



A study on DPP costs and benefits for SMEs

Version 1.0

March 2024



Funded by
the European Union

Lead Beneficiary	CEA, CEI, atma.io, WORDLINE, GTS
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Work Package	5
Deliverable	D5.2
Due Date	29 February 2024
Actual Delivery Date	05 March 2024
Abstract	This report presents the potential costs and benefits, as well as the impact that the implementation of the DPP may have on Small and Medium-sized Enterprises (SMEs). In addition, the report attempts to elucidate the upcoming role that DPP solution providers will play in facilitating this uptake.
Recommended Citation	Bernier, C., Dao, A., Gupta, M., Kocia, K., Le, M., Schneider, A. (2024). A study on DPP costs and benefits for SMEs. CIRPASS Consortium

Document Revision History			
Date	Version	Author/Contributor/Reviewer	Summary of Main Changes
05/03/2024	1.0	Carolynn Bernier, Anh Dao, Milon Gupta, Kamila Kocia, Minh Le, Andreas Schneider	First complete version

Dissemination Level and Nature of the Deliverable		
PU	Public	PU
SEN	Sensitive, limited under the conditions of the Grant Agreement	-
Nature	R = Report, E = Ethics or, O = Other	R

CIRPASS Consortium			
#	Participant Organisation Name	Short Name	Country
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29	Global Electronics Council	GEC	US/NL
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31	Global Battery Alliance	GBA	BE

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Preparing the ground for the gradual piloting and deployment of DPPs from 2023 onwards, focusing on developing a roadmap for prototypes in three value chains: electronics, batteries and textiles.

Grant Agreement: 101083432
Theme: DIGITAL-2021-TRUST-01
Start Date of Project: 01 October 2022
Duration: 18 months

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Objective of this document

The objective of this study is to identify the potential costs and benefits, as well as the impact that the implementation of the DPP may have on Small and Medium-sized Enterprises (SMEs). The focus is on SMEs who may be faced with regulatory requirements for issuing DPPs for their products, thus referred to in this report as ‘responsible economic operators’. This report further attempts to elucidate the upcoming role that DPP solution providers will play in facilitating this uptake. DPP solution providers are third party actors who may assist SMEs in any steps related to the collection, assembly and formatting of DPP information requirements and the issuing of the DPP itself and/or hosting of the DPP data. In this report, this latter group are referred to as DPP-as-a-Service providers.

1. Introduction

Small and medium-sized enterprises (SMEs) are the backbone of Europe's economy. They represent 99% of all businesses in the EU. They employ around 100 million people, account for more than half of Europe's GDP and play a key role in adding value in every sector of the economy¹.

SMEs will face a number of challenges in relation to the deployment of the DPP, including (but not limited to):

- Challenge of keeping up with the regulatory context
- Challenge of upstream data collection and provisioning
- Challenge of issuing DPPs
- Challenge of updating and maintaining DPPs
- Challenge of interacting with DPP data downstream (e.g., process automation, writing events into the DPP)

The objective of this study is to identify the potential costs and benefits, as well as the impact that the implementation of the DPP may have on Small and Medium-sized Enterprises (SMEs). The focus is on SMEs who may be faced with regulatory requirements for issuing DPPs for their products, thus referred to in this report as ‘responsible economic operators’. This report further attempts to elucidate the upcoming role that DPP solution providers will play in facilitating this uptake. DPP solution providers are third party actors who may assist SMEs in any steps related to the collection, assembly and formatting of DPP information requirements and the issuing of the DPP itself and/or hosting of the DPP data. In this report, this latter group are referred to as DPP-as-a-Service providers.

2. Methodology

This study adopted a pragmatic approach to estimate the cost elements and potential benefits of DPP implementation for SMEs, which consisted of the steps described below.

- The first step of this study was to define the practical constraints and factors related to the determination of costs that SMEs will face in implementing the DPP. This involved a review of best practices, as well as gathering of input from experts and industry practitioners. The goal

¹ https://single-market-economy.ec.europa.eu/smes_en

was to identify the key challenges that SMEs would encounter when trying to adopt DPP practices.

- Once the practical constraints of DPP implementation for SMEs had been defined, an interview guideline was developed to collect data from a number of SMEs and potential DPP solution providers. These interview guidelines are provided for reference in the Appendix.
- Based on the interview guideline, eight interviews were conducted with selected stakeholders, such as SME owners and managers. The selected companies consist of four potential DPP-as-a-Service providers, and four SMEs from the textile and electronics industries. These interviews provided in-depth insights into the practical constraints of DPP implementation, from the perspectives of those who are directly involved in the process. The interview transcripts have been analysed to identify common constraints and concerns of SMEs and solution providers. The responses from both SMEs and DPP solution providers also served as a feedback loop for the validation of anticipated practical constraints (as initially defined in step 1).
- Finally, the key findings of the study were formulated and are provided together with a list of recommendations for policymakers in this report.

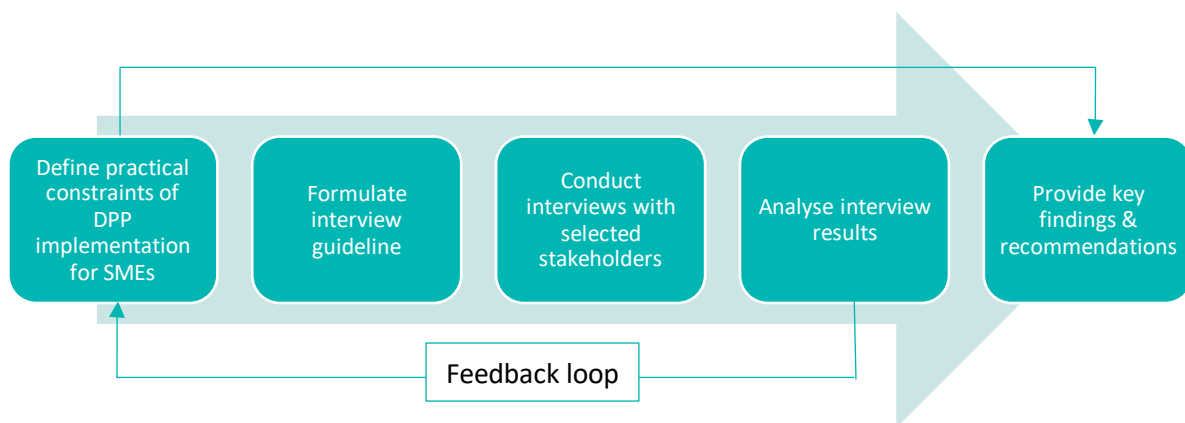


Figure 1: Methodology for study of DPP costs elements for SMEs

3. Practical constraints for SMEs

SMEs often have limited financial means, human resources and IT systems to keep up with digitization of business processes, and the implementation of DPP solutions will be no exception. SMEs are expected to face several practical constraints while implementing the DPP, which are listed below:

3.1. Regulation

- Regulation process: The regulation for DPPs is still evolving, and the process is not always clear to outsiders, which can create uncertainty for SMEs seeking to prepare for DPP implementation. This could lead to a delay in DPP deployment.

- Lack of understanding: Understanding DPP-related regulation and its impacts may not be straightforward due to perceived formal and complex regulatory documents. In particular, the fact that some regulations related to the DPP focus on cross-sectoral aspects, and others on sector-specific aspects, is a common source of difficulty for SMEs.

3.2. Financial

- DPP implementation costs: It is clear that the implementation of the DPP will result in new costs for SMEs. These ideally need to be justified and offset by business benefits, which may be challenging for SME businesses with low profit margins.
- Potential additional expenses: Some SMEs might need additional software and hardware (e.g. Product Lifecycle Management, Enterprise Resource Planning, Labelling System, etc.) to support the gathering and processing of the data needed for the DPP.
- Personnel training cost: The lack of resources to gather the needed comprehensive DPP knowledge may create a bottle neck for SMEs, preventing rapid DPP deployment.
- Lack of scale: SMEs lack bargaining power to take advantage of economies of scales when it comes to DPP solutions and product costs (e.g. data carrier costs).
- Post effects of economic and supply chain crises: SMEs are in the process of recovering from recent crises, including the COV19 pandemic, high inflation and supply chain issues, which have resulted in financial losses. In this context, their ability and willingness to invest in DPP deployment may be curtailed.

3.3. Organisation

- Lack of awareness: Many SMEs may not be aware of DPPs or their potential business and technical impact on their daily processes.
- Lack of skills: Many SMEs may lack the internal skills and expertise needed to implement and manage a DPP system.
- Change management: Implementing a DPP can require changes to internal processes and workflows, which can be challenging for SMEs to manage.
- Lack of human resources: Outsourcing, e. g. a task related to DPP data generation is much harder to organize for smaller organizations than it is for larger companies.
- Business processes are hard to adapt: Business processes are not designed to support DPP implementation nor leverage DPP data when available.
- Missing supplier relationships: Lack of supplier relationships that support data collection processes.

3.4. Technical

- Understanding DPP: SMEs grapple with understanding the implications of the DPP requirements and how these affect their operations.
- Adapting assortment: Adapting large product ranges and/or aligning with new circularity and ecodesign regulations poses a significant challenge, demanding substantial changes.



- DPP solution complexity: If SMEs choose to develop a solution themselves, proper IT expertise is required to cover system design, implementation and operation, which can be a complex exercise.
- Data integration: The implementation of DPPs may require additional expenses related to integrating a DPP system with existing IT infrastructure and processes, especially when dealing with older systems.
- Data complexity: Collecting, normalizing and storing data required for DPPs can be complicated for SMEs to manage, especially regarding data quality.
- Compliance: Lack of DPP compliant elements in sector specific IT systems (Product Lifecycle Management/Enterprise Resource Planning/Product Information Management, etc.).
- Data access and security: Secure access management and data protection measures require additional expertise on top of common IT knowhow.
- Infrastructure in general: e.g. access to high speed Internet.
- Data Privacy: RFID technology is broadly used in a wide range of products, but it is unclear how to deal with privacy topics. For example, an unremoved RFID tag of a fashion product may unintentionally reveal the information about the consumer's personal belongings.

3.5. Standardization

- Standardization: SME's often lack know-how on existing standards and how to apply them. Standardization is necessary for many elements of the DPP (e.g., data carriers, data formats, means for gathering data from external sources), which can create confusion and complexity for SMEs.

4. Interview results

The CIRPASS task force conducted interviews with selected representatives of SMEs and potential DPP service providers to better understand the knowledge, attitude and preparedness of SMEs regarding the DPP. In this context, financial implications and possible benefits of the DPP for SMEs were of particular interest.

To streamline the interview process, an interview guideline was prepared. The structured interview approach was based on establishing SMEs' foundational knowledge and broader comprehension of the Digital Product Passport (DPP) concept. This involved presenting background information and fostering a general understanding of the DPP. Following this groundwork, the focus shifted towards soliciting insights from businesses regarding their perspectives on the implementation of the DPP. These discussions focussed on the Benefits, Barriers, Enablers, and Opportunities perceived by these businesses in the context of DPP implementation. A further attempt was made to understand the costs of implementing DPP for these SMEs. While exact figures are difficult to extract, the insights gained helped with the cost estimation and development of the recommendations presented below. In total eight interviews were conducted in the second half of 2023. It is worth noting that, while the task force ideally wished to interview a wider spread of economics actors, reality showed that it is difficult to find large numbers of organisations that are willing to engage in interviews due to many reasons, such as competition fears, lack of time, DPP topic not considered an urgent priority, etc.

The next sections provide a summary of our key findings from the interviews conducted.

4.1. Feedback from SME economic operators

The business representatives of the organizations interviewed appeared to be quite familiar with the concept of DPP. However, the depth and nuances of understanding appeared to vary among these economic operators. Their diverse interpretations and perspectives regarding the DPP concept became apparent during the discussions, implying differing levels of comprehension or varying emphases placed on distinct facets of the DPP. One of the focal points of the interviews was to explore the diverse perspectives and experiences of SME representatives related to the introduction of a DPP. It is worth mentioning that the SMEs interviewed are not registered stakeholders of the CIRPASS project. However, they have heard of the term DPP and self-declare to be in the "sustainable business space". But it can be argued that this highlights the confusion around DPP and challenges of implementing DPP on a large scale. If the informed companies already face multiple issues, the unaware SMEs are likely to face even more difficulties.

There was common recognition of the importance of transparency and circularity within the context of the DPP, although the specific interpretations and perspectives regarding their implementation differed among the stakeholders. The respondents indicated that supply chain transparency and traceability are essential for circularity goals and business models.

The prevailing sentiment toward the DPP among interviewees is neutral, leaning toward perceiving it as having minimal or zero benefit. They highlight a contextual limitation, asserting that, e.g., for standard textiles, a DPP might hold little relevance. For example, if the data is limited (i.e. similar to label data), there would be no benefits or competitive advantage, particularly when all companies are required to issue DPPs. Moreover, some economic actors suggest that focusing regulatory efforts on banning certain materials like i.e. elastane could be more impactful.

Additionally, there is a recognition that consumer interest in sustainable products varies: while some specifically seek sustainable options, others prioritize trying different designs, impacting purchasing decisions.

Some economic operators view data carriers such as QR codes or RFID/NFC buttons not solely as a means to provide information, but also as an avenue to gather valuable consumer insights. It is important for SMEs to understand that DPP regulations do not allow them to freely collect consumer information. Furthermore, the current lack of returned used products impedes the assessment of the data carrier's recyclability or sorting benefits, creating uncertainty around its practical implications.

Regarding transparency and competitive advantage, there is a nuanced perspective. Stakeholders state that when all brands are required to provide similar information, information availability is no longer a competitive advantage for those that already volunteer to provide "sustainability" data. Stakeholders acknowledge that while a DPP might not confer a competitive edge in terms of transparency, it remains an avenue for engaging consumers and aiding recycling efforts, especially in providing detailed recycling information that is constrained by physical space on product labels.

While acknowledging the importance of sustainability, particularly in the textile market, economic actors assert that the primary drivers of consumer purchasing decisions often align with design, fit, and quality over explicit environmental impact. For some brands, sustainability is an inherent aspect,

considering it a given rather than a primary focus. They emphasize the importance of competing on typical product features to attract consumers and note that sustainability can serve as a bonus that enhances consumer satisfaction and loyalty.

The potential benefits of a more flexible DPP, allowing item-level tracking and dynamic data for understanding consumer behaviours and product usage, are recognized. However, economic operators express uncertainty regarding potential impact on production process and associated costs, raising questions about its feasibility and implementation at scale.

4.2. Feedback from potential DPP-as-a-Service providers

The potential DPP service providers interviewed showed a commendable understanding of the requirements for Digital Product Passports, demonstrating their familiarity with the necessary elements. These service providers consider themselves to be capable of providing future DPP-as-a-Service to SMEs, meaning IT solutions and services related to DPP issuing and data management, allowing SMEs to focus on their core business of manufacturing products.

The interviewees considered their solutions align closely with emerging DPP requirements, with future potential to expand into a DPP-as-a-Service offering. In this respect, they seem to be transitioning to become data operators, aiming to provide Data-as-a-Service (DaaS) solutions to companies of various sizes. Most service providers strongly believe that an advisory role is a key element, in addition to the core IT-solutions, to help SMEs understand the implication of DPP regulation. They are aware of how confusing and challenging DPP implementation can be for SMEs.

A common opinion was that DPP offers multifaceted benefits to businesses. Primarily, it aids in ensuring compliance with regulations, serving as a tool to meet necessary standards. Additionally, DPPs serve as a barrier against counterfeit products, especially for brands in the luxury segment. They also see a lot of enthusiasm to build solutions on top of the mandatory DPP.

Some DPP service providers state that a product demonstrating an extended lifespan could potentially lead to an extension in warranty coverage. However, it is essential to note that while numerous benefits are anticipated, many still require validation.

Similar to most innovations and new technologies, the initial phase might witness a sluggish adoption rate. Yet, all interviewed DPP service providers strongly believe that successful pilot programs and smooth implementations will accelerate the momentum of DPP adoption. In theory, DPPs could offer a competitive edge for DPP service providers. Notably, top management might view 'sustainability' as a potential advantage for European businesses, substantiating claims to customers and aiding them in compliance through relevant data collection. This assumes a significant demand for environmentally friendly products or solutions. However, the risk lies in companies perceiving DPP solely as a technical or legal matter, overlooking its potential benefits.

- To conclude, potential DPP-as-a-Service providers, with the right guidance, believe that they can realize significant benefits to SMEs through economies of scale, i.e., spreading the development investment and service costs among many SMEs. Early adopters (i.e., DPP-as-a-Service providers) could evolve into data brokers, differentiating themselves and potentially securing more business. DPP service providers believe that the adoption of DPPs may spawn

new businesses like recycling or offer opportunities for brands through novel processes, business models, and enhanced consumer engagement.

5. Overview of cost elements for DPP implementation for SMEs

It is of great importance for the stakeholders in the DPP ecosystem to gain insights on the potential costs involved in DPP implementation, especially for SMEs. In our study, we have tried to obtain the cost elements from both quantitative as well as qualitative perspectives, in order to create an accurate picture of the potential costs for SMEs. However, reality shows that all potential DPP service providers are reluctant to provide quantitative figures due to commercial reasons and sometimes, they just don't know yet. Nonetheless, combining insights gained from interviews with industrial expertise from CIRPASS partners has led to a high-level overview of qualitative cost elements for both SMEs and DPP service providers, as shown in Table 1. The insights we collected could be a first step in helping individual SMEs to estimate their DPP-related costs and develop implementation plans. The multitude of options and elements to be considered require a thorough case-by-case calculation for each SME.

From the SME's perspective, two main scenarios are considered:

1. SME do-it-yourself: this scenario assumes that SMEs have sufficient IT expertise, financial means and the right business case to implement the DPP solution by themselves.
2. SME delegated solution: this scenario assumes that SMEs decide to delegate DPP related solutions to a DPP-as-a-Service provider. The service provider may be a direct solution supplier to the SME, or may be hired by a branch association, which serves as intermediary, and which indirectly provides the solution to the SME.

From the DPP service provider perspective, investments are indeed necessary to implement DPP solutions for SMEs. In general, it can be assumed that economies of scale will be achieved through multitenancy² and investment in solution development spread over multiple clients. By multitenancy we mean an architecture in which a single instance of a software application serves multiple customers. In many cases, the DPP issuing/hosting service may be an add-on service to an existing service offering. In turn, SMEs are expected to gain economic benefits by delegating DPP solution to a service provider instead of implementing it themselves.

It is also important to mention that, even though the volumes of related DPPs play a role in scaling effects, they are not necessarily linked to the company size. Due to the product assortment and business model, a small company may sell more product lines than a larger company.

Table 1 provides an overview of cost elements for DPP implementation for SMEs and potential DPP-as-a-service providers, which also demonstrates the scaling effect in terms of possible pricing mechanisms.

² <https://en.wikipedia.org/wiki/Multitenancy>

	SME	SME	DPP Service Provider	
Cost Elements	Do-it-yourself	Delegated solution	Delegated solution	As-a-Service
Labeling				
Labeling software	optional	optional		
Labeling hardware	optional	optional		
DPP-as-a-Service				
DPP-as-a-service		x		volume dependent
DPP development				
DPP software development	x		x	spread over multi-tenant
Software licenses	optional		x	spread over multi-tenant
DPP software maintenance	x		x	spread over multi-tenant
Hardware for DPP solution development	x		x	spread over multi-tenant
Additional software modules in existing software, e.g.: PLM, ERP, MES, PIM	optional	optional		spread over multi-tenant
DPP Operation				
Cloud hosting services	x		x	volume dependent
Purchase of product identifiers	x		x	volume dependent
Cloud hosting services	x		x	volume dependent
Maintenance	x		x	spread over multi-tenant
Back-up cost	x	x	x	spread over multi-tenant
Helpdesk		x	x	spread over multi-tenant
Data Integration				
Data integration (e.g internal or with suppliers)	x	x		complexity & use of data generation standards
Certification				
Certification of data	x	x		depending on data complexity
Certification of DPP solution			x	spread over multi-tenant
Project management				
Project management	x	x	x	per project
Personnel training	x	x		per project
Third party consulting	x	x		per project

Table 1: Overview of cost elements for DPP implementation for SMEs and potential DPP-as-a -Service providers

6. Overview of the benefits of DPP implementation for SMEs

SMEs surely need to overcome many challenges as mentioned in previous chapters. However, proper implementation of DPPs should bring many business benefits to responsible economic operators, especially to SMEs. A number of key benefits are listed below.

- DPP implementation encourages and facilitates SMEs to reexamine their data, data collection practices, relationships with suppliers, supplier and supply selection, and even business practices (e.g. digitalization) and models to prepare data and systems needed for DPP implementation. They may recognize inefficiencies or find new suppliers/supplies that are more beneficial to their businesses.

- Providing end consumers with sustainable product data helps SMEs to differentiate from competitors. At the same time, this may help foster brand loyalty.
- Connecting with other businesses in their networks through the process of up-skilling on DPP and DPP implementation may help to enable collective purchasing of solutions (e.g. tags, DPP service solutions) by SMEs.
- Potential new business models are now imaginable for SMEs, for example repairs and upgrades, collecting used products, refurbishing, remanufacturing, second-hand market platforms.
- New data enabled business opportunities will emerge thanks to the combination of available relevant data, data analytics and AI-driven product design.
- It is foreseeable that the use of RFID will be necessary in some domains to identify the product at the end of the life cycle (e.g., fashion and shoe). Future cell phones would be able to read not only NFC chips, but also UHF Gen 2 chips. This would lead automatically to broad application of UHF Gen 2 chips, allowing for “theft protection ready” products. In such a case, the cost of RFID tagging would be offset by the financial damage currently associated with stolen goods.
- Today in the textile, fashion and sport sectors, it is not yet known how much more DPP related product data will be needed. It is clear, however, that the volume of product related attributes/data will grow significantly with the arrival of DPPs. In this context, SMEs will need to organize themselves differently, to automate the data generation process. This will increase the efficiency of the related processes by between 15% and 32%³. Considering the expected scaling effects of DPP-as-a-Service offerings, IT services, RFID devices and infrastructure, the savings in overhead costs (including labor costs) will bring significant financial gains that will balance DPP related costs.

7. Recommendations

The following recommendations are offered to both EU and national regulatory bodies:

- **Alignment between EU member states:**
Ensuring that all DPP implementation support mechanisms proposed by member states will provide aligned information. This could be done through a European DPP Implementation Support Centre which could provide consistent support and information to all member state initiatives. Alignment and neutral sources of information are of particular importance in the presence of an extremely dynamic and competitive business environment from hundreds/thousands of potential DPP-as-a-Service offerings.
- **Providing test cases and pilots:**
Implementing DPP pilots targeting SMEs and showcasing success stories can demonstrate how the DPP benefits companies, especially aiding SMEs that might lack experience or knowledge in implementation. Pilots showcasing the economic and sustainability benefits of the DPP should be put forward, even if these pilots go beyond the data sharing requirements of regulation.

³ According to survey at the end of the Pilot Project Data Exchange by GCS Consulting in Munich, Germany in 2020

- **Hands-on training and widespread awareness:**
Conducting hands-on training sessions, educating a large group of SMEs about upcoming DPP policies, successful implementation models, and potential benefits can create widespread awareness. An open-source, all-inclusive basic DPP implementation software package for SMEs should be developed.
- **Helpdesk for SMEs:**
Installing helpdesks at national governmental levels or within national industry or SME associations is essential for the success of DPP roll out. These can serve as information points to help inform SMEs about different aspects of the DPP, such as legal requirements and technical processes, and to respond to queries.
- **Facilitating data collaboration with suppliers:**
Assisting companies in collaborating with their suppliers to obtain the necessary data or encouraging suppliers to share required data. The EU can emphasize the importance of data sharing, educating both businesses and their suppliers to build mutual value.
- **Facilitating a clear DPP-as-a-Service offering:**
Helping DPP-as-a-Service providers in providing a clearly DPP-aligned service offering, something which is lacking today. If certification is required, then it should remain very low cost to avoid limiting market entry. Moreover, the EU can complement potential DPP-as-a-Service Providers in spreading positive messages about DPP implementation benefits and opportunities.
- **Establishing common understanding and standards:**
Laying the groundwork for a common understanding of purpose, consumer privacy concerns, data requirements, and data standards is crucial for consistency and interoperability. The focus should be less on technologies and more on establishing operational and interoperable DPP ecosystems. Furthermore, it is in the interest of the economic operator to adopt DPP solutions, using existing standards in the best way.
- **Stimulate adoption of standards by software vendors:**
Solution providers of enterprise IT systems e.g., PLM, ERP, PIM need to be stimulated and supported to integrate DPP solutions into their systems as soon as possible.
- **Legal Clarity and Funding Support:**
Providing legal clarity on Environmental, Social, and Governance Reporting (e.g., Corporate Sustainability Reporting Directive), together with other relevant legislation and their links to the DPP could contribute to streamlining DPP implementation. Moreover, advocating for the funding of consulting services and utilizing portions of Extended Producer Responsibility (EPR) funds to support DPP implementation can aid businesses, particularly SMEs. Stepwise support from small SMEs to larger SMEs, could be managed by national chambers of commerce.

8. Appendix

8.1. Interview guideline for DPP solution providers

1. Background information

- Company Name (will be anonymized):
- Business description:
- Location (headquarter):
- Operate internationally:
- Number of employees:
- Industry:

2. Solution / Service provided

- Type of solution (e.g., track and trace, material reporting, digital product passport, etc.)
- Product categories / sector:
- Briefly describe your solution
- Are you familiar with DPP and how it is defined by regulations?
- Do you consider your solution a DPP service solution or it is related or can be expanded to become DPP as a service solution?
- What benefits do you think DPP brings to businesses (such as your customers)?
- What are the driving forces behind the deployment of DPPs?
- What is your pricing structure and price range? (Note to interviewers: it is likely difficult to get a direct answer on pricing, so it is helpful to find the price range, and pricing is determined)
- What is the average length of time needed to implement your solution? (To issue DPP?)
- Do you work with SMEs? Are there any barriers of DPPs specific to SMEs?
- What are the biggest challenges DPP solution providers / DPP-as-a-service providers as a sector are facing? (Note: it would be helpful to discuss interoperability, scalability, standards and standardization, system and data integration, security and privacy, etc.)
- What are the solutions to these challenges? What can government policies, authorities, regulators do to foster your sector?
- What are the main business opportunities of DPPs?
- Do you see any best practices across industries to implement DPPs?
- DPP Challenges and Services / Support Benefits
- What are the biggest challenges in providing solutions to your customers (e.g., customization needs, solution requirements)?
- What are the biggest challenges do you observe your customers experiencing (e.g., data, resources, training, expertise)?
- Do SMEs tend to experience the same challenges, or do they face different challenges?
- What do you think your customers should prepare, particularly SMEs, to successfully implement your solutions or effectively leverage your solution?
- What services do you consider most important or effective in helping your customers successfully implement your solutions (or DPP solution)?
- What do you think government policies could do to support businesses, especially SMEs, to implement DPP?

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8.2. Interview guideline for SMEs

1. Background information

- Company Name (will be anonymized):
- Business description:
- Location (headquarter):
- Operate internationally:
- Number of employees:
- Industry:
- Position in your supply chain (upstream, downstream):

2. Digital Product Passport

- Are you aware of the DPP concept?
- If yes, what is your understanding of a DPP?

(If the answer is no, the interviewer should describe the concept to the interviewee)

Once the interviewee's basic understanding of a DPP for his/her industry/ business is established, the following questions could be asked:

- What reporting/compliance / certification requirements is your business subject to? (This helps to determine what data they may have already)
- What are your company's current data requirements related to reporting/compliance/certification (depends on the industry, should treat this as a discussion to determine how difficult it would be to fulfil DPP data requirements? The list below is a suggestion):
 - Product identification
 - Company identification
 - Functional and technical specifications
 - Material and composition information
 - Product design and service
 - Usage history
 - Repair, reuse history
 - End of life
 - Sustainability Indicators
 - Label

If they are unfamiliar with or do not have these data attributes, guide the conversation toward their estimated difficulty in getting this data, and if they think their supply chain partners can provide the data with high reliability and quality.

- What is your company's experience with systems/processes related to a DPP? (it is likely that SMEs will not develop their own DPP solution, guide the conversation toward their experience in SaaS usage, digital transformation, process improvement, and IT capabilities)

Particular questions to be explored:

- In your industry/ business, do you already have product IDs / serial numbers? Are they at batch / product level?

- To what extent are you already using tags/data carriers? What feasible options do you see for your products? (QR code, RFID, ...)
- How familiar are you with evaluating & selecting SaaS providers?
- What has been your latest digital transformation project, if any?
- Do you have available budget and assigned personnel for digital transformation in general or tracking & tracing/DPP solutions in particular?

3. Benefits

- What benefits could a DPP bring to your business? How could a DPP on data/system level generate such benefits?

If possible, ask for an estimation in terms of likelihood of improvements, and benefit estimation in % or €:

- Saving reporting / compliance / certification time
- Product track and trace
- Product reparability and recyclability
- Sustainability proof and increase trustworthiness
- Meeting public pressure to be more sustainable
- Increase productivity / saving time (where in the process)
- Supplier relationship collaboration improvement (supply chain integration)
- Industry standardizations
- New business models: product as a service, repair, recycle
- OR it is possible that they do not see any benefits at all. Stay objective in the discussion

4. Barriers and Enablers/Drivers

- Barriers (be specific and ask them to list as many as possible):
 - Given the DPP requirements above, which barriers do you see?Possible answers:
 - Unclear interpretation of DPP regulations / guidelines
 - Implementation timeline
 - Financial resources
 - Technical challenges (IT capabilities, expertise, training)
 - Corporate support for DPP (as required or to leverage DPP for more purposes)
 - Cost Estimation
- Enablers/Drivers (be specific, and ask them to prioritize):
 - What are the driving forces behind the deployment of DPPs?
 - What could the EC/your national government do to make the implementation of the DPP easier for your company?
 - Possible answers could go in the following directions: regulation clarification (knowledge), training, IT capabilities, financial support, supply chain/industry association collaboration

5. Opportunities and best practices

- What are the main business opportunities of DPPs?
- Do you see any best practices across industries to implement DPPs?