emphasis on sustainability**: The increasing global focus on sustainability offers significant opportunities to expand the impact and funding of research through improved networking and collaboration.	**Economic and regulatory challenges**: Economic pressures and regulatory challenges could hinder investment in sustainability, particularly due to uncertain financial returns and potentially high compliance costs. **Strict regulations and economic pressures**: Strict regulations and economic challenges within the construction industry present significant barriers to the widespread adoption of new, sustainable construction methods that their research advocates.

MJC	**Integration:** Effective integration of circular economy principles, such as the full utilization of raw materials. **Optimization:** Minimization of waste and implementation of solar systems to promote sustainability. **Employees:** Employees' commitment to environmental awareness and their willingness to undergo further training.	**Finances:** Lack of financial opportunities, such as low-interest loans and tax incentives. **Sustainability integration:** Insufficient integration of sustainability into the economic development strategy. **Advanced technology costs:** High costs for the introduction of new technologies and alternative energies.	**Education:** Seminars and workshops on the circular economy and resource management to increase company profits. **Promotion:** Promotion of government support programs to create financial incentives. **Recycled material:** Opportunity for diversification through the use of construction waste and recycled materials in new projects.	**Price fluctuations:** Commodity price volatility, which can destabilize the cost structure. **Crisis of the institutions:** Declining demand from long-term partners due to the EU crisis. **Financial costs:** Increased bank charges and financial burdens that hinder business development.
MESAP	N/A			
ENVIPARK	N/A			
BI	**Advanced transformation:** Innovative technologies are available and the	**Technophobia:** A lack of political support and a technology-hostile environment in	**Profitability of the recycling industry:** The recycling industry is becoming increasingly profitable, which	**Overregulation**: The extensive regulation in Germany is hampering industrialization and

	transformation in the recycling industry is well advanced, with its own development departments. **Many years of expertise:** Many years of experience in soil recycling, particularly in the reuse of materials on construction sites. **Growing independence from fossil resources:** Dependence on fossil fuels is decreasing, which improves the company's image and makes it more attractive to new employees.	Germany hinder the realization of projects. **Cost intensity:** High costs and economic unprofitability of recycling measures, especially with low material yields. **Complex legal framework:** Over-regulation and complicated approval procedures make it difficult to implement and develop recycling projects.	promotes investment and innovation. **Potential in the construction waste sector:** Great opportunities in the mineral material flow from the construction waste sector, with potential for developments and technical innovations. **Openness of younger market participants:** Younger companies show a greater willingness to innovate and adapt to new recycling approaches.	innovation in the recycling sector. **Economic uncertainties:** Currently declining recycling activities, which are influenced by economic conditions. **Lack of purity:** Difficulties in separating plastics from other materials lead to high costs and inefficient recycling processes.
UCB	See BI			

4. CROSS-PARTNER SUMMARY

Cross-partner summary of recurring core statements by area

SWOT-Analysis for General

Partner	Strengths	Weaknesses	Opportunities	Obstacles
Total	**Awareness of sustainability and the circular economy** Several statements emphasize the growing awareness and increasing importance of sustainability both in society and within companies. This includes the growing interest in sustainable practices, recycling initiatives and the willingness to implement measures that contribute to the circular economy. Examples include	**High costs and financial barriers** Several statements emphasize the financial challenges associated with the implementation of circular economy strategies. This includes high investment costs for switching to sustainable business models as well as high production and compliance costs that prevent companies from investing in sustainability. Examples include:	**Growing market for sustainable and environmentally friendly solutions** A recurring theme is the increasing demand for environmentally friendly products and sustainable solutions that offer companies new business opportunities. The focus on sustainability opens up new markets and enables the expansion of the range of green products and services. This is made clear by phrases such	**Competitive pressure** A recurring obstacle is the strong competitive pressure, especially from companies that do not focus on the circular economy. These companies could offer cheaper alternatives, making it more difficult to successfully implement sustainable practices and compete in the market. This is reflected in various phrases such as "competitive pressure", "companies that are less committed

	"Awareness of circular economy", "Growing knowledge of sustainability" and "Growing awareness of sustainability". Biz-up, CPU, SPC, STEPRI, BI **Technological innovation and advanced technologies** Companies are increasingly integrating modern technologies into their processes, which both increase efficiency and promote sustainability. The use of innovative technologies, such as in window recycling, is particularly emphasized. This is reflected in phrases such as "integration of advanced	• "High investment costs" • "High production costs" • "Financial barriers" • "High compliance costs" BIZ-UP, CPU, SPC, STEPRI **Lack of internal focus and implementation** Another frequently cited weakness is the lack of internal focus on sustainability and the insufficient implementation of circular economy strategies within the company. The lack of long-term planning and the reactive attitude of many companies,	as "increasing demand for environmentally friendly solutions", "growing market for recycling solutions" and "opening up new market segments". Biz-up, STEPRI **Subsidies and state support** The possibility of benefiting from financial subsidies and funding is seen as a great opportunity for companies that want to implement sustainable measures. This includes both national and EU-supported funding for innovation, research and the implementation of	to the circular economy" and "companies may find it difficult to compete in a highly competitive environment". Biz-up, SPC, STEPRI **Financial hurdles and insufficient funding** Financial challenges are another frequently cited obstacle. Both the high investment costs of switching to sustainable practices and the insufficient economic subsidies and financial incentives hinder progress in the circular economy. Terms such as "insufficient subsidies", "financial barriers" and "dependence on

	technologies" and "innovative technologies". Biz-Up, CPU, SPC, STEPRI, BI **Compliance with legal requirements and regulatory support** Another frequently cited strength is compliance with legal requirements and the good regulatory framework that supports the implementation of sustainable practices. This is illustrated by statements such as "compliance with legal requirements" and "good regulatory framework". Biz-up, BI	which only react to external pressure instead of proactively taking sustainable measures, are particularly emphasized here. Phrases such as "lack of long-term planning", "reactive approaches" and "lack of implementation" illustrate this weakness. Biz-up, SPC, MESAP **Lack of training and expertise** Another recurring theme is the lack of appropriate expertise and training resources for the successful implementation of the circular economy. Companies often do not have enough in-house expertise to	circular economy strategies. These opportunities are included in statements such as "Economic subsidies", "EU funding and initiatives" and "Future regulatory support". Biz-up, CPU, SPC, STEPRI, MESAP, BI **Innovation and improvement of internal processes** The transition to a circular economy is seen as an opportunity to improve internal processes and drive innovation. This includes both efficiency improvements in production and the	financial incentives" underline this problem. Biz-up, STEPRI, MESAP **Regulatory complexity and excessive demands due to regulations** One frequently cited difficulty is the complex and often unclear regulations in the area of the circular economy, which can overwhelm companies. Unclear regulations and the fear of bureaucratic effort make it difficult to implement sustainable measures. This becomes clear in expressions such as "overburdened by regulations", "regulatory complexity"

		effectively implement sustainability strategies, and there are also too few targeted educational programs that clearly communicate the benefits of the circular economy. This weakness is highlighted by terms such as "lack of training", "insufficient training resources" and "lack of internal expertise". CPU, SPC, MESAP	introduction of new business models and technologies. This is expressed in terms such as "innovation in internal processes" and "expansion of business opportunities". Biz-up, BI	and "bureaucratic hurdles". CPU, SPC, MESAP, BI

SWOT-Analysis for Mechanics & Mechatronics

Partner	Strengths	Weaknesses	Opportunities	Obstacles
Total	**Experience, expertise and technological skills** Several statements emphasize the importance of experience, expertise and technical skills, which serve as a strong foundation for success in the circular economy. This includes both many years of industry experience and advanced technological skills, such as in metalworking, mechatronics or digitalization. Phrases such as "Experience	**High costs and financial burdens** A recurring theme is the financial hurdles that companies face when implementing circular economy strategies. This includes high investment costs for new technologies and machinery as well as additional costs associated with environmental compliance, research and development. Phrases such as "high investment costs", "cost burden", "funding needs" and "underfunded R&D	**Growing demand for sustainable products and solutions** A recurring theme is the growing demand for sustainable products and solutions, which companies see as an important opportunity. Increasing consumer interest in environmentally friendly products is opening up new markets and business opportunities. Phrases such as "Rising demand", "Strong customer interest in sustainability", "Growing demand for environmentally	**Regulatory uncertainties** Uncertainties and changes in legal regulations that can delay or complicate the implementation of sustainable practices are frequently mentioned. Terms such as "regulatory hurdles", "contradictory regulations", "regulatory inconsistencies" and "regulatory risks" reflect this.

	and expertise", "High technical competence" and "Technological skills" highlight these strengths. UEBA, SPC, STEPRI, MJC, BI **Commitment and reputation enhancement** Another frequently cited strength is the strong internal commitment to sustainability, which has a positive impact on the company's image and reputation. Companies that are actively committed to the circular economy and sustainability can gain the trust of	departments" highlight this weakness. BIZ-UP, UEBA, PBKIK, SPC, ENVIPARK, BI **Lack of qualified employees and inadequate training** Another frequently cited problem is the lack of qualified employees and insufficient training in relation to the specific requirements of the circular economy. Companies have difficulties finding the necessary skilled workers or training their existing employees accordingly. This is underlined by terms such as "lack of qualified employees",	friendly products" and "Sustainable production processes" highlight this opportunity. BIZ-UP, CPU, UEBA, PBKIK, SPC, STEPRI, MJC, MESAPENVIPARK, BI **Innovation and technological development** Investing in innovative technologies to promote the circular economy is a frequently cited opportunity. This includes technological advances in production and waste recycling as well as the development of new business models. Terms such as "future-oriented innovation",	BIZ-UP, CPU, UEBA, PBKIK, STEPRI, MESAP, ENVIPARK **Market and competitive pressure** Companies that implement sustainable practices are often faced with cheaper alternatives from competitors that focus less on sustainability. Terms such as "market pressure", "competition for talent", "competition from non-innovative suppliers" and "competitive pressure due to costs" are recurring. BIZ-UP, UEBA, PBKIK, SPC, STEPRI, MJC, MESAP, ENVIPARK, BI

	stakeholders and position themselves as trustworthy players. This is made clear by terms such as "reputation & trust", "commitment" and "image enhancement". BIZ-UP, PBKIK, STEPRI, MESAP, ENVIPARK, BI **Market opportunities and differentiation** The focus on the circular economy offers companies opportunities to differentiate themselves in the market and tap into new business opportunities. Companies that focus on sustainable	"insufficient training" and "lack of incentives". CPU, PBKIK, SPC, MJC, ENVIPARK **Slow implementation and lack of focus on circular economy** Many companies have not yet placed a significant focus on the circular economy and there is often a slow implementation of necessary changes and innovations. Traditional mindsets, a slow adaptation process and the lack of a clear business strategy on the circular economy prevent the rapid implementation of sustainable practices. Terms such as "slow	"technological innovation", "innovation", "development of new business models" and "market leadership through technological innovation" reflect the importance of technological innovation for the circular economy. BIZ-UP, UEBA, SPC, STEPRI, MESAP, ENVIPARK, **Cooperation, partnerships and regulatory support** Cooperation with other companies and institutions as well as support through political framework conditions or subsidies	**Economic uncertainty and financing** Fluctuations in the economic situation and uncertainties in the financing of sustainable measures represent a significant obstacle. Terms such as "uncertainty in financing", "market volatility", "price pressure due to economic downturns" and "economic uncertainties" frequently crop up. BIZ-UP, CPU, UEBA, PBKIK, SPC, MJC, ENVIPARK, UCB

	practices and innovative business models can position themselves as pioneers and gain a competitive advantage. This is underlined by statements such as "differentiation", "new business opportunities" and "competitive advantage". BIZ-UP, MESAP, ENVIPARK	implementation", "lack of focus on circular economy" and "traditional mindsets" reflect this challenge. BIZ-UP, CPU, PBKIK, SPC, STEPRI, MJC	are also important opportunities. Partnerships can accelerate the innovation process, facilitate access to resources and expertise and create new business opportunities. Phrases such as "Collaboration and partnerships", "Market for external expertise", "Need for government or EU funding", "Regulatory changes" and "Strong institutional support" underline the importance of collaboration and political support. BIZ-UP, CPU, PBKIK, STEPRI, MESAP, ENVIPARK	

SWOT-Analysis for Packaging

Partner	Strengths	Weaknesses	Opportunities	Obstacles
Total	**Sustainability and innovation:** The use of digitalization, sensors and the focus on recycling and bio-based, sustainable packaging strengthens competitiveness, as these solutions are both environmentally friendly and marketable and meet the growing demand for ecological products. CPU, PBKIK, SPC, ENVIPARK, **Family-run company structure:** Family-run companies with regional roots often integrate ESG	**Unclear EU and national regulations:** especially regarding end-of-waste criteria, make it difficult to implement sustainable practices as companies are unsure how to comply with regulatory requirements. SPC, ENVIPARK **Dependence on price fluctuations and limited diversification**: Sensitivity to changes in input and energy prices and limited diversification of products and	**Growing demand for sustainable products and packaging** There is increasing demand from both consumers and regulators for sustainable packaging and products. This is creating new market opportunities, particularly in the area of environmentally friendly packaging and bio-based materials. CPU, UEBA, PBKIK **Political support and funding** National and EU policies and government funding for circular economy initiatives offer significant opportunities for companies. These policy frameworks and financial	**Regulatory uncertainties, contradictory regulations** Inconsistent or contra-dictory legal regulations, particularly with regard to sustainability rules and the definition of end-of-waste criteria, create uncertainty and make investments more difficult. Companies are often unsure how to adapt to these changes, which delays the implemen-tation of circular economy strategies. CPU, PBKIK, ENVIPARK **Market pressure** Price pressure, particularly from cheaper alternatives from competitors that do not focus on sustainable practices, is a significant ob-stacle. Competition from

	requirements and can act as flexible trendsetters in niche markets, which strengthens their market position and promotes innovation. CPU, UEBA **Experience and market knowledge**: Companies benefit from many years of experience and established production processes, which create trust and reliability, as well as good market knowledge, which enables them to react quickly to trends and research results. UEBA, PBKIK, SPC	customers make companies susceptible to market fluctuations and reduce their flexibility and stability. UEBA, PBKIK, SPC **Higher costs and limited applicability of bio-based packaging**: Bio-based packaging is more expensive than conventional alternatives and can only be used in certain application areas, which limits its broad marketability and scalability. SPC, ENVIPARK	incentives can encourage the development and implementation of sustainable solutions and stimulate long-term investment in the circular economy. CPU, PBKIK, ENVIPARK **Transition to a circular economy and technological innovation:** The ability to invest in circular production and the introduction of automated packaging solutions could increase efficiency, create new business opportunities and reduce costs in the long term**.** UEBA, SPC	large, established suppliers and foreign companies can also put pressure on smaller companies, limiting their ability to operate sustainably. PBKIK, SPC **Economic instability and the cost of innovation** Economic uncertainty and fluctuating market conditions make long-term planning difficult and can force companies to hold back their investments. Added to this is the high financial cost of developing new technologies and innovations, which could prevent smaller companies from making the necessary adjustments. CPU, UEBA, PBKIK, ENVIPARK

SWOT-Analysis for Plastics

Partner	Strengths	Weaknesses	Opportunities	Obstacles
Total	**Commitment to sustainability and environmental awareness** Many companies show a strong commitment to sustainable practices and the integration of circular economy principles into their business processes. This includes the use of recycled materials, recycling initiatives and the prioritization of sustainable technologies and production methods. A clear commitment to sustainability not only strengthens market position, but also promotes customer confidence and increases competitiveness.	**Insufficient financial means and resources** Many companies, especially SMEs, suffer from a lack of capital, which makes it difficult to make the necessary investments in modern technologies, environmental measures and innovations. The lack of financial resources makes it difficult to implement the necessary steps to improve sustainability and the circular economy and maintain competitiveness. UEBA, SPC, MJC, MESAP, ENVIPARK	**Growing demand for sustainable products** The increasing demand for sustainable products, both from consumers and companies, is creating new business opportunities. This covers a wide range of areas, such as recycled plastics, bio-based materials and sustainable 3D printing solutions. The growing awareness of sustainability is opening up markets and strengthening the competitive position of companies that focus	**Regulatory uncertainties and contradictory regulations** Inconsistent and contradictory regulations at national and international level create uncertainty for companies, which makes planning and investment more difficult. Differing interpretations and questions of detail in regulation, particularly in the area of recycling and sustainability, lead to increased complexity and hinder progress, as companies find it

	SPC, STEPRI, MJC, MESAP, ENVIPARK **Technological innovation and adaptability** Companies are increasingly focusing on technological innovation, such as the use of digitalization, sensors and innovative materials to promote design for recycling. Modern production facilities and a willingness to adopt new technologies, such as 3D printing or chemical recycling, allow companies to remain competitive and make the transition to a circular economy efficiently. The flexibility to adapt to new technologies is particularly beneficial for	**Unstable and inadequate regulatory environment** Uncertainties in the regulatory area, such as unpredictable changes to regulations or unclear government support, represent a significant obstacle. Inconsistent and contradictory regulations and the lack of clear incentives and funding make it difficult for companies to plan and implement long-term, sustainable strategies. PBKIK, STEPRI, ENVIPARK **Challenges in material quality and acceptance of recycled materials** The low acceptance of recycled materials and the associated uncertainty regarding the quality of recycled plastic compared	on environmentally friendly practices. CPU, PBKIK, SPC, STEPRI, MJC, ENVIPARK, UCB **Political and regulatory support** Increasing political support for sustainability and the creation of appropriate policy frameworks offer companies the opportunity to make long-term investments. National and EU-wide measures to promote the circular economy, such as specific legal regulations or subsidies for ecological solutions, can support companies in switching to more sustainable	difficult to adapt to constantly changing regulations. CPU, MESAP, UCB **Economic pressure and volatile markets** Economic instability, market fluctuations, rising material costs and price pressure, especially in difficult economic times, pose a major challenge. Companies must constantly deal with fluctuations in commodity prices and the uncertainties of global markets. This can jeopardize the profitability of sustainable practices, which often entail higher costs, and

	SMEs that can react quickly to market changes. CPU, UEBA, STEPRI, MJC, MESAP **Many years of experience and quality** Many companies benefit from years of experience in their industry, be it in plastics, production or recycling. This tradition and expertise not only promotes trust and stability, but also the ability to develop high-quality products and solutions. In addition, many companies have already successfully implemented quality assurance processes, which strengthens their market position and	to virgin material are significant barriers. Many decision makers, such as CEOs and designers, are often reluctant to use recycled materials as the quality and potential contamination risks are seen as problematic. This hinders the wider adoption of circular economy solutions. CPU, UEBA, UCB	production methods and create additional market opportunities. CPU, UEBA, MESAP, ENVIPARK, UCB **Expansion of recycling and waste management technologies** The development of new recycling technologies and the expansion of recycling capabilities offer significant potential for increasing efficiency and reducing waste. The implementation of innovative recycling technologies and the use of residual materials as valuable resources promote the circular economy and	affect the competitiveness of companies. CPU, UEBA, PBKIK, SPC, STEPRI, MJC, MESAP **Resistance to change and technological backlogs** Many companies struggle to implement necessary changes towards more sustainable production methods. Resistance to change within companies, often due to cost pressures or lack of conviction, as well as technological backlogs (e.g. delays in implementing new recycling

	contributes to customer satisfaction. CPU, UEBA, PBKIK		open up opportunities for companies to increase their efficiency and competitiveness while reducing their environmental impact. UEBA, PBKIK, SPC, STEPRI, MJC	technologies) prevent companies from reaping the benefits of the circular economy. Technological and organizational barriers slow down the adoption of new solutions and adaptation to more sustainable practices. SPC, STEPRI, ENVIPARK, UCB

SWOT-Analysis for Building & Construction

Partner	Strengths	Weaknesses	Opportunities	Obstacles
Total	**Growing importance of sustainability** Sustainability is increasingly a key issue that helps companies attract young talent and promote a positive image in the industry. The increased focus on sustainable practices, both internally and in products and services, is perceived as a strategic strength that strengthens both the company and its brand. CPU **Innovations and reuse** Companies are	**Overregulation and complex legal frameworks** A multitude of standards, regulations and approval procedures make it difficult for companies, especially small ones, to remain compliant. Overregulation and complex legal frameworks can both increase the administrative burden and limit companies' flexibility and ability to innovate. CPU, SPC, BI	**Political support and funding** There are increasing policy measures and financial incentives that support companies to implement sustainable and resource-efficient practices. Funding for recycling projects and renovations as well as government support programs offer significant opportunities to finance innovative approaches and accelerate the transformation to a circular economy. CPU, PBKIK, STEPRI, MJC	**Regulatory and legal challenges** Excessive regulation and strict rules are a major obstacle for businesses, especially smaller companies that may have difficulty adapting to new EU directives and legal requirements. This concerns not only compliance with environmental regulations, but also high compliance costs, which can slow down the development of sustainable practices and innovation. PBKIK, SPC, STEPRI, BI

	increasingly focusing on innovative approaches to reducing waste and reusing materials. The integration of waste materials into new products and the pursuit of continuous optimization of recycling technologies are perceived as important competitive advantages that not only increase resource efficiency, but also improve market position through sustainable and unique product features. CPU, PBKIK, STEPRI, MJC, BI **Expertise and many years of experience** Companies with many	**Lack of skilled workers and technophobia** The skills shortage is a significant problem, as many skilled workers are moving to other industries. This is exacerbated by a technophobic environment and a lack of political support, which makes it difficult to introduce new technologies and sustainable innovations. CPU, PBKIK, BI **Financial burdens and lack of resources** Companies often struggle with a lack of financial resources,	**Technological innovations and market trends** The possibility of developing innovative technologies that reduce CO_2 emissions and improve energy efficiency offers a huge opportunity for companies. Particularly in the area of timber construction as a forward-looking trend in residential construction and the use of recycled materials and construction waste open up new business opportunities and the chance to offer more sustainable solutions. PBKIK, SPC	**Economic pressure and cost awareness** The pressure to produce cost-effectively, particularly in the construction industry and recycling sector, often leads to a neglect of sustainable solutions. Many customers place too much emphasis on low-cost products without considering the environmental footprint, making the transition to more sustainable practices more difficult. In addition, price fluctuations and rising raw material costs are further economic challenges that jeopardize the profitability of

	years of expertise, particularly in areas such as soil recycling or the integration of circular economy principles in construction, have valuable knowledge and skills that put them at the forefront of the industry. This experience and expertise in sustainable materials and technologies enable them to position themselves as pioneers in the industry and benefit from new, sustainable market requirements. PBKIK, STEPRI, BI	which hinders investment in sustainable technologies and necessary adjustments. High costs for the implementation of recycling measures, the introduction of new technologies and the burden of regulatory requirements pose an additional challenge. The dependence on EU funding to finance sustainable projects also makes companies vulnerable to changes in funding policy. PBKIK, SPC, STEPRI, MJC, BI	**Growing importance of sustainability and education** The growing awareness of sustainability and the need to produce sustainability reports offer companies the opportunity to improve their market position and position themselves as leading players in the circular economy. At the same time, educational initiatives, such as seminars and workshops, offer companies the opportunity to spread knowledge about sustainable practices and raise awareness among their employees and customers.	sustainability initiatives. PBKIK, SPC, STEPRI, MJC **Greenwashing and lack of green tenders** Despite the growing interest in sustainability, there are many cases of greenwashing, where companies falsely claim environmentally friendly practices without actually implementing them. This undermines the credibility of the industry and makes it more difficult to promote genuine sustainable solutions. In addition, there is often a lack of "green

			CPU, SPC, STEPRI	tendering" that would support the introduction of sustainable materials and practices in construction and other sectors. CPU, SPC

Reducing the impact of certain plastic products on the environment

The Republic of Croatia has transposed the main provisions of the SEA Directive into national law through the Waste Management Act [1] and a special ordinance on packaging and packaging waste, single-use plastic products and fishing gear containing plastic (OG 137/23) [2]. As a result, several single-use plastic products may no longer be placed on the market in Croatia from July 31, 2021, the date on which the Waste Management Act came into force. These products include cotton buds, various eating utensils, plates, straws, drink stirrers, balloon sticks, food and beverage containers made of expanded polystyrene (EPS) and products made of oxo-degradable plastic [3,4]. This regulation is directly applicable in Croatia and does not need to be transposed into national law [6].

5. CROSS-NATIONAL SUMMARY

Cross-national summarization of recurring key messages by sector

SWOT-Analysis for General
(was carried out by AT, PL, HR, IT, DE)

Yellow = All countries represented

Partner	Strengths	Weaknesses	Opportunities	Obstacles
Total	**Awareness of sustainability and the circular economy** Several statements emphasize the growing awareness and increasing importance of sustainability both in society and within companies. This includes the growing interest in sustainable practices, recycling initiatives and the willingness to	**High costs and financial barriers** Several statements emphasize the financial challenges associated with the implementation of circular economy strategies. This includes high investment costs for switching to sustainable business models as well as high production and compliance costs that	**Growing market for sustainable and environmentally friendly solutions** A recurring theme is the increasing demand for environmentally friendly products and sustainable solutions that offer companies new business opportunities. The focus on sustainability opens up new markets and enables the	**Competitive pressure** A recurring obstacle is the strong competitive pressure, especially from companies that do not focus on the circular economy. These companies could offer cheaper alternatives, making it more difficult to successfully implement sustainable practices and compete in the market. This is reflected

	implement measures that contribute to the circular economy. Examples include "Awareness of circular economy", "Growing knowledge of sustainability" and "Growing awareness of sustainability". **AT, PL, HR, DE** **Technological innovation and advanced technologies** Companies are increasingly integrating modern technologies into their processes that both increase efficiency and promote sustainability. The use of innovative technologies, such as in window recycling, is particularly	prevent companies from investing in sustainability. Examples include: • "High investment costs" • "High production costs" • "Financial barriers" • "High compliance costs" **AT, PL, HR** **Lack of internal focus and implementation** Another frequently cited weakness is the lack of internal focus on sustainability and the insufficient implementation of circular economy strategies within the company. The lack of long-term planning and	expansion of the range of green products and services. This is made clear by phrases such as "increasing demand for environmentally friendly solutions", "growing market for recycling solutions" and "opening up new market segments". **AT, HR** **Subsidies and state support** The possibility of benefiting from financial subsidies and funding is seen as a great opportunity for companies that want to implement sustainable measures. This includes both national and EU-supported funding for	in various phrases such as "competitive pressure", "companies that are less committed to the circular economy" and "companies may find it difficult to compete in a highly competitive environment". **AT, PL, HR** **Financial hurdles and insufficient funding** Financial challenges are another frequently cited obstacle. Both the high investment costs of switching to sustainable practices and the insufficient economic subsidies and financial incentives hinder progress in the circular economy. Terms such as

	emphasized. This is reflected in phrases such as "integration of advanced technologies" and "innovative technologies". AT, PL, HR, DE **Compliance with legal requirements and regulatory support** Another frequently cited strength is compliance with legal requirements and the good regulatory framework that supports the implementation of sustainable practices. This is illustrated by statements such as "compliance with legal requirements" and "good regulatory framework".	the reactive attitude of many companies, which only react to external pressure instead of proactively taking sustainable measures, are particularly emphasized here. Phrases such as "lack of long-term planning", "reactive approaches" and "lack of implementation" illustrate this weakness. **AT, PL, IT** **Lack of training and expertise** Another recurring theme is the lack of appropriate expertise and training resources for the successful implementation of the circular economy. Companies often do	innovation, research and the implementation of circular economy strategies. These opportunities are included in statements such as "Economic subsidies", "EU funding and initiatives" and "Future regulatory support". **AT, PL, HR, IT, DE** **Innovation and improvement of internal processes** The transition to a circular economy is seen as an opportunity to improve internal processes and drive innovation. This includes both efficiency improvements in	"insufficient funding", "financial barriers" and "dependence on financial incentives" underline this problem. **AT, HR, IT** **Regulatory complexity and excessive demands due to regulations** One frequently cited difficulty is the complex and often unclear regulations in the area of the circular economy, which can overwhelm companies. Unclear regulations and the fear of bureaucratic effort make it difficult to implement sustainable measures. This becomes clear in expressions such as "overburdened by regulations",

	AT, DE	not have enough in-house expertise to effectively implement sustainability strategies, and there are also too few targeted educational programs that clearly communicate the benefits of the circular economy. This weakness is highlighted by terms such as "lack of training", "insufficient training resources" and "lack of internal expertise". **AT, PL, IT**	production and the introduction of new business models and technologies. This is expressed in terms such as "innovation in internal processes" and "expansion of business opportunities". **AT, DE**	"regulatory complexity" and "bureaucratic hurdles". **AT, PL, IT, DE**

SWOT Analysis for Mechanics & Mechatronics

(was carried out by all countries: AT, SK, HU, PL, HR, IT, DE)

Yellow = All countries represented

Partner	Strengths	Weaknesses	Opportunities	Obstacles
Total	**Experience, expertise and technological skills** Several statements emphasize the importance of experience, expertise and technical skills, which serve as a strong foundation for success in the circular economy. This includes both many years of industry experience and advanced technological skills, such as in	**High costs and financial burdens** A recurring theme is the financial hurdles that companies face when implementing circular economy strategies. This includes high investment costs for new technologies and machinery as well as additional costs associated with environmental compliance, research and development. Phrases such as "high investment costs",	**Growing demand for sustainable products and solutions** A recurring theme is the growing demand for sustainable products and solutions, which companies see as an important opportunity. Increasing consumer interest in environmentally friendly products is opening up new markets and business opportunities. Phrases such as "Rising demand", "Strong	**Regulatory uncertainties** Uncertainties and changes in legal regulations that can delay or complicate the implementation of sustainable practices are frequently mentioned. Terms such as "regulatory hurdles", "contradictory regulations", "regulatory inconsistencies" and "regulatory risks" reflect this. **AT, SK, HU, HR, IT**

	metalworking, mechatronics or digitalization. Phrases such as "Experience and expertise", "High technical competence" and "Technological skills" highlight these strengths. **SK, PL, HR, DE** **Commitment and reputation enhancement** Another frequently cited strength is the strong internal commitment to sustainability, which has a positive impact on the company's image and reputation. Companies that are actively committed to	"cost burden", "funding needs" and "underfunded R&D departments" highlight this weakness. **AT, SK, HU, PL, IT, DE** **Lack of qualified employees and inadequate training** Another frequently cited problem is the lack of qualified employees and insufficient training in relation to the specific requirements of the circular economy. Companies have difficulties finding the necessary skilled workers or training their existing employees accordingly. This is underlined by	customer interest in sustainability", "Growing demand for environmentally friendly products" and "Sustainable production processes" highlight this opportunity. **AT, SK, HU, PL, HR, IT, DE** **Innovation and technological development** Investing in innovative technologies to promote the circular economy is a frequently cited opportunity. This includes technological advances in production and waste recycling as well as the	**Market and competitive pressure** Companies that implement sustainable practices are often faced with cheaper alternatives from competitors that focus less on sustainability. Terms such as "market pressure", "competition for talent", "competition from non-innovative suppliers" and "competitive pressure due to costs" are recurring. **AT, SK, HU, PL, HR, IT, DE** **Economic uncertainty and financing**

	the circular economy and sustainability can gain the trust of stakeholders and position themselves as trustworthy players. This is made clear by terms such as "reputation & trust", "commitment" and "image enhancement". **AT, HU, HR, IT, DE** **Market opportunities and differentiation** The focus on the circular economy offers companies opportunities to differentiate themselves in the market and tap into new business opportunities.	terms such as "lack of qualified employees", "insufficient training" and "lack of incentives". **AT, HU, PL, HR, IT** **Slow implementation and lack of focus on circular economy** Many companies have not yet placed a significant focus on the circular economy and there is often a slow implementation of necessary changes and innovations. Traditional mindsets, a slow adaptation process and the lack of a clear business strategy on the circular economy prevent rapid	development of new business models. Terms such as "future-oriented innovation", "technological innovation", "innovation", "development of new business models" and "market leadership through technological innovation" reflect the importance of technological innovation for the circular economy. **AT, SK, PL, HR, IT** **Cooperation, partnerships and regulatory support** Cooperation with other companies and institutions as well as support through political framework	Fluctuations in the economic situation and uncertainties in the financing of sustainable measures represent a significant obstacle. Terms such as "uncertainty in financing", "market volatility", "price pressure due to economic downturns" and "economic uncertainties" frequently crop up. **AT, SK, HU, PL, HR, IT, DE**

	Companies that focus on sustainable practices and innovative business models can position themselves as pioneers and gain a competitive advantage. This is underlined by statements such as "differentiation", "new business opportunities" and "competitive advantage". **AT, IT**	implementation of sustainable practices. Terms such as "slow implementation", "lack of focus on circular economy" and "traditional mindsets" reflect this challenge. **AT, HU, PL, HR**	conditions or subsidies are also important opportunities. Partnerships can accelerate the innovation process, facilitate access to resources and expertise and create new business opportunities. Phrases such as "Collaboration and partnerships", "Market for external expertise", "Need for government or EU funding", "Regulatory changes" and "Strong institutional support" underline the importance of collaboration and political support. **AT, HU, HR, IT**	

SWOT-Analysis for Packaging

(was carried out by AT, SK, HU, PL, IT)

Partner	Strengths	Weaknesses	Opportunities	Obstacles
Total	**Sustainability and innovation:** The use of digitalization, sensors and the focus on recycling and bio-based, sustainable packaging strengthens competitiveness, as these solutions are both environmentally friendly and marketable and meet the growing demand for ecological products. **AT, HU, PL, IT** **Family-run company structure:** Family-run companies with	**Unclear EU and national regulations:** especially regarding end-of-waste criteria, make it difficult to implement sustainable practices as companies are unsure how to comply with regulatory requirements. **PL, IT** **Dependence on price fluctuations and limited diversification**: Sensitivity to changes in input and energy prices and limited diversification of	**Growing demand for sustainable products and packaging** There is increasing demand from both consumers and regulators for sustainable packaging and products. This is creating new market opportunities, particularly in the area of environmentally friendly packaging and bio-based materials. **AT, SK, HU**	**Regulatory uncertainties and contradictory regulations** Inconsistent or contradictory legal regulations, particularly with regard to sustainability rules and the definition of end-of-waste criteria, create uncertainty and make investments more difficult. Companies are often unsure how to adapt to these changes, which delays the implementation of circular economy strategies.

	regional roots often integrate ESG requirements and can act as flexible trendsetters in niche markets, which strengthens their market position and promotes innovation. **AT, SK** **Experience and market knowledge**: Companies benefit from many years of experience and established production processes, which create trust and reliability, as well as good market knowledge, which enables them to react quickly to trends and research results.	products and customers make companies susceptible to market fluctuations and reduce their flexibility and stability. **SK, HU, PL** **Higher costs and limited applicability of bio-based packaging**: Bio-based packaging is more expensive than conventional alternatives and can only be used in certain application areas, which limits its broad marketability and scalability. **PL, IT**	**Political support and funding** National and EU policies and government funding for circular economy initiatives offer significant opportunities for companies. These policy frameworks and financial incentives can encourage the development and implementation of sustainable solutions and stimulate long-term investment in the circular economy. **AT, HU, IT** **Transition to a circular economy and technological innovation:** The	**AT, HU, IT** **Market pressure and competitive pressure** Price pressure, particularly from cheaper alternatives from competitors that do not focus on sustainable practices, is a significant obstacle. Competition from large, established suppliers and foreign companies can also put pressure on smaller companies, limiting their ability to operate sustainably. **HU, PL** **Economic instability and the cost of innovation** Economic uncertainty and fluctuating market

	SK, HU, PL		opportunity to invest in circular production and the introduction of automated packaging solutions could increase efficiency, create new business opportunities and reduce costs in the long term**.** **SK, PL**	conditions make long-term planning difficult and can force companies to hold back their investments. Added to this is the high financial cost of developing new technologies and innovations, which could prevent smaller companies from making the necessary adjustments. **AT, SK, HU, IT**

SWOT Analysis for Plastics

(was carried out by all countries: AT, SK, HU, PL, HR, IT, DE)

Partner	Strengths	Weaknesses	Opportunities	Obstacles
Total	**Commitment to sustainability and environmental awareness** Many companies show a strong commitment to sustainable practices and the integration of circular economy principles into their business processes. This includes the use of recycled materials, recycling initiatives and the prioritization of sustainable technologies and production methods. A clear commitment to	**Insufficient financial means and resources** Many companies, especially SMEs, suffer from a lack of capital, which makes it difficult to make the necessary investments in modern technologies, environmental measures and innovations. The lack of financial resources makes it difficult to implement the necessary steps to improve sustainability and the circular economy and maintain competitiveness.	**Growing demand for sustainable products** The increasing demand for sustainable products, both from consumers and companies, is creating new business opportunities. This covers a wide range of areas, such as recycled plastics, bio-based materials and sustainable 3D printing solutions. The growing awareness of sustainability is opening up markets and strengthening the competitive position of	**Regulatory uncertainties and contradictory regulations** Inconsistent and contradictory regulations at national and international level create uncertainty for companies, which makes planning and investment more difficult. Differing interpretations and questions of detail in regulation, particularly in the areas of recycling and sustainability, lead to increased complexity and hinder progress, as

	sustainability not only strengthens market position, but also promotes customer confidence and increases competitiveness. **PL, HR, IT** **Technological innovation and adaptability** Companies are increasingly focusing on technological innovation, such as the use of digitalization, sensors and innovative materials to promote design for recycling. Modern production facilities and a willingness to adopt	UEBA, SPC, MJC, MESAP, ENVIPARK **SK, PL, HR, IT** **Unstable and inadequate regulatory environment** Uncertainties in the regulatory area, such as unpredictable changes to regulations or unclear government support, represent a significant obstacle. Inconsistent and contradictory regulations and the lack of clear incentives and funding make it difficult for companies to plan and implement long-term, sustainable strategies. **HU, HR, IT**	companies that focus on environmentally friendly practices. **AT, HU, PL, HR, IT, DE** **Political and regulatory support** Increasing political support for sustainability and the creation of appropriate policy frameworks offer companies the opportunity to make long-term investments. National and EU-wide measures to promote the circular economy, such as specific legal regulations or subsidies for ecological solutions, can support companies in switching to more sustainable production methods	companies find it difficult to adapt to constantly changing regulations. **AT, IT, DE** **Economic pressure and volatile markets** Economic instability, market fluctuations, rising material costs and price pressure, especially in difficult economic times, pose a major challenge. Companies must constantly deal with fluctuations in commodity prices and the uncertainties of global markets. This can jeopardize the profitability of sustainable practices, which often entail higher costs, and affect

	new technologies, such as 3D printing or chemical recycling, allow companies to remain competitive and make the transition to a circular economy efficiently. The flexibility to adapt to new technologies is particularly beneficial for SMEs that can react quickly to market changes. **AT, SK, HU, HR, IT** **Many years of experience and quality** Many companies benefit from years of experience in their industry, be it in plastics, production or recycling. This tradition and expertise not only promotes trust and	**Challenges in material quality and acceptance of recycled materials** The low acceptance of recycled materials and the associated uncertainty regarding the quality of recycled plastic compared to virgin material are significant barriers. Many decision makers, such as CEOs and designers, are often reluctant to use recycled materials as the quality and potential contamination risks are seen as problematic. This hinders the wider adoption of circular economy solutions. **AT, SK, DE**	and create additional market opportunities. **AT, SK, HR, IT, DE** **Expansion of recycling and waste management technologies** The development of new recycling technologies and the expansion of recycling capabilities offer significant potential for increasing efficiency and reducing waste. The implementation of innovative recycling technologies and the use of residual materials as valuable resources promote the circular economy and open up opportunities for companies to increase their	the competitiveness of companies. **AT, SK, HU, PL, HR, IT** **Resistance to change and technological backlogs** Many companies struggle to implement necessary changes towards more sustainable production methods. Resistance to change within companies, often due to cost pressures or lack of conviction, as well as technological backlogs (e.g. delays in implementing new recycling technologies) prevent companies from reaping the benefits of the circular economy.

	stability, but also the ability to develop high-quality products and solutions. In addition, many companies have already successfully implemented quality assurance processes, which strengthens their market position and contributes to customer satisfaction. **AT, SK, HU**		efficiency and competitiveness while reducing their environmental impact. **SK, HU, PL, HR**	Technological and organizational barriers slow down the adoption of new solutions and adaptation to more sustainable practices. **PL, HR, IT, DE**

SWOT-Analysis for Building & Construction

(was carried out by AT, HU, PL, HR, DE)

Partner	Strengths	Weaknesses	Opportunities	Obstacles
Total	**Growing importance of sustainability** Sustainability is increasingly a key issue that helps companies attract young talent and promote a positive image in the industry. The increased focus on sustainable practices, both internally and in products and services, is perceived as a strategic strength that strengthens both the company and its brand. **AT, DE** **Innovations and reuse** Companies are	**Overregulation and complex legal framework conditions** A multitude of standards, regulations and approval procedures make it difficult for companies, especially small ones, to remain compliant. Over-regulation and complex legal frameworks can both increase the administrative burden and limit companies' flexibility and ability to innovate. **AT, PL, DE** **Lack of skilled workers and technophobia**	**Political support and funding** There are increasing policy measures and financial incentives that support companies to implement sustainable and resource-efficient practices. Funding for recycling projects and renovations as well as government support programs offer significant opportunities to finance innovative approaches and accelerate the transformation to a circular economy. **AT, HU, HR**	**Regulatory and legal challenges** Excessive regulation and strict rules are a major obstacle for businesses, especially smaller companies that may have difficulty adapting to new EU directives and legal requirements. This concerns not only compliance with environmental regulations, but also high compliance costs, which can slow down the development of sustainable practices and innovation. **HU, PL, HR, DE**

	increasingly focusing on innovative approaches to reducing waste and reusing materials. The integration of waste materials into new products and the pursuit of continuous optimization of recycling technologies are perceived as important competitive advantages that not only increase resource efficiency, but also improve market position through sustainable and unique product features. **AT, HU, HR, DE** **Expertise and many years of experience** Companies with many years of expertise, particularly in areas such as soil recycling or	The skills shortage is a significant problem, as many skilled workers are moving to other industries. This is exacerbated by a technophobic environment and a lack of political support, which makes it difficult to introduce new technologies and sustainable innovations. **AT, HU, DE** **Financial burdens and lack of resources** Companies often struggle with a lack of financial resources, which hinders investments in sustainable technologies and necessary adjustments.	**Technological innovations and market trends** The possibility of developing innovative technologies that reduce CO_2 emissions and improve energy efficiency offers a huge opportunity for companies. Particularly in the area of timber construction as a forward-looking trend in residential construction and the use of recycled materials and construction waste open up new business opportunities and the chance to offer more sustainable solutions. **HU, PL**	**Economic pressure and cost awareness** The pressure to produce cost-effectively, particularly in the construction industry and recycling sector, often leads to a neglect of sustainable solutions. Many customers place too much emphasis on low-cost products without considering the environmental footprint, making the transition to more sustainable practices more difficult. In addition, price fluctuations and rising raw material costs are further economic challenges that jeopardize the profitability of sustainability initiatives. **HU, PL, HR**

	the integration of circular economy principles in construction, have valuable knowledge and skills that put them at the forefront of the industry. This experience and expertise in sustainable materials and technologies enable them to position themselves as pioneers in the industry and benefit from new, sustainable market requirements. **HU, HR, DE**	High costs for the implementation of recycling measures, the introduction of new technologies and the burden of regulatory requirements pose an additional challenge. The dependence on EU funding to finance sustainable projects also makes companies vulnerable to changes in funding policy. **HU, PL, HR, DE**	**Growing importance of sustainability and education** The growing awareness of sustainability and the need to produce sustainability reports offer companies the opportunity to improve their market position and position themselves as leading players in the circular economy. At the same time, educational initiatives, such as seminars and workshops, offer companies the opportunity to spread knowledge about sustainable practices and raise awareness among their employees and customers. **AT, PL, HR**	**Greenwashing and lack of green tenders** Despite the growing interest in sustainability, there are many cases of greenwashing, where companies falsely claim environmentally friendly practices without actually implementing them. This undermines the credibility of the industry and makes it more difficult to promote genuine sustainable solutions. In addition, there is often a lack of "green tendering" that would support the introduction of sustainable materials and practices in construction and other sectors. **AT, PL**

6. Key messages from all countries

Executive Summary of the SWOT-analyses of all partners

Strengths

- **Awareness and commitment:** Many companies recognize the need for a circular economy and sustainable practices. This awareness not only promotes the corporate image, but also the willingness to innovate.
- **Technological expertise:** The use of advanced technologies such as 3D printing, digitalization and sensors strengthens competitiveness and promotes resource-saving processes.
- **Network and cooperation:** Strong connections and cooperation with other companies, institutions and universities increase the exchange of knowledge and create access to resources.
- **Attractiveness for the workforce:** Sustainable practices and circular approaches increase the attraction of qualified employees and promote retention.

Weaknesses

- **High investment and operating costs:** The transition to sustainable practices requires significant investment, which is particularly challenging for small businesses.
- **Lack of internal expertise and resources:** The need for training and education on sustainable practices is high, but many companies have limited internal capacity.
- **Regulatory complexity and bureaucracy:** Strict and often unclear regulations make it difficult to implement sustainable measures and cause compliance costs.
- **Lack of market incentives:** Some companies rely heavily on external incentives to implement sustainable initiatives, which limits internal motivation.

Opportunities

- **Growing demand for sustainable products:** The growing market for environmentally friendly products is opening up new business areas and market niches, especially in recycling and bio-based materials.
- **Funding programs and subsidies:** National and EU subsidies offer financial support for companies that want to implement sustainable projects.
- **Technological innovations and market segments:** The development and application of new technologies can increase efficiency and open up market segments such as bioplastics or recycling.
- **Sustainability as a market standard:** Sustainable practices are increasingly becoming the market norm, which can give companies a competitive edge if they act proactively.

Threats

- **Intense competition and price pressure:** Companies that do not focus on sustainable solutions could gain competitive advantages through lower prices, which poses a challenge for sustainable companies.
- **Market volatility and economic uncertainties:** Fluctuations in the economy or in commodity prices can hinder sustainable investments and jeopardize profitability.
- **Regulatory uncertainties and changes:** Rapidly changing or unclear regulations could make adjustments more difficult and investments in sustainable projects risky.
- **Lack of consistency in sustainability standards:** The different interpretations of sustainability requirements in different markets make acceptance difficult and slow down development.

Interreg CENTRAL EUROPE

Co-funded by the European Union

CURIOST

DISCOVER MORE ABOUT THE PROJECT AND GET IN CONTACT

@CURIOST INTERREG CENTRAL EUROPE

interreg-central.eu/projects/curiost/.eu

This publication has been developed within the CURIOST project, supported by the Interreg CENTRAL EUROPE Programme with co-financing from the European Union. Its content is the sole responsibility of the authors and the project partnership and does not necessarily reflect the views or positions of the Interreg CENTRAL EUROPE Programme, its programme bodies or the European Union. Neither the programme authorities nor the European Union can be held responsible for any use that may be made of the information contained herein.