

BUYING AS A SERVICE

**A How-To Guide for the Procurement of
Product-as-a-Service**

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A Solution Space by
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Shift & Build

HOW TO USE THIS GUIDE

This document provides comprehensive guidance and context on the BaaS model. Please use the table below to guide you to the sections that are most relevant to your needed support.

Section Title	Description
<u>Background</u>	Provides an overview of the circular economy and the role that circular procurement can play in advancing the necessary transition.
<u>What is BaaS?</u>	Outlines the key differences between traditional purchasing models and Buying-as-a-Service.
<u>Why Implement BaaS?</u>	Gives examples of potential benefits that organizations can expect from BaaS adoption across six categories.
<u>How to Implement BaaS?</u>	Offers actionable steps using a proven change management model for implementing a successful BaaS model transition for potential customers.
<u>Overcoming Challenges to Unlock the Benefits of BaaS</u>	Highlights common challenges, offers practical suggestions, and addresses key questions to help guide a more strategic and tailored adoption process.
<u>Appendix A: Sample Purchasing Agreement</u>	Illustrates selected elements of a bid document and an agreement that are important to understand in the context of BaaS.
<u>Appendix B: PaaS Providers</u>	Lists some notable PaaS providers and the types of services they offer in Canada and globally.
<u>Appendix C: Potential tools for implementing circular procurement</u>	Presents useful and practical solutions to support circular procurement.

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INTRODUCTION

In a sustainable world, collective action is needed to transition to living within planetary boundaries. We also must recognize our interdependence across and within ecosystems and species.

As material extraction and use are responsible for over 90% of biodiversity loss, there is a critical need to prioritize sustainable practices in the food system, built environment, and manufactured goods. This can help us reduce harm to ecosystems and protect the diversity of life (The Circularity Gap Report 2024). Within the organizational context, there are critical opportunities that can enable circularity including Buying-as-a-Service (BaaS) which naturally creates incentives for circularity, extended product life, material re-use, refurbishing and recycling. While BaaS solutions exist across sectors, adoption remains limited due to unfamiliarity with the model, limited understanding of the benefits, and the unique operational and budgetary considerations it requires. Success depends on strong leadership, internal alignment, and a clear understanding of the long-term value of procuring services.

To support the transition, this Guidance Document offers practical insights for Canadian companies looking to shift from traditional purchasing models to BaaS, with a focus on the Business-to-Business (B2B) market. It highlights key benefits, addresses common barriers, and provides actionable steps to support greater adoption of BaaS practices and to advance more circular procurement in Canada, and accelerate the transition to a circular economy.

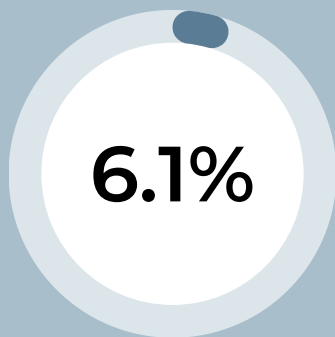


BACKGROUND

An Introduction to the Circular Economy

The Ellen MacArthur Foundation defines the circular economy as “an economic and industrial system that is restorative and regenerative by design, and which aims to keep products, components, and materials at their highest utility and value at all times” (Ellen MacArthur Foundation). It is a “model of production and consumption that involves sharing, leasing, reusing, repairing, refurbishing and recycling existing materials and products for as long as possible” (European Parliament, 2023). Unlike the traditional linear approach—where products are made, used, and discarded—the circular economy aims to keep resources in circulation for as long as possible, creating a closed-loop system that fosters innovation, reduces dependency on finite resources, and promotes environmental resilience (Hoover CS, 2025).

A Necessary Shift



Canada's estimated circularity rate in 2020

Figure 1
Turning Point: The Expert Panel on the Circular Economy in Canada, Council of Canadian Academies, 2021.

Considering the current state of the climate, there is a required sense of urgency to make this shift to a circular economy. By reducing material consumption, the circular economy can address the fact that 70% of global greenhouse gas (GHG) emissions come from material handling and use. Adopting circular solutions like recycling, repair laws, and efficient resource use can significantly cut emissions (Circular Economy Foundation, 2024). According to the Council of Canadian Academies' 2021 report *Turning Point*, Canada's circularity rate was estimated at 6.1% in 2020. This figure indicates that only 6.1% of the materials used in the Canadian economy were derived from recycled sources, highlighting a significant opportunity for resource efficiency, waste reduction and value creation. It underscores the need for a shift from traditional linear economic models to more sustainable, circular approaches (Council of Canadian Academies, 2021).

Adoption of the Circular Economy and Circular Procurement in Canada

While the adoption of the Circular Economy is still in its early stages in Canada, it is gaining momentum through government initiatives, industry commitments, and community-led practices. Current efforts focus on improving waste management, supporting recycling infrastructure, and encouraging businesses to design products with reuse and recyclability in mind. Embracing the Circular Economy offers Canadian industries numerous advantages, including cost savings, reduced landfill waste, improved resource efficiency, and a stronger competitive edge in a global marketplace increasingly driven by sustainability demands.

Adopting circular procurement practices is one way organizations can take part in this necessary transition. Within circular procurement practices, transitioning to BaaS is one intervention that has the potential to deliver significant benefits to organizations and the environment. A widespread shift to BaaS will require shifts to processes, roles, and systems and as such will need a thoughtful approach to change management. Such an approach will leverage a foundation of strategic, structured and proven methodologies in combination with a commitment to urgent action, agility and accelerated movement.

Circular Economy Leadership Canada sees the circular economy as "a prosperous way forward," and urges a shift from "waste management" to "resource recovery". Collaborative efforts to move from linear to circular supply chains where service-based models are implemented, is a step closer to making this prosperous future become our reality.



WHAT IS BAAS?

How is it Different From Traditional Purchasing Models?

Shifting Focus from Ownership to Outcomes

Procurement plays a critical role in advancing the circular economy by serving as a lever to drive the demand for more circular economy business models and practices.

Circular procurement, refers to procurement practices that align with circular economy principles. This involves sourcing products designed for durability, repairability, and recyclability, ensuring they can be disassembled at the end of their life cycle into components or raw materials for reuse within the production chain (Jones, Sohn, & Bendsen, 2018). In addition, circular procurement values and incentivizes the innovation and creativity of suppliers, motivating them to enhance the positive impact of their solutions (Van Oppen, Croon, & Bijl de Vroe, 2018).

An emerging yet underutilized approach within circular procurement is **Buying-as-a-Service (BaaS)**. Unlike traditional procurement which emphasizes ownership of products or equipment, BaaS focuses on accessing the service of a product. This can be structured in a number of ways including but not limited to subscriptions, pay-per-use, leasing or renting. BaaS typically falls into two main categories:

- Product-as-a-Service (PaaS) and
- Sharing Platforms.



While BaaS generally includes both Product-as-a-Service (PaaS) and Sharing Platforms, this Guidance Document focuses exclusively on the PaaS model. It provides practical guidance for Canadian businesses aiming to transition from traditional purchasing approaches to service-based models, with a particular emphasis on the Business-to-Business (B2B) sector.

Product-as-a-Service (PaaS) represents a shift from traditional product ownership-based consumption to an access-oriented model, where producers retain ownership and lifecycle responsibility for their products and assets. (Nordic Council of Ministers, 2024)

This approach naturally incentivizes companies to adopt circular economy strategies, prioritizing long-lasting, durable, and modular designs that maximize the use phase of products (Peruzzini et al., 2014). Instead of selling physical goods, businesses in a PaaS model offer utility or services, aligning with the idea that "people do not need cars, but mobility; they do not need washing machines, but clean clothes" (Systemiq, 2021).

In essence, companies shift from working towards a goal of selling more units which creates a vested interest in obsolescence to a goal of growing and deepening customer relationships through value provision which creates a vested interest in product quality and longevity. This process of shifting the focus from ownership to functionality, encourages sustainable consumption patterns while fostering innovation in product design and service delivery.

PaaS (or Product Service Systems) is considered the most advanced form of circular procurement. While rental and leasing are primarily financial arrangements, PaaS emphasizes long-term value creation and as such it considers factors such as product lifespan, material usage, supplier relationships, life cycle impacts and value-added benefits. Developing business cases that reflect both financial and non-financial benefits, such as environmental or social gains, is central to this model and to realizing the financial and environmental benefits available. Total cost of ownership frameworks help illuminate hidden costs that are unclear when looking at short term costs and long-term relationships provide the foundation for long-term sustainability outcomes (Van Oppen, Croon, & Bijl de Vroe, 2018).



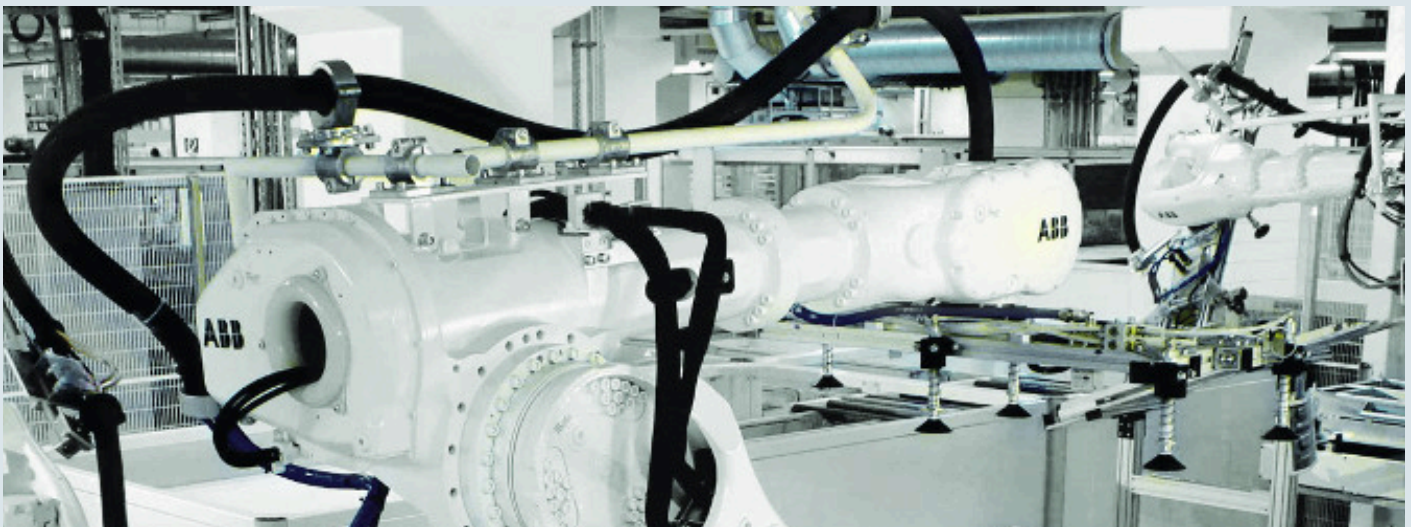
Other Sustainability-Related Procurement Types

PaaS can also be used to advance several other procurement concepts that are closely related to sustainability. While these differ from circular procurement, they share overlapping goals of creating a market force for the transformation to a sustainable, socially just future. These include the following:

Sustainable procurement is the practice of obtaining the best value for money by purchasing the most sustainable goods and services from the most sustainable suppliers in support of the organization's purpose and strategic goals. It applies to all types of procurement processes, whether sole sourcing, multiple quotes, or competitive tenders like RFPs, and encourages public bodies to consider long-term impacts rather than just short-term needs (Van Oppen, Croon, & Bijl de Vroe, 2018).

Social procurement has a focus on social benefits. Given this, organizations would be looking to obtain the best value for money by purchasing goods and services with the greatest provision of social benefits from the most socially beneficial suppliers. In essence, purchasers are looking to procure products and services from organizations that make a direct and positive social contribution. It promotes economic inclusivity by creating opportunities for equity-seeking groups and from suppliers that generate social value, such as nonprofits, social enterprises, and diverse-owned businesses, and or requiring contractors to deliver community benefits as part of the purchase.

Environmental procurement has a focus on environmental benefits. Given this, organizations would be looking to obtain the best value for money by purchasing goods and services with the lowest environmental impact from organizations with the lowest environmental impact. In essence, purchasers are looking to procure products and services that have a lower environmental footprint and are from suppliers that are working to reduce greenhouse gas (GHG) emissions, pursuing net zero, circularity, and biodiversity protection.



Understanding Key Differences

Traditional Product Ownership vs. BaaS Models

Understanding the fundamental differences between traditional product ownership and the BaaS model is essential when considering a shift in procurement strategy. The following table outlines key distinctions across financial, operational, organizational, environmental, social, and legal dimensions. Traditional ownership models are typically characterized by upfront capital investment, internal lifecycle management, and siloed decision-making, often with limited integration of sustainability, or long-term supplier relationships. In contrast, BaaS shifts expenditures to an operational model, incorporating services such as maintenance, upgrades, and end-of-life management into predictable, ongoing costs. The BaaS model can enable greater cross-departmental collaboration, embed circular economy principles through provider-led sustainability reporting and take back systems, and foster long-term partnerships supported by more comprehensive contractual arrangements. This shift can also redistribute legal and operational risk, requiring earlier involvement of finance and legal teams to manage shared accountability and performance-based outcomes.

The following table shows the key differences between traditional product ownership and Buying-as-a-Service models.

Financial

Table 1



Product / Asset Ownership	BaaS
• Purchaser makes upfront capital investment (CAPEX) to purchase product / service • Purchaser depreciates asset over time • Purchaser is required to manage, maintain and upgrade* equipment • Purchaser is required to pay for disposal costs* • *These costs are often not taken into consideration when purchasing decisions are being made.	• Purchaser pays for ongoing service (OPEX) • Service cost likely includes maintenance, upgrades, and end-of-life • Purchaser costs are predictable as they do not incur any unexpected repair and purchasing costs due to breakage

Operational



Product / Asset Ownership	BaaS
• Purchaser manages equipment use, maintenance, logistics, and disposal • Purchasing processes tend to focus on technical specifications of product and not on delivery of solution. For example, in a vehicle purchase the RFP may focus on the engine specifications but not the hours of mobility price	• Supplier manages full equipment lifecycle including installation, repairs and end-of-life • To grow BaaS, procurement can address broad functional needs as opposed to limiting technical specifications

Organizational



Product / Asset Ownership	BaaS
• Siloed procurement processes • Procurement teams often execute purchases based on specifications provided by the line of business, with limited strategic collaboration • Decisions are typically transactional with little focus on long-term outcomes	• Greater cross-functional coordination can lead to more streamlined implementation of BaaS (e.g., finance, IT, sustainability) • Benefitting from BaaS at scale will be enabled by early alignment between procurement and other departments to define functional needs rather than technical specifications

Environmental



Product / Asset Ownership	BaaS
• Less likely to have circular outcomes • While sustainability may be considered through supplier selection, control and influence is limited • Manufacturers are not incentivized to prioritize durability, reparability, or end-of-life outcomes, leading to planned obsolescence	• Providers often track and share environmental impacts or circularity reports • Manufacturers are incentivized to design longer lasting, more repairable, and recyclable products as their revenue depends on sustained product performance over time

Social/Cultural



Product / Asset Ownership	BaaS
• Focus is on the moment of transaction • Limited engagement with external service providers	• Internal collaboration between client, finance, sustainability, and facilities teams can help break down organizational silos and create significant economic and sustainability value • Long-term service relationships provide a mechanism to collectively explore and grow value creation and innovation • Long-term service relationships encourages a culture of shared responsibility and collective interdependence which enables greater success



Legal



Product / Asset Ownership

- Contracts tend to be simple contracts with a focus on standard purchase terms
- Legal tends to be engaged later in the process
- Liability tends to remain with the purchaser excluding any warranties that may exist

BaaS

- Contracts / Service-level Agreements (SLAs) tend to be more complex as they need to consider a breadth of value creation elements like support, maintenance, liability, and end of life management that may not be covered in traditional RFPs
- There is significant value in engaging legal / finance and other teams early on
- There is greater sharing of liability



ILLUSTRATIVE EXAMPLES

of BaaS Across Industries

The BaaS model has seen widespread adoption across multiple industries. Below are some illustrative examples, there are more examples in Appendix 1.

Buildings & Real Estate

Within the buildings and real estate sector are innovative offerings for not only the use of spaces themselves, but also the varying amenities within building spaces.

Examples of Offerings

- Lighting-as-a-Service
- Vertical Transportation-as-a-Service (Elevators)
- Heating, Ventilation, and Air Conditioning (HVAC) as-a-service
- Facades-as-a-Service

Main Drivers of the Transition

- The built environment is a major contributor to global resource extraction and GHG emissions, making circular service-based models essential for sustainability.
- Traditional building practices are highly wasteful, with construction accounting for over 35% of total waste in the EU, highlighting the need for more efficient, reuse-oriented solutions ((United Nations Environment Programme, 2024).
- Retrofitting buildings for energy efficiency requires significant upfront capital.
- Office spaces are increasingly under-utilized, with occupancy rates as low as 37% in North America. (Xy Sense, 2024).



Industry Example Interface

Interface offer Carpet-as-a-Service, providing comprehensive floor-covering services, including installation, maintenance, and recycling. Interface retains ownership of the carpet materials, ensuring proper recycling and reducing material waste. This approach not only minimizes environmental impact but also extends the product's life cycle (Harvard Business School, 2003).

Fleet Management & Transportation

Companies have embraced fleet management and transportation PaaS models that enhance sustainability through optimized vehicle maintenance and usage.

Examples of Offerings

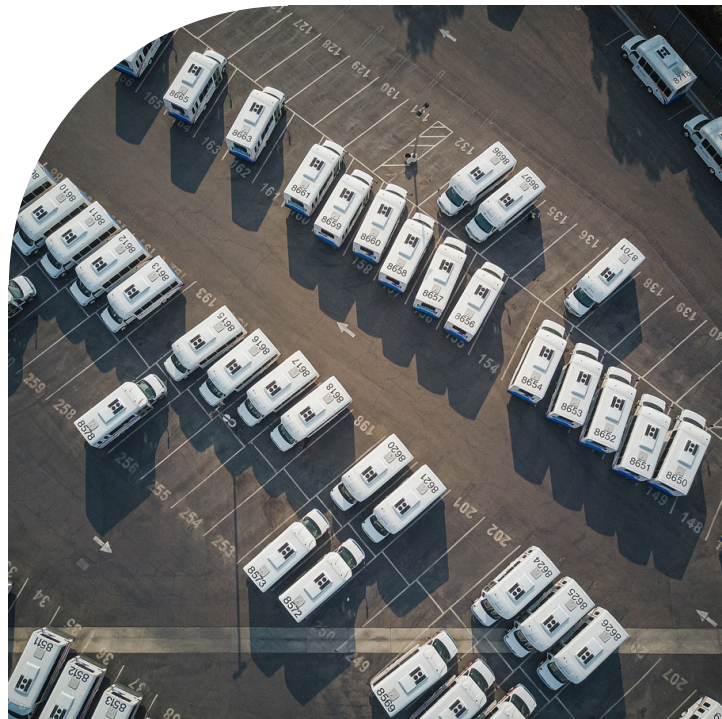
- **Truck-as-a-Service:** Businesses can access essential vehicles, such as delivery vans, service trucks, and specialized carriers, which are critical for industries like logistics, healthcare, and construction, enabling efficient transport of goods.

Main Drivers of the Transition

- Road transport is responsible for 75% of all transport-related GHG emissions, making it a key target for decarbonization efforts (Ellen MacArthur Foundation, 2025).
- Fleet operators face increasing pressure to comply with transportation and technical regulations, including emissions standards, engine requirements, and safety protocols, which add complexity to managing owned fleets.
- Rising fuel prices, maintenance costs, and capital expenditures are straining fleet budgets, driving interest in cost-efficient, service-based alternatives.
- A persistent shortage of qualified drivers makes it harder to manage private fleets effectively, encouraging companies to explore flexible fleet access through BaaS models.
- The transition to zero-emission trucks is accelerating due to climate regulations and cost pressures, requiring new business models that support scalable adoption (McKinsey & Company, 2024).

Industry Example WattEV

WattEV, a new California based start-up, which offers a Truck-as-a-Service model, provides access to electric trucks at a per-mile or per-route rate, backed by a nationwide charging network with a game-changing charging design. This model eliminates the need for upfront investment and ownership, allowing fleet operators to scale electric truck usage as a flexible, pay-as-you-go service (WattEV, n.d.).



Technology & IT Equipment

The IT sector is a prominent provider of PaaS, as businesses can now access flexible device-as-a-service management, workstation and laptop subscriptions, networking and collaboration tools, and managed print solutions. All of these can contribute to enhanced security, efficiency, and document workflow management, reinforcing the growing trend of service-based IT solutions.

Examples of Offerings

- Device-as-a-Service
- Printing-as-a-Service

These subscription-based models allow businesses to access essential technology and IT infrastructure without large upfront investments. Providers manage hardware provisioning, software updates, security, maintenance, and lifecycle services, reducing storage needs and IT workload. These offerings provide cost predictability, sustainability benefit reports, and the ability to flex throughout the contract term, giving greater flexibility than outright purchase.

Main Drivers of the Transition

- The rapid pace of technological advancement causes hardware to become obsolete quickly, making traditional ownership models inefficient.
- E-waste is a mounting global issue, with over 50 million metric tonnes generated annually and only 20% properly recycled (Circuly, 2022).
- Ongoing supply chain disruptions and the scarcity of critical raw materials expose businesses to procurement risks and delays.

Industry Example HP

HP's Device-as-a-Service solution called "HP Managed Device Services" integrates analytics, lifecycle management, and IT asset optimization, streamlining business operations. HP's Printing-as-a-Service, offered through its Managed Print Services, enables organizations to outsource print infrastructure, ensuring cost efficiency, security, and digitized document workflows (HP, n.d.).



Office Furniture & Equipment

The current "fast furniture" model, driven by high turnover and waste, underscores the urgency for circular economy solutions. However, there are many examples of how office furniture can be bought as a service, to adapt to your evolving business's needs as well as addressing environmental concerns.

Examples of Offerings

- Furniture-as-a-Service: Provides cost efficiency, flexibility, and sustainable furniture management through reuse, refurbishment, and lifecycle extension.

Main Drivers of the Transition

- The furniture industry relies heavily on finite natural resources, particularly wood, making it vulnerable to environmental pressures and material scarcity.
- The rapid growth of the industry raises concerns over potential conflicts between wood demand and forest conservation efforts crucial for climate protection.
- Volatile supply chains and rising global demand pose significant risks to the long-term availability of raw materials.
- A significant portion of discarded office furniture ends up in landfills or incinerators, as painted, coated, or glued components are difficult to disassemble and recycle without degrading material quality.
- The "fast furniture" model—driven by frequent redesigns, damage, and business turnover—leads to short product lifespans and substantial waste, emphasizing the need for durable, modular, and circular alternatives.(Ellen MacArthur Foundation, 2021).

Industry Example

CORT

CORT is a US based company that offers Furniture-as-a-Service. Through its model, CORT offers businesses flexible, cost-effective solutions that adapt to changing workspace needs. Clients can lease furniture for short or long terms, benefiting from delivery, setup, maintenance, and easy upgrades. A key feature that makes CORT different from competitors is its online rental platform, which offers flexibility and quick scalability for its customers (CORT, n.d.).



Industrial Equipment

Subscription or rental services for large construction equipment and machinery has led the shift of how business is done within the Industrial Equipment sector. These models allow for companies to reduce capital investments, improve operational flexibility, and enhance performance through service-oriented solutions.

Examples of Offerings

Equipment-as-a-Service (also referred to as Servitization in Manufacturing) is a business model that emphasizes access to equipment and services rather than ownership, and includes models such as:

- Industrial Equipment-as-a-Service
- Tools-as-a-Service
- Machinery-as-a-Service

Main Drivers of the Transition

- The manufacturing sector is under growing pressure due to labor shortages, rising material costs, volatile supply chains, and increasing demands for sustainability and resource efficiency (Fontana et al., 2021).
- Digitalization is becoming essential in manufacturing, with EaaS models leveraging IoT, predictive analytics, and remote monitoring to enhance performance and reduce downtime.
- High upfront capital investment for industrial machinery limits innovation and agility, whereas BaaS shifts these costs to manageable operational expenses, improving cash flow.
- Underutilization of owned equipment and rapid technological advancements create financial inefficiencies and obsolescence risks, which BaaS addresses through expert-managed, pay-per-use models and continuous access to the latest technologies.



Industry Example Kaeser Kompressoren

Kaeser Kompressoren offers compressed air services, where customers only have to pay for the volume of compressed air consumed. With their Sigma Air Utility model, the customer does not face upfront capital investment, and maintenance/servicing work is included with maximum efficiency ensured. Kaeser also emphasizes their ability to effortlessly adapt with a business' many evolving needs. of decarbonization efforts. Additionally, it provides real-time tracking and reporting of sustainability metrics of the buildings (Kaeser Kompressoren., n.d.).

WHY IMPLEMENT BAAS?

Potential Benefits to BaaS

In addition to helping to mitigate the urgent climate crisis, adopting Buying-as-a-Service (BaaS) practices offers numerous advantages for organizations, including the role organizations can play in driving change for the planet. A change in approach from product purchasing to BaaS provides benefits that fall into six main categories: Financial, Operational, Organizational, Environmental, Social / Cultural, and Legal. The benefits position BaaS as a favourable purchasing strategy for optimizing resources enhancing business competitiveness, and is a way for businesses to play a role in driving sustainable change.

The following are examples of potential benefits that businesses can expect from BaaS adoption. Benefits will differ on a case to case basis, which emphasizes the need for proper assessment and evaluation to determine if BaaS is a suitable fit. To help with this assessment, please refer to the Overcoming Challenges to Implementing BaaS section of this report.



Financial Benefits



Studies highlight that BaaS can reduce upfront costs, offer greater predictability for expenditures, and deliver cost savings over ownership. It can provide financial incentives and enhance cash flow management, helping organizations adapt budgets with greater certainty and efficiency.

By avoiding asset ownership and embracing service-based models, organizations benefit from:

Avoiding large upfront capital costs which allows resources to be redirected to other priorities.

For example, Georgia Regents Medical Center entered into a comprehensive agreement with **Philips Healthcare**, which allowed them to access the required medical technologies and services over 15 years without owning the equipment. Philips provides imaging systems, patient monitoring, lighting, clinical informatics and ongoing services, all under a predictable monthly operational fee. As a result, they are expected to save \$10 million over that period, showcasing how buying as a service can lead to substantial financial benefits while still meeting the hospital's needs (Healthcare Finance News, 2013).



Reduced financial risk exposure through the ability to access scalable solutions without the burdens of ownership.

Operational flexibility allows businesses to adapt their equipment needs during expansions, relocations, or downsizing without the financial burden of purchasing new assets. Instead of being locked into long-term capital investments, companies can adjust their office furniture, IT equipment, or vehicle fleets in response to real-time demand. As an example, **WeWork** allows businesses to scale office space up or down monthly, without long leases or ownership commitments, supporting operational agility in uncertain markets (WeWork, n.d.).



Financial Benefits

(continued)



Converting capital expenditures into predictable operational expenditures might be what supports improved financial planning and liquidity.

As an example, **Johnson Controls** OpenBlue Net-Zero Buildings-as-a-Service model covers the full cost of energy infrastructure, including solar and battery systems, turning major investments into monthly service fees. By converting capital expenditures into fixed operational costs, this model provides financial flexibility and predictability. For instance, at St. Edward's University in Austin, TX, this model enabled a \$6.3million modernization with only \$1.2million upfront, financed through energy savings over 15 years, achieving substantial operational cost reductions and carbon emission cuts (Johnson Controls, 2022).



Accessing up-to-date technologies and equipment might be what avoids requiring significant initial investment.

HP's Device-as-a-Service provides businesses with the latest laptops, software, and cybersecurity tools without purchasing new equipment. This ensures constant access to cutting-edge tech, which is critical in sectors where outdated systems quickly become a liability (HP, n.d.).



Reduced total cost of ownership may result from bundled services that include maintenance, upgrades, and lifecycle management.

Rolls-Royce's "Power-by-the-Hour" model offers airlines a comprehensive engine-as-a-service contract that includes ongoing maintenance, repairs, upgrades, and performance monitoring. Customers pay based on engine uptime, while Rolls-Royce retains ownership and manages the full lifecycle of the engine, reducing capital investment, minimizing downtime, and ensuring predictable long-term costs (Rolls-Royce, n.d.).





Operational Benefits

BaaS can bring improved service performance, increased uptime, and continuous access to modern technology and equipment, boosting productivity and reducing downtime. BaaS also streamlines maintenance, simplifies end-of-life management, and enables tailored solutions that better fit organizational needs.

Key operational advantages include:

Ongoing maintenance and regular upgrades that can extend the useful life and reliability of equipment.

Hilti's Tools-as-a-Service model includes regular maintenance and upgrades for construction tools, ensuring optimal performance and reducing downtime. This proactive servicing extends the useful life of equipment and boosts reliability on job sites, without requiring users to manage servicing schedules themselves (Hilti, n.d.).



Reduced risks related to supply chain disruptions and technological obsolescence.

WattEV, an U.S.-based startup, offers electric trucks on a per-mile or per-route basis, bundled with infrastructure and maintenance. By managing the entire ecosystem, including vehicle availability and charging network, WattEV shields fleet operators from supply chain volatility and delays in EV truck production or component sourcing (WattEV, n.d.).

Another relevant example is the global semiconductor chip shortage, which highlighted the vulnerabilities of traditional procurement models, causing production delays, soaring costs, and equipment shortages. Device-as-a-Service (DaaS) models mitigate these risks by ensuring continuous access to up-to-date IT infrastructure, as service providers take responsibility for sourcing, upgrading, and lifecycle management (Circuly, 2022).

Lenovo, for instance, was able to continue offering its TruScale DaaS solution during the chip shortage, leveraging its robust supply chain and in-house manufacturing capabilities to ensure reliable device availability (CTGM, 2021).

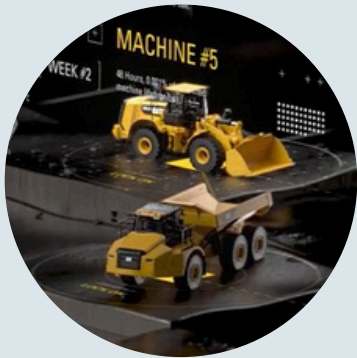


Operational Benefits

(continued)

The potential for greater operational flexibility enabling organizations to scale operations up or down based on demand.

Knotel provides custom office spaces with flexible lease terms and on-demand scalability, allowing businesses to easily adjust their workspace according to staff size or project timelines. This flexibility is particularly valuable during periods of rapid growth or downsizing (Knotel, n.d.).



Productivity gains, particularly in labour-intensive industries, that can translate into significant cost savings.

Caterpillar's CatLink platform enables real-time monitoring of heavy machinery on construction sites, allowing operators to optimize usage, detect issues early, and prevent downtime. This improves productivity and leads to significant cost savings, especially where labor and machine idle time are expensive (Caterpillar, 2010).

Reduced operational burden from the inclusion of services such as delivery, setup, maintenance, and replacement.

Live Light, a Belgian Furniture-as-a-Service provider, offers a subscription model for office furniture that includes delivery, setup, regular refreshes, and eventual recycling. This all-in-one service reduces the logistical burden on customers and supports seamless office transitions or redesigns (Live Light, n.d.).





Organizational Benefits

BaaS can also foster interdepartmental collaboration and stakeholder engagement by centralizing responsibilities that are often managed separately across departments. By bundling procurement, maintenance, upgrades, and asset tracking into a single, managed service, BaaS reduces duplication of effort and operational silos. This allows organizations to focus on their core activities, develop internal expertise, and benefit from predictable, transparent processes, alleviating uncertainty around long-term planning.

BaaS can provide organizational benefits in the following ways:

Promoting internal collaboration through the alignment of teams around shared goals and measurable outcomes.

ABB, a leading provider of industrial automation, offers services ranging from remote monitoring to predictive maintenance. Supported by data analytics and artificial intelligence, these services improve equipment performance, enabling customers to optimize their operations with minimal downtime. Clients using ABB's Industrial Automation-as-a-Service must coordinate across engineering, operations, and IT departments to integrate predictive maintenance, remote diagnostics, and efficiency metrics. This fosters shared accountability for system performance, aligning teams around measurable productivity and uptime goals rather than just technical ownership (ABB, n.d.).



Strengthened interdepartmental cooperation by requiring alignment across procurement, finance, IT, and operations.

For example, assessing an asset purchase versus a Product-as-a-Service model requires a deep dive into existing and projected costs by multiple departments, including (but not limited to) purchasing, finance, training, and facilities.



Organizational Benefits

(continued)

Reduced uncertainty through clear service structures and predictable costs.

Volvo Trucks' On Demand electric truck rental model offers fixed short-term contracts that bundle maintenance, insurance, and charging. Fleet managers and finance teams benefit from clear cost structures and no long-term commitments, improving budgeting and reducing exposure to unexpected capital outlays or maintenance downtime (Fleet Equipment Magazine, 2024).



Reduced operational inefficiencies and distractions through the removal of overlapping tasks and a sharper internal focus.

IWG (Regus) offers fully serviced office spaces that bundle furniture, utilities, cleaning, and internet into one contract. This removes the need for separate sourcing by procurement or admin teams and lets organizations avoid the distraction of coordinating multiple vendors. As a result, internal teams can concentrate on core business functions rather than facility management (IWG, n.d.).





Environmental Benefits

As outlined above, BaaS can support reduced energy consumption, lower greenhouse gas (GHG) emissions, and reduced waste through design for durability, easier refurbishing and recycling, as well as materials reuse practices. In addition, BaaS vendors and solution providers can often provide their customers with sustainability related data, helping organizations track and demonstrate their positive environmental and socioeconomic impact.

Examples of operational improvements enabled by BaaS:

Reduced resource consumption and waste made possible through extended product use, reuse, refurbishment, and remanufacturing.

Envirotech's Furniture-as-a-Service provides remanufactured office furniture to clients like Google. This service model focuses on refurbishing and reusing furniture, significantly reducing waste and promoting sustainability in workplaces. As a result, office furniture gets multiple lifecycles, reducing the amount of waste generated and minimizing the use of raw materials. This significantly lowers the total cost of ownership: organizations can save up to 50% compared to buying new furniture, while also benefiting from included maintenance and upgrades (EnviroTech Office, 2023).



Achieving waste reduction through the promotion of circular economy principles and the conservation of raw materials.

Aisen, a Canadian company, offers Battery-as-a-Service using batteries to help organizations replace disposable batteries with a more sustainable alternative. The service includes delivery, recharging, maintenance, and replacements, streamlining operations while reducing single-use battery waste by over 85%. With up to 1,000 charge cycles per battery and no extra cost for defective units, Aisen's model cuts long-term costs and supports circular resource use (Aisen, n.d.).



Environmental Benefits

(continued)

Reducing embodied and operational carbon through circular material use and extended product lifespans.

A clear example is that in the IT sector, extending the lifespan of notebooks by just two additional years can result in a 28% reduction in greenhouse gas emissions (TCO Development, 2020).



Improving energy efficiency through integrated, service-based management of systems.

In real estate, **Philips Lighting** (now **Signify**) implemented Lighting-as-a-Service at Schiphol Airport, converting lighting upgrades into operational expenses. This resulted in 75% longer product lifespans and 50% lower energy consumption. According to Signify, with a Light-as-a-Service agreement, businesses can achieve 50% energy savings by the end of a 6-year contract period (Signify, n.d.).



Lowering greenhouse gas emissions to support climate targets and net-zero value chain strategies.

PaaS models offer a high-potential route to tackling Scope 3 emissions by re-strategizing product ownership and management. Through extended product use, circular design, logistical efficiency, and full lifecycle visibility, they enable companies to drastically reduce carbon footprints tied to production, transport, and disposal activities, empowering the transition toward net-zero value chains (Net Zero Events, n.d.).

In addition, some services address direct emission reduction, such as **Volta Trucks'** Truck-as-a-Service model, which supports fleet decarbonization by offering zero-emission electric trucks bundled with infrastructure and maintenance. This enables logistics companies to transition away from diesel, significantly lowering Scope 1 emissions and contributing to broader corporate climate targets for emission reduction and sustainability performance (Volta Trucks, n.d.).





Social/Cultural Benefits

BaaS can improve team morale by providing safe, better-equipped tools and creating more responsive vendor relationships. Increased safety and the opportunity to showcase sustainability efforts, foster a positive organizational culture and public image.

Some examples of potential social and cultural benefits include:

Improved workplace safety by ensuring access to up-to-date, well-maintained tools.

As an example, **Kaeser Kompressoren's** Compressed Air-as-a-Service model ensures that industrial clients use safe, properly calibrated compressed air systems. By handling maintenance and performance monitoring, Kaeser reduces the risk of equipment failure and workplace hazards, particularly in settings where air systems are critical to production safety (Kaeser Kompressoren. n.d.).



Boosted employee morale by providing teams with supportive, modern, and ergonomic work environments.

As an example, **Steelcase's** Furniture-as-a-Service model enhances workplace comfort and ergonomics by offering modern, adaptable office furniture designed for collaboration and wellbeing. Their flexible leasing approach allows businesses to regularly update furnishings without large investments, helping employees feel valued and supported in a functional work environment (Steelcase, n.d.).





Social/Cultural Benefits

(continued)

Reduced internal burdens by outsourcing maintenance and management, especially amid skilled labor shortages.

For businesses, private fleet management is increasingly complex due to compliance, costs, and driver shortages. Many companies are turning to dedicated fleet solutions to manage fluctuating demand, reduce liability risks, and ensure reliability, as private fleets struggle with right-sizing and peak-season pressures (Ryder System Inc., 2024).



Increased customer satisfaction by improving service continuity and minimizing disruptions.

PaaS models bolster customer satisfaction by offering reliable, value-driven service packages, combining product access, ongoing maintenance, and performance guarantees, which reduce downtime and build trust.

For instance, a study on Product-Service Systems (PSS) shows that customers report higher satisfaction when providers manage the full product lifecycle (delivery, servicing, end-of-life), as this reduces complexity and ensures consistent quality (Meneghetti & Finco, 2018).



Legal Benefits



Beyond operational benefits, BaaS models also offer significant legal advantages by formalizing responsibilities, reducing liability, and enhancing accountability through structured agreements. These legal elements are especially important as ownership shifts to providers and performance becomes the central contractual focus.

Service Level Agreements (SLAs) are particularly relevant in BaaS and PaaS contexts, highlighting how definitions, service scopes, and liability terms must be adapted to reflect the unique nature of "as-a-service" models. These SLA elements help clarify expectations, manage legal risk, and support long-term service relationships.

Reduced liability and legal risk by shifting responsibilities to service providers under BaaS contracts.

Under the BaaS model, some of the liability and risks can be transferred from organizations to their service providers, offering protection against safety infractions. BaaS contracts are often flexible, adaptable to individual scopes, and emphasize transparency, compliance, and risk management in line with evolving regulations.



Improved legal clarity through well-defined deliverables and performance-based obligations.

Under SLAs, providers commit to delivering specific outcomes—such as cost-per-hour operation—while internalizing risks related to equipment availability, reliability, and maintenance. Legally, these contracts should outline clear deliverables (e.g., uptime, output), define responsibilities, and include binding Key Performance Indicators (KPIs) to enhance predictability and accountability. Trust, mutual commitment, and regular communication remain essential, as not all contingencies can be pre-defined in advance (D'Adamo & Valenti, 2024).



Ensured accountability through SLAs.

SLAs establish legally binding obligations around metrics like uptime, response time, and availability, often including penalties for unmet targets, to guarantee service transparency and enforceability (Top Legal, n.d.).

See page 65 for further guidance on SLAs.

HOW TO IMPLEMENT BAAS

Transitioning to a New Procurement Model

Buying-as-a-Service (BaaS) fundamentally reshapes both the role of the buyer and the nature of the purchasing process. It moves towards interdependence. It is not merely about transactions, but about fostering long-term supplier relationships and creating sustained value. The shift to a BaaS model reflects this change in mindset, while prioritizing cost effectiveness alongside eco-efficiency, and enabling solutions that minimize negative impact while maximizing positive outcomes (Van Oppen, Croon, & Bijl de Vroe, 2018).

While several solutions already exist across sectors, BaaS adoption is still not widespread, in large part due to a lack of understanding of the business model. One of the main reasons for this is that it requires a fundamentally different approach from traditional purchasing. Operational shifts and budgetary changes are needed, along with strong buy-in and leadership from senior executives. It is a complex transformation that is dependent on education and a clear understanding of an alternative business model.

Procurement professionals play a central role in leading this transformation. As stewards of sourcing strategy and supplier relationships, they are well-positioned to challenge outdated models, promote innovation, and align business cases with financial, operational, and sustainability goals.

Applying Change Management to Enable BaaS Adoption

Leveraging Kotter's 8-Step Change Management Model is recommended as a foundation, with adaptations to support agile and accelerated implementation (Kotter, n.d.). This approach aligns proven change management principles with practical purchasing actions to expedite impact.

The model and its application to BaaS are outlined below. In order to apply this model in an urgent expedited fashion, it is recommended that organizations consider the model to be an ecosystem of elements that are core enablers of success. Such an approach will enable organizations to consider and make strategic investments in immediate opportunities while in parallel self assessing core enablers of success in the ecosystem and making strategic investments in those elements that can accelerate immediate and long-term progress.

Organizations are encouraged to step back, consider the full framework, and adapt it to their specific structure, priorities, and level of readiness.

8-Step Model to Help Implement BaaS

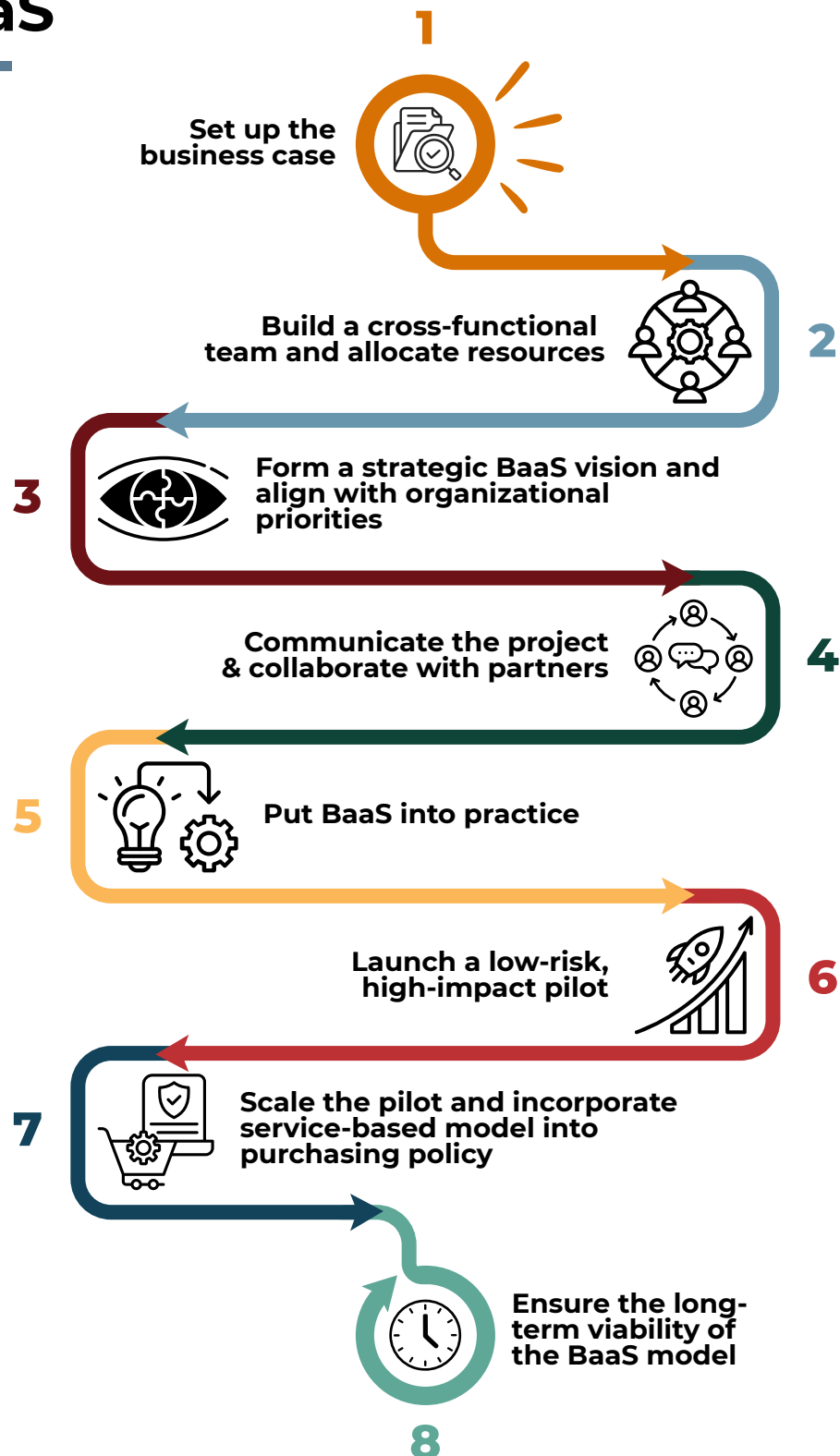


Figure 2

Step 1: Set Up the Business Case



There is a strong rationale for BaaS. Service-based models offer competitive and operational advantages, especially in the face of rising resource prices, supply chain disruptions, digitalization, and performance demands. Traditional purchasing, focused on ownership and short-term costs, is increasingly inefficient and misaligned with long-term sustainability goals.

From Commitment to Urgency: What Drives Change

While many organizations are committed to circularity and sustainability targets, creating a sense of urgency often starts with day-to-day operational challenges or specific internal pain points. Here are some examples of what motivated certain professionals to implement BaaS:

- **Poor asset management:** Realizing that company assets are not being properly managed — e.g., “we found that we aren’t managing those assets properly and efficiently internally,” referring to office IT equipment, or repeated loss of tools on construction sites.
- **Wasteful practices:** Recognizing wasteful processes, such as high volumes of disposable batteries generated in office environments.
- **High upfront investment barriers:** Facing high upfront costs for major investments like building renovations or installing renewable energy infrastructure (as in the case of St. Edward’s University, Austin, TX).
- **Decarbonization targets:** The need to decarbonize fleets or facilities, which often requires significant capital investment, e.g., transitioning to zero-emission vehicles.
- **Disrupted supply chains:** Experiencing supply chain disruptions, such as semiconductor shortages during the COVID pandemic or delays caused by the Suez Canal blockage.

These triggers often make inefficiencies visible and open the door for rethinking procurement strategies. BaaS provides a pathway to address these challenges through smarter asset use, reduced capital outlay, and supplier-driven performance.

As part of the business case, it is also recommended to identify one or more strategic product categories where BaaS could offer clear value — such as IT equipment, lighting systems, or fleet services. This early assessment helps target promising areas for piloting, which will be further refined and tested in Step 6.

For more detailed guidance on practical tools and financial evaluation methods used in BaaS implementation, see Step 5.

Step 1: Set Up the Business Case

(continued)



Justifying BaaS: Total Cost, Impact, and Risk Considerations

Capturing Long-Term Cost Savings

Documenting the business case is an important enabler of success that can be consistently added to and refined. It may include various elements such as cost savings identified through Total Cost of Ownership (TCO) and Total Cost of Usership (TCU), both of which account for operational, maintenance, and end-of-life expenses that are often overlooked in traditional purchase costs. While TCO is relevant for comparing traditional ownership models, TCU provides a more accurate reflection of ongoing service costs in a BaaS context. All successful business cases should be built around long-term savings opportunities (HP Development Company, 2023).

Demonstrating Environmental and Social Value

The business case also includes the creation of societal and environmental value which enables advancement towards an organization's sustainability objectives. It is important to note that this area of value is created with existing budgets and as such is excellent stewardship of organizational resources. Assessing this value may include pricing in externalities such as carbon emissions or water usage, as well as recognizing positive impacts like improved biodiversity. A 'true price' approach ensures that purchasing decisions reflect both economic, social, and environmental outcomes (Van Oppen, Croon, & Bijl de Vroe, 2018).

Reducing Operational and Supply Chain Risk

BaaS also supports risk mitigation by shifting performance accountability to suppliers and increasing supply chain resilience. Without this shift, organizations may fall behind as stakeholder expectations and regulations evolve.



Step 2: Build a Cross-Functional Team and Allocate Resources



Implementing BaaS requires more than functional coordination. Due to the complexity of the model, the engagement of the senior management team may also be necessary, as the shift affects strategic, financial, and operational areas of the organization.

This cooperation helps address common organizational barriers, such as the misalignment between those who fund or approve purchases and those who benefit from long-term savings, the complexity of shifting from CAPEX to OPEX, and situations where departments operate in silos.

Building an Effective Cross-Functional Team

The cross-functional team should include representatives from purchasing, finance, operations, sustainability, legal, IT, and logistics, along with an executive sponsor who can elevate the initiative strategically. Their role is not just to execute, but also to inspire, resolve cross-functional tensions, remove obstacles, and maintain focus on the long-term vision (TCO Development, n.d.).

While the exact composition of this team depends on the context and on the theme of the purchase, it is advisable to ensure to bring in individuals across the organization to advance the integration of BaaS. This collaborative group can pilot BaaS efforts, communications, assessing value, understanding implications and collectively work to build internal credibility.

Involving these functions early in the process and prior to the Request for Proposal (RFP) phase, enables the continuous building of organizational alignment.





Step 3: Form a Strategic BaaS Vision and Align with Organizational Priorities

A clear and compelling vision is essential to drive any significant transformation — this is a core component of Kotter's change model. In the context of Buying-as-a-Service, BaaS goals should connect to the organization's overall vision which ideally incorporates the intended shift from ownership-based purchasing to service-based solutions, as well as how this will generate value across cost efficiency, sustainability, risk management, and innovation.

As noted above, BaaS can help align with the organization's broader strategic goals, such as advancing climate action, improving operational flexibility, improved financial resiliency or delivering better user outcomes. Connecting these objectives ensures the initiative is viewed not as an isolated procurement shift, but as a contributor to long-term organizational success.

Defining What Success Looks Like

To build shared understanding and buy-in, it is important to clearly define what success looks like. This typically includes performance targets such as reduced total costs, improved service quality, customer satisfaction, and measurable contributions to environmental and social goals (Van Oppen, Croon, & Bijl de Vroe, 2018).

Key enablers of success include cross-functional team collaboration and senior leadership validation as well as ambition, practicality, agility enabling feedback informed evolution.



Step 4: Communicate the Project and Collaborate with Partners



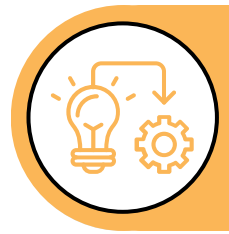
Consistent communication about goals, initiative, progress and value are critical to engage stakeholders, inspire early adopters, and build partnerships with active supporters (TCO Development, n.d.).

Empowering Internal Champions to Drive Change

Internally, identify and empower BaaS champions, individuals across departments who are enthusiastic, respected, and willing to advocate for the new approach. These champions play a critical role in driving behavior change, addressing concerns, and sharing success stories (Kotter, n.d.).

Externally, amplify impact by sharing successes, your journey, how you overcame challenges and the value. Also, explore opportunities to partner with other organizations and sectors that are also embracing service-based purchasing. These partnerships can bring credibility, shared learning, and leverage that accelerates adoption (Reeve Consulting, 2021).

Step 5: Put BaaS into Practice



There are a breadth of opportunities to pilot and implement BaaS. Taking action creates mechanisms for collaboration across departments, learning and value. Every project provides an opportunity to refine processes and identify real-world barriers that may affect broader adoption later on.

Rethinking Tendering to Encourage Innovation

An excellent step in the BaaS journey is, adapting tendering procedures to create space for new approaches and innovation. The business case can be based on functional specifications rather than strict technical requirements. By asking open questions and describing the desired outcome, rather than a product, organizations give suppliers room to propose creative, service-based solutions. However, it is important to define the scope clearly so suppliers understand the boundaries within which they can innovate (Van Oppen, Croon, & Bijl de Vroe, 2018).



Step 5: Put BaaS into Practice

(continued)

Engaging Suppliers Early to Co-Develop Solutions

To enable deeper levels of service-based and circular purchasing, organizations can conduct market consultations to understand supplier capabilities, identify constraints, and adjust strategies accordingly. Early engagement through Requests for Information (RFIs), supplier dialogues, or industry roundtables helps refine specifications and prevent reliance on outdated assumptions.

For more complex or innovative purchases, consider collaborative procedures that allow suppliers to co-shape solutions. This may involve a two-phase selection process (selection phase and award phase), or structured dialogue phases that build mutual understanding and trust. Regarding the two-phase process, the selection phase enables the identification of qualified suppliers or consortia based on technical expertise and relevant experience, while the award phase focuses on evaluating proposals in terms of quality, circularity, and alignment with organizational objectives. These approaches foster innovation, reduce risk, and help align supplier offerings with long-term organizational goals (Van Oppen, Croon, & Bijl de Vroe, 2018).

Equipping Teams with Tools and Clear Evaluation Criteria

Continue by equipping teams with practical tools, such as cost comparison calculators (TCO versus TCU), life-cycle costing (LCC) tools, service-specific evaluation templates, and functional specification checklists. These tools help purchasing teams take a standardized approach and make confident, data-informed decisions that align with the new model (Reeve Consulting, 2021).

Organizations should also embed these tools into existing digital platforms, such as e-purchasing systems or contract management dashboards, to ensure they are used consistently and effectively across teams.

Establish measurable, verifiable selection criteria, and ensure contracts are designed for flexibility, service-level performance, and clear accountability. These criteria should guide supplier selection, service design, and long-term impact assessment.

Lastly, measurability and comparability are critical to ensure criteria can be consistently evaluated across bids, using auditable and benchmarked standards that are adaptable to organizational goals. Clear, aligned criteria not only prevent greenwashing, but they also enable performance-based service purchasing that truly supports sustainable outcomes (HP Development Company, 2023).

Step 6: Launch a Low-Risk, High-Impact Pilot



Selecting the Right Pilot Opportunity

This step builds on the product category prioritization introduced in Step 1. While the business case identifies strategic areas where BaaS can create value — such as IT equipment, fleet management, or building systems — the pilot phase focuses on selecting a specific product or service within that area to test in practice (e.g., laptops, electric vans, or LED lighting).

The goal is to choose a pilot with visible impact and manageable risk, allowing the organization to apply BaaS tools, gather performance data, and build internal confidence through early results.

To select the right starting point, review upcoming tenders and estimate their expected spend, as higher costs often reflect higher risk. Then assess the circularity and BaaS potential of each product group. By mapping these two factors (risk vs potential impact), you can identify ideal candidates for piloting BaaS. In addition to risk and impact, consider sector-specific characteristics such as product complexity and functional lifecycle. Some product categories or sectors are inherently more suitable for circular approaches due to simpler product flows or established reuse potential (Van Oppen, Croon, & Bijl de Vroe, 2018).

Testing, Learning, and Communicating Early Wins

Use the pilot to test new purchasing tools, contract models, supplier engagement processes, and reporting methods. Define a short contract period to maintain flexibility and simplify adjustments.

Track and communicate results early and often. Quantify financial savings, reduced waste, improved uptime, or stakeholder satisfaction. Share these wins internally and externally to inspire confidence and motivate broader adoption.



Step 6: Launch a Low-Risk, High-Impact Pilot

(continued)



Vapor Rail adopts Battery-as-a Service: How to start small with BaaS and scale over time

Vapor Rail, a division of **Wabtec Corporation**, is a Canadian rail technology company focused on delivering **innovative** solutions to support **low-emission** and efficient rail operations. In alignment with its **sustainability goals**, Vapor Rail partnered with Aisen, a Canadian startup offering **Battery-as-a-Service (BaaS)**, to reduce the environmental impact of its battery use across operations. Aisen manages the full lifecycle of rechargeable batteries, from supply and maintenance to end-of-life recovery, enabling clients to eliminate single-use batteries and reduce hazardous waste.

Vapor Rail began its transition with a small-scale pilot project, testing Aisen's BaaS solution with 40 employees before the program was opened to all 120 employees. This approach allowed the company to assess **operational** fit, track **performance**, and evaluate **financial** implications without committing to a full rollout. Part of this pilot project included an employee satisfaction survey in which all 13 respondents agreed that the service is simple, adds value to the company, and would like to continue with the service. The pilot demonstrated clear **environmental benefits** and **cost predictability**, while significantly **reducing** internal resource time spent on battery procurement, maintenance, and disposal.

The success of this low-risk entry point highlights the value of starting small with PaaS models. Vapor Rail's pilot not only reduced waste and improved operational efficiency, but also set the stage for broader adoption across the organization, illustrating how service-based models can align with financial, operational, and sustainability priorities.





Step 7: Scale the Pilot and Incorporate Service-Based Model into Purchasing Policy

After the first success, organizations should press forward with greater intensity. The credibility gained from early wins can be used to influence and upgrade systems, structures, policies, and broader procurement practices. Sustained momentum is essential; change must continue until the long-term vision becomes reality (Kotter, n.d.).

Embedding Learnings into Policy and Practice

Based on the implemented project, insights and practical learnings should be embedded into updated purchasing policies and specifications. These updates serve as an interim framework for integrating service-based and sustainability principles into procurement. A structured approach ensures greater consistency, accountability, and alignment with the strategic direction defined earlier, and lays the foundation for broader adoption in future projects.

Scaling and Expanding BaaS Implementation

With a new policy in place, organizations can begin scaling successful pilots into broader purchasing categories. Lessons learned should inform the refinement of specifications, supplier engagement methods, contract structures, and reporting processes.





Step 8: Ensure the Long-Term Viability of the BaaS Model

To institutionalize service-based purchasing, organizations must clearly articulate how new behaviors contribute to organizational success and reinforce them until they become second nature. This includes evaluating systems and processes to ensure that management practices support the new behaviours, mindsets, and ways of working introduced through BaaS (Kotter, n.d.).

Reinforcing New Behaviours Through Systems and Training

To ensure long term success, sustainable purchasing practices (including BaaS) should be embedded into job descriptions, and teams must be given access to the technical training and financial resources needed to design, implement, and manage the organization's sustainable BaaS program (Reeve Consulting, 2021).

Begin by integrating BaaS principles into onboarding processes, role descriptions, and ongoing training from procurement officers and leads. Equip both new and existing staff with the knowledge and tools needed to confidently manage circular, service-oriented purchasing. Help staff understand the organization's strategic purchasing vision, policies, and priorities, and empower them to integrate sustainability into everyday purchasing decisions by holding regular trainings (Reeve Consulting, 2021).

Measuring Performance and Sustaining Momentum

Monitoring plays a key role in evaluating the success of BaaS. Setting clear, realistic Key Performance Indicators (KPIs) allows organizations to measure impact, track progress, and identify areas for improvement. To ensure reliable data, expectations must be communicated early, particularly by requiring suppliers to provide relevant data in the tender. This approach strengthens accountability and supports more effective, data-driven decision-making (Interreg NSR ProCirc, 2022).

Take regular stock of performance against sustainable purchasing goals, and openly communicate successes, challenges, and opportunities (Reeve Consulting, 2021).

As adoption grows, ensure that feedback loops and performance reviews are in place to track progress, adjust practices, and keep momentum alive. This is the phase where BaaS evolves from isolated innovation to a scalable, repeatable, and strategic part of how your organization operates.

OVERCOMING CHALLENGES TO UNLOCK THE BENEFITS OF BAAS



Financial

- *Assessment of Cost Effectiveness & ROI*
- *Accurate forecasting*



Operational

- *Determination of Usage Frequency*
- *Equipment Complexity and Maintenance Requirements*
- *Effective Transition*
- *Performance Metrics*
- *New Challenges in Logistics*



Organizational

- *Interdepartmental Collaboration*
- *Incorporate Lifecycle Thinking*



Environmental

- *Realizing Environmental Benefits*
- *Circularity and End-of-Life Integration*



Social/Cultural

- *Communicating the Transition to BaaS*
- *Limited understanding of the benefits of the service*
- *Transition from one-off transactions to long-term partnerships*



Legal

- *Legal involvement*
- *Contract management*
- *Managing safety liabilities*

Understanding This Section

Shifting to BaaS may require new procedures, processes, and procurement practices, as well as considerations around change management. As with any change, implementation requires thoughtful and strategic planning and effort to address any challenges that emerge. Successful implementation will require an understanding of your organization's specific context, as well as effective internal strategies that have supported change in other areas.

This section outlines some of the common barriers being faced. To help ensure that the full benefits of BaaS can be achieved, key questions and practical recommendations are offered to help guide a more strategic and tailored adoption process.

**Description of
Key Challenge
Identified**

**Provided
Questions to
Consider**

**Proposed
Recommendations**

Financial

Assessment of Cost effectiveness & ROI

Table 2

It may be challenging to assess the return on investment for BaaS due to limited usage data or lack of visibility into the total cost of ownership (TCO). The financial value isn't always recognized in the short term. Sometimes it's a longer term play. This can make it difficult to justify the investment internally when the lifecycle value is not necessarily recognized upfront. For example, maintenance and end-of-life costs may not be considered at the point of purchase for traditional product ownership. However, these savings can be seen through BaaS over time. Strategic financial analysis can help truly assess, compare and validate the return on service-based models compared to traditional purchasing.

Questions and Recommendations to follow on the next page...





Assessment of Cost effectiveness & ROI

Questions to Consider	Recommendation
• How often are you using this product? • What are all the costs associated with product usage? (e.g. energy, management, maintenance, end of life management) • What would be your costs under a BaaS model? Consider if you would be paying per use, or at a fixed rate? • How does the service model incorporate maintenance, repair, refurbish and end of life management costs within their service fee? • What are all the financial, environmental, and social benefits that you can access in a purchase model compared to a PaaS model? • What is your projection of these benefits and costs as your business grows? • How long would it take for you to see the financial benefits? • If the financial benefit is not seen in the short term, do you have the financial means and capacity to wait it out until value is gained?	Ensure you take time to collaborate with internal departments including your sustainability department to determine if a BaaS model is the best financial fit for your organization Consider all the costs associated with ownership in order to truly compare ownership versus PaaS. Ensure you measure out the financial comparisons far enough into the future to be able to showcase the potential long term impact. Consider shifting from CAPEX to OPEX through Buying-as-a-Service to avoid large upfront investments and potentially improve EBITDA by replacing depreciation with streamlined service costs. However, it is recommended to evaluate the full cost of the service agreement over its duration, as the impact on EBITDA may vary depending on pricing and contract terms.



Operational

Challenge: Determination of Usage Frequency

Table 3

Determining how often a product or piece of equipment is used is important in deciding between ownership and a service agreement.

Questions to Consider	Recommendation
• How often is the product or equipment used? • Does the usage justify ownership, or support a service model?	Ensure the provider is transparent about how long repairs take for their products/ equipment. Determine your usage patterns to help determine whether a service model or ownership is a better fit.

Challenge: Equipment Complexity and Maintenance Requirements

Highly complex or maintenance-heavy equipment may benefit from BaaS models that offer specialized support and uptime guarantees. However, reliance on external technicians can introduce delays and downtime if service responsiveness is not clearly defined.

Questions to Consider	Recommendation
• How complex is the equipment or product? • How often does it require maintenance? • What expertise and resources do we have in house to manage and maintain this equipment? • What service levels are providers committing to? • What mechanisms will enable suppliers to monitor equipment performance? • Would outsourcing reduce downtime and maintenance burdens?	Consider lifecycle complexity as well as your expertise and resources in your assessment . High-maintenance products/ equipment may be better suited to service agreements with uptime guarantees.



Challenge: Effective Transition

Shifting to a BaaS model may require changes in workflows, staff roles, and performance expectations. Without a clear transition plan or change management support, organizations may face resistance or disruption during implementation.

Questions to Consider	Recommendation
• What would be the organizational impacts of shifting to buying as a service? • How would roles, systems and processes need to shift? • What change management is required to enable that shift? • What efforts would best support this shift? • What higher value work can be taken on as staff is freed from tasks like asset tagging and end of life management?	Develop a structured transition plan that includes phased implementation, staff training, and internal change management to support a smooth shift to the BaaS model. Flexibility, scalability, and ongoing innovation are a part of the value embedded in BaaS. Additionally, when choosing a provider, ensure that they can provide clear operational instructions and a process for issue management to ensure success.





Effective Performance Metrics

Shifting to BaaS models will naturally require a shift to performance metrics across teams. There is an opportunity for organizations to consider their objectives and how performance metrics can best support their goals in a BaaS model. This may require a move from traditional incident-based metrics to outcome-focused measures. For example, you may have current metrics around purchasing costs but these may need to shift to ongoing operational costs given a move to BaaS.

Questions to Consider	Recommendation
• How will performance metrics need to change to accommodate BaaS? For example in IT, you may no longer have data on issues if your supplier provides servicing. As such performance metrics could shift to client and employee satisfaction. • How might performance metrics better connect to areas of value and importance?	Consider redefining success metrics to reflect your organizational needs in BaaS

Johnson Controls:

How Companies Can Monetize Environmental Impacts Through a BaaS Model

Johnson Controls, a global leader in smart building technologies and energy-efficient solutions, has demonstrated how **BaaS** model can help organizations achieve ambitious sustainability goals while navigating financial and operational constraints. In its effort to decarbonize its Norman, Oklahoma facility, the company faced common challenges: **rising operational costs, limited capital budgets, and regional policy gaps** — despite low local energy prices.

Instead of relying on traditional capital expenditure, the company implemented its own **OpenBlue Net Zero Buildings as-a-Service model**: a fixed-fee, operational expense-based solution.

Johnson Controls... continued on next page!



Early in the planning process, the team realized that the full cost of achieving net zero exceeded the available capital budget. This triggered a **reassessment** of how return on investment should be calculated — not just in terms of energy savings, but by incorporating the monetized value of carbon emissions avoided, reputational risk, and the strategic cost of failing to meet net zero targets.

By quantifying these environmental impacts financially, Johnson Controls created a stronger business case for change.

The project was led by cross-functional teams, including engineers, finance specialists, and operations managers, who defined clear sustainability targets and implementation steps. But the shift extended beyond finance: performance reviews, internal training programs, and communication strategies were all realigned to reinforce net zero goals. This helped embed sustainability into organizational culture and ensured long-term commitment.

Johnson Controls' approach highlights how a BaaS model can translate environmental value into measurable and financially viable outcomes, turning carbon reductions into tangible business drivers. Their success offers a blueprint for others seeking to align climate goals with operational and financial realities.





Challenge: New Challenges in Logistics

Logistics considerations such as shipping delays, minimum service thresholds, and storage needs can complicate the transition to BaaS. A poor fit between your organization's demand and a provider's logistics capabilities can lead to inefficiencies or service disruptions.

Questions to Consider	Recommendation
• Is your order volume sufficient to meet the provider's minimum service levels? • How will logistics such as shipping and import delays be managed in the service model? • Does shifting to BaaS reduce your need for on-site storage?	Assess whether your organization's volume needs align with service model offerings. Low-demand items may not suit some BaaS providers. Ensure BaaS agreements are scalable and viable at your organization's consumption levels. Evaluate how the service provider handles international logistics, potential import delays, and associated risks. Assess logistics risks and select providers who have robust, transparent distribution and inventory practices. Shifting to BaaS might reduce or eliminate the need for storage, but ensure to check if the initial setup requires warehousing or holding solutions.





Organizational

Cost effectiveness & ROI

Table 4

Procurement best practices involve working across teams, and this is no different for BaaS. However, implementing BaaS successfully requires early and active involvement from multiple departments, each bringing different priorities and concerns. Without cross-functional collaboration during this transition, potential risks may be overlooked, and challenges with internal buy-in may be faced.

Questions to Consider	Recommendation
• Have all relevant departments (finance, IT, sustainability, security, operations) been involved in evaluating this BaaS opportunity? • What do all relevant departments believe is required for an effective transition?	Interdepartmental collaboration is essential. Foster cross-functional collaboration early in the procurement process to align expectations, assess risks, and ensure all stakeholder needs are addressed. This can address the potential of risks being overlooked, and challenges with internal buy-in.





Environmental

Challenge: Realizing Environmental Benefits

Table 5

BaaS offers opportunities to extend the product life cycle, reduce material usage and waste but realizing these benefits requires intentionality in supplier selection and in service procurement.

Questions to Consider	Recommendation
• What environmental commitments has the service provider made? • What progress has the service provider made on their commitments? • What environmental specifications / attributes does PaaS provide? • What are the service provider's commitments to collaboration and innovation around sustainability?	Establish weight sustainability related criteria for service provider selection and leverage this criteria in the design of the service agreement.

HP Canada:

Embracing PaaS for a Sustainable Future



HP, a global technology leader providing personal computers and printers, has long been committed to **driving sustainable innovation and reducing its environmental footprint**. In recognition of the pressing need to transition away from the traditional "**take, make, dispose**" **linear economy**, HP embarked on a **strategic shift** towards offering **PaaS** models for its printing and computing solutions.

This **transformation** was not just about changing how products are delivered, but about ensuring a **demonstrable** and significant **reduction** in **environmental impact**.

HP Canada ... continued on next page!



To rigorously assess the benefits of this shift, HP commissioned independent, third-party experts to conduct **life cycle assessments** (LCAs) on its core PaaS offerings: **HP Device as a Service** (DaaS), **HP Managed Print Services** (MPS), and **HP Instant Ink**.

The goal was to scientifically quantify the environmental impacts of these service-based models and compare them to the conventional transactional approach of selling products outright.

The results of these LCAs told a **compelling** story. Compared to traditional sales models, HP's PaaS solutions consistently delivered **superior environmental** performance across a range of impact categories. According to HP's Whitepaper, DaaS reduced greenhouse gas (GHG) emissions by **25%**, improved resource efficiency by **28%**, and decreased ecosystem impacts by **28%**. MPS reduced GHG emissions by **12%** and improved resource efficiency by **13%**. Similarly, Instant Ink delivered a remarkable **73%** reduction in GHG emissions and improved resource efficiency by **73%**.

These impressive results stemmed from factors such as extended product life cycles, optimized product usage, reduced manufacturing needs, and more efficient material sourcing and transportation.

By rigorously validating the **environmental benefits** of its **PaaS** offerings through LCAs, HP has been able to demonstrate a tangible commitment to sustainability. These assessments not only inform HP's business decisions, guiding product design and climate goal strategies, but also empower customers to confidently choose sustainable solutions that reduce their own environmental footprint. HP's approach demonstrates how a commitment to rigorous analysis and innovative business models can drive meaningful **progress** towards a more **circular** and **sustainable future** for technology.



Challenge: Circularity and End-of-Life Integration

In order to maximize the sustainability benefits of BaaS, circular economy principles must be built into the service model. This approach should incentivize companies to adopt circular economy strategies, prioritizing long-lasting, durable, and modular designs that maximize the use phase of products.

One challenge with BaaS is the difficulty of explaining environmental benefits, especially when the impact is not something that can be visibly seen, immediately experienced or directly measured.

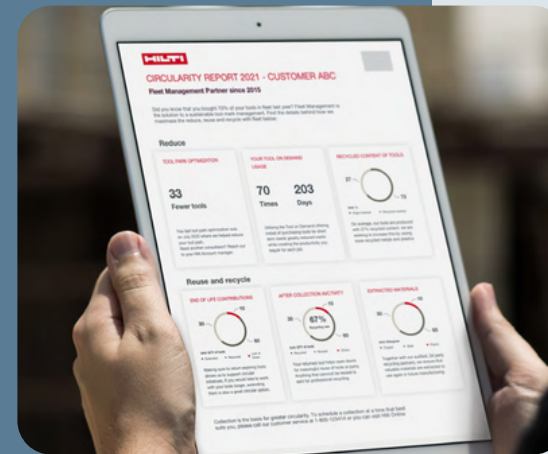
Questions to Consider	Recommendation
• How can circular economy principles be integrated into the product or service lifecycle? • How is the provider extending product life, reducing material usage, refurbishing products and addressing end-of-life management? • What environmental benefits (e.g., emissions reduction, material reuse) does the BaaS model offer compared to traditional purchasing?	Seek service models that embed circularity by incorporating recycling, remanufacturing, or take-back schemes into the product life cycle. Service providers often supply sustainability data to customers, which improves traceability and transparency. This includes metrics that are regularly tracked and easier to measure in a service model (like materials saved, emissions prevented, or energy used). Some providers even offer a circularity report, detailing materials that have been saved, repurposed, diverted, or recycled, and may include a lifecycle assessment (LCA) to show the product's carbon footprint and reductions achieved.





HILTI: How Tool-as-a-Service becomes transparent and measurable

Hilti, a global leader in professional construction tools and services, has developed a compelling example of how **Product-as-a-Service (PaaS)** can deliver measurable environmental and financial value. Through its Fleet Management Model, Hilti offers tools via a **Tool-as-a-Service** system, helping customers reduce capital expenditures, avoid unnecessary purchases, and increase operational flexibility. As of 2025, more than **50%** of Hilti's global tool sales are now procured by customers through their fleet program. At the same time, this service-based model addresses an important challenge often faced by BaaS and PaaS initiatives: the lack of visible or **quantifiable environmental benefits**.



To make the environmental impact of its model more transparent, Hilti provides customized **Circularity Reports** to customers. These reports summarize the environmental performance of each customer's tool usage, offering data-driven insight into how shifting from ownership to service contributes to resource efficiency.

These reports offer transparency by summarizing the **environmental performance** of each customer's tool usage within the service model. They help quantify how the shift from ownership to service leads to reductions in tool consumption and waste. Customers receive detailed insights on how much unnecessary purchasing has been avoided through tool park **optimization, on-demand tool usage, and loan services**. This shows how inventory and usage optimization directly support resource efficiency.

The reports also reflect how tools are **reused** and **recycled** at the end of their life. Hilti collaborates with certified recycling partners to ensure that returned tools are handled responsibly, and materials, especially metals, are recovered and reintegrated into new production. The reports include information on the recycled content of tools and the share of materials diverted from landfill. They also highlight how many tools were returned for reuse, donation, or recycling, and what proportion of these could be processed into second-life applications.

By offering customer-specific, data-driven insights, Hilti provides a strong example of how circular service models can be made measurable and transparent. This practice can serve as a model for other industries as well, supporting the broader adoption and credibility of Business-as-a-Service approaches in sustainability reporting and strategy.



Social/Cultural

Challenge: Communicating the Transition to BaaS

Table 6

Effectively introducing BaaS often hinges on clear, concise communication that highlights its benefits. Without a straightforward message, stakeholders may resist or misunderstand the change.

Questions to Consider	Recommendation
• Who within your organization is impacted by PaaS? • What changes might be required to enable the shift to PaaS? • How might those changes be supported? • What are the existing communication mechanisms within your organization? Consider meetings, dashboards, internal websites, newsletters?	Be sure to understand and meaningfully engage stakeholders early. This will require refining plans in collaboration with stakeholders. It will help ensure that your transition plan has strong support. Some tactics that can make the transition easier include listening, connecting to goals, and trying to keep broad communications simple, short, and clear and with access to transition support.

Challenge: Limited Understanding of the Benefits of the Service

A lack of education and awareness is a key driver behind this resistance, as employees may not fully understand the benefits or mechanics of BaaS. Limited familiarity with BaaS can lead to hesitation or misinformed decisions during procurement. Building internal knowledge and leveraging educational resources from providers is essential to drive understanding and informed adoption.

Questions to Consider	Recommendation
• How might we best equip teams with tailored, clear and relevant insights regarding the transition to PaaS?	Ask providers what kind of information they are able to provide you with about their services, and educational resources on BaaS more broadly.



Challenge: Transition from one-off transactions to long-term partnerships

Strong, long-term relationships with service providers are critical to the success of BaaS models. Without the capacity to manage these partnerships, organizations may struggle with communication, accountability, and service quality over time.

Questions to Consider	Recommendation
• How might your organization set up to manage relationships with external organizations? • How might you build the capacity and resources to maintain them? • What are the indicators of success for a good partnership? • How might you incorporate these indicators of success into the collective agreement?	Maintaining really strong relationships with your service providers is essential to success. Make sure you choose service providers that include you in the process through close and continuous engagement.





Legal

Challenge: Legal involvement

Table 7

Early involvement of finance and legal teams is essential to assess risk, structure contracts, and evaluate financial implications. Without their input from the outset, organizations risk compliance issues, misaligned terms, or delayed decision-making.

Questions to Consider	Recommendation
• Are your legal teams consulted at the early stages of procurement? • Do you have clear processes for assessing risks? • Is there alignment between procurement, finance, and legal in contract development and review? • What indicators of success do you want incorporated into the legal contract? • Do these areas cover the core areas of risk and value to your organization?	Legal teams should be involved early in the purchasing process, especially before major purchases or RFP processes.





Challenge: Contract management

Effective contract management is crucial to clearly define maintenance, replacements, performance metrics, and end-of-life responsibilities. Without clear terms, organizations risk misunderstandings, service disruptions, and unmanaged liabilities throughout the service lifecycle.

Questions to Consider	Recommendation
• Who inside the organization will be responsible for contract management? • What processes including quarterly reviews can you set up to ensure success • Are all responsibilities across the product lifecycle clearly outlined in your service contracts? • Does your contract include detailed performance metrics and provisions for replacements or maintenance? • Have you addressed risk and liability in your contracts, including 'what if' scenarios (e.g. climate-related risks, supply chain disruptions, emerging raw material prices, business continuity risks)?	Contractor Management becomes central. It is important to ensure clarity, and that the following components are clearly defined before signing a service contract: • Maintenance • Consumables • Replacements • End-of-life responsibilities across the full product lifecycle • Performance metrics • Risk assessment





Challenge: Managing safety liabilities

Safety risks associated with equipment or services can result in significant liability and costs. BaaS can help mitigate these risks by shifting safety responsibilities to the provider, but organizations must carefully evaluate liability terms in contracts.

Questions to Consider	Recommendation
• Are there safety liabilities associated with this product or service? • If so, what are the potential costs and consequences of a safety infraction?	Clearly assigning safety responsibilities to the provider through well-defined contract terms can reduce organizational risk. This shift in liability can be a strong incentive for adopting BaaS, as it places safety accountability with the provider.

Challenge: Managing safety liabilities

Signing a contract that lacks flexibility risks over or under-committing needs. Without clear projections and close collaboration with providers, organizations may face inefficiencies, excess costs, or service gaps.

Questions to Consider	Recommendation
• How do you manage and measure changes in demand? • Is there flexibility built into your contract to avoid overbuying or underutilization?	To mitigate the overbuying risk, it's important that flexibility is built into BaaS contracts to address fluctuating needs. Close collaboration with the service provider can help to optimize usage, forecast, and reduce waste. We recommend being proactive in communicating demand-based needs to your provider.

CONCLUSION

Achieving a sustainable future necessitates operating within planetary boundaries and recognizing our interconnectedness within and across ecosystems and species. The implementation of Buying-as-a-Service empowers organizations to purposefully move in this direction, fostering responsible resource management and minimizing environmental impact. However, a widespread shift to BaaS cannot be achieved through mere process adjustments. It demands a thoughtful and comprehensive approach to change management, acknowledging the profound shifts in processes, roles, and systems it entails. Considering the urgent state of the climate, this transformation requires a heightened sense of urgency.

Procurement leaders are encouraged to rise to the occasion, spearheading a structured, strategic, and urgent transformation that goes beyond incremental changes. By combining a strong foundation in change management principles with the agility and accelerated movement needed to address the climate crisis, they can unlock the potential of BaaS. This entails taking proactive steps to embrace BaaS, including progress on sustainability goals, a new avenue for business value creation, and an opportunity for professional leadership. By creating a compelling business case, fostering cross-functional collaboration, and communicating the value of BaaS, procurement leaders can inspire change within their organizations and beyond.

Embracing BaaS isn't solely about adhering to ethical imperatives; it represents a strategic imperative for smart business, forward-thinking planning, and accountable leadership within an environment undergoing rapid transformation. The time to act is unequivocally now. By seizing this opportunity, procurement professionals can shape a future where economic prosperity and environmental stewardship are inextricably linked, ensuring a sustainable path forward within planetary boundaries.



GLOSSARY

BaaS - Buying-as-a-Service (BaaS) is a circular procurement model. Unlike traditional procurement, which emphasizes ownership of products or equipment, BaaS focuses on accessing services through models such as leasing, lending, subscriptions, reuse, or pay-per-use, rather than outright purchase or resale.

CapEx - Capital expenditures (CapEx) increase the capacity or productivity of a particular asset or extend its useful life. They often relate to long-term investment decisions of a company. (SYSTEMIQ, 2021)

CDP - Carbon Disclosure Project is a not-for-profit charity that runs the global disclosure system for investors, assessing how companies, cities, states and regions manage their environmental impacts. CDP holds the largest environmental database in the world, and in 2022 scored nearly 15,000 companies on their climate change, forests and water security disclosures, and on their engagement with their own suppliers on environmental impacts. (HP Development Company, 2023)

EcoVadis - EcoVadis is a ratings platform that helps organizations assess social and environmental criteria of potential suppliers. Offerings include sustainability evaluation, risk monitoring and audit management. EcoVadis distils information on environment labor and human rights, ethics and sustainable procurement to give an overall company score. They assess more than 60,000 companies in 198 industries and 155 countries. (HP Development Company, 2023)

ESG - ESG stands for environmental, social, and governance. It refers to the way in which an organisation manages its impacts on, risks related to, and opportunities arising from, environmental, social and governance issues.

Externalities - Externalities are environmental and social costs related to the product, service or work during the life-cycle. These are, for example, the costs associated with greenhouse gas emissions and toxic substances. (Interreg NSR ProCirc, 2022)

KPI - Key Performance Indicator (KPI) is a measurable value that shows how effectively a person, team, or organization is achieving a specific objective. KPIs help track progress and guide decision-making.

LCC - Life-cycle costing (LCC) provides a critical tool by incorporating not only the Total Cost of Ownership but also externalities, aligning procurement with both financial and sustainability goals. (Interreg NSR ProCirc, 2022)

LCA - Life-cycle assessment (LCA) is the evaluation of the impacts associated with all phases of a product or service's useful life, from cradle to grave. It focuses on individual product and service systems and is therefore often used to compare the environmental performance of goods and services. In LCA, a distinction is usually made between different activities along the value chain up to the end-of-life phase of a product. (SYSTEMIQ, 2021)

GLOSSARY

OpEX - Operating expenditures (OpEx) or operating expenses are expenses incurred when operating a business (e.g. depreciation, rent, salaries or utilities), other than the cost of goods sold. (SYSTEMIQ, 2021)

PaaS - Product-as-a-Service (PaaS) represents a shift from traditional ownership-based consumption to an access-oriented model, where producers retain ownership and lifecycle responsibility for their products (Nordic Council of Ministers, 2024). This approach naturally incentivizes companies to adopt circular economy strategies, prioritizing long-lasting, durable, and modular designs that maximize the use phase of products (Peruzzini et al., 2014).

RFI - Request for Information (RFI) is a formal way to inform the market about your intentions and gather input from suppliers. In circular procurement, an RFI can be used to explore potential solutions, engage suppliers early, and start a dialogue about circular ambitions and functional needs. (Interreg NSR ProCirc, 2022)

RFP - Request for Proposal (RFP) is a form of bid solicitation used where the selection of a supplier cannot be made solely on the basis of the lowest price. An RFP is used to procure the most cost effective solution based upon evaluation criteria identified in the RFP. (Reeve Consulting, 2021)

ROI - Return on investment (ROI) is a performance measure used to evaluate the efficiency or profitability of an investment. (SYSTEMIQ, 2021)

SDG - The Sustainable Development Goals (SDGs), adopted by the UN in 2015, are a global call to end poverty, protect the planet, and ensure peace and prosperity for all by 2030. The 17 interconnected goals emphasize the need to balance social, economic, and environmental sustainability. (UNDP, n.d.)

SLA - A Service Level Agreement (SLA) is a formal contract between a service provider and a client that defines the expected level of service, including specific performance standards, responsibilities, and remedies if those standards are not met. (SYSTEMIQ, 2021)

TCO - The total cost of ownership (TCO) is an extended cost accounting and is used to determine the total costs incurred throughout the lifecycle of an asset in order to facilitate decisions on its procurement and operation. This involves analyzing all the acquisition and usage costs incurred over the lifecycle of the object, including operating costs (such as energy consumption and other resources), maintenance and repair costs, taxes, and the costs or revenues associated with end-of-use. (SYSTEMIQ, 2021 and Interreg NSR ProCirc, 2022)

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APPENDIX A

Request For Proposal & Service Level Agreements:

How and why they differ when considering PaaS and BaaS models

Request for Proposals and Service-Level Agreements, when designed for BaaS or PaaS, will have unique characteristics compared to their traditional counterparts, reflecting a shift from product ownership to service access, a focus on long-term value, and a greater emphasis on performance metrics, life cycle considerations, and collaborative relationships. It is important to have a well-practiced and knowledgeable team that includes lawyers to create, modify and certify both the RFP and SLA.

Request for Proposal (RFP):

A Request for Proposal (RFP) is a formal document that an organization issues to solicit bids or proposals from potential vendors or service providers. It outlines the organization's requirements for a specific project or service, inviting qualified parties to submit detailed proposals outlining how they would meet those needs. In essence, it's a structured process for finding the best solution and the right partner for a particular job.

Below, are selections of an RFP that are unique for BaaS or PaaS:

- **Emphasis on Functional Outcomes, not just Specifications:** Focus on the desired functional outcomes. It invites vendors to propose innovative solutions that meet those functional needs, even if they involve different technologies or approaches.
- **Life cycle thinking and Sustainability requirements:** place significant emphasis on life cycle considerations, sustainability and circularity, like End-of-life management, Environmental Impact data, and Durability and Upgradability.
- **Focus on Service Levels and Performance Metrics:** prioritize robust service levels that define key performance metrics and consequences for non-compliance.
- **Financial Model Flexibility:** Consider different financial models, allowing vendors to propose options like usage-based pricing, subscription fees, pay-per-output or incentives for resource efficiency or sustainability.
- **Risk Assessment and Liability:** address critical risks including but not limited to vendor dependency, data security and privacy, business continuity, changing needs, or liability for safety infractions.
- **Emphasis on Collaboration and Relationship Management:** emphasize the importance of a strong, collaborative relationship with the vendor. This may include requirements for regular meetings and communication, shared goal-setting and performance reviews, innovation and continuous improvement.
- **Clear Exit Strategy:** clearly define the process for returning equipment, data migration, transfer of responsibilities, and ensuring no disruption to ongoing operations.

APPENDIX A

Service-Level Agreement (SLA):

Service-level Agreements, or SLAs, is a contract between a service provider and a customer that outlines the level of service expected, including performance standards, responsibilities, and remedies for failure to meet agreed-upon standards.

Here are several selected elements of an SLA that are important to know in special consideration of BaaS and PaaS agreements.

DEFINITIONS:

This section defines the key terms used throughout the agreement, ensuring clarity and consistent interpretation.

- **"Product(s)":** The definition must make it clear that the customer is receiving access to use the product, not ownership of the product itself. Detail specifications and capabilities are vital, since the customer will be relying on these specs rather than internal technical evaluation.
- **"Service Fee":** This definition needs to emphasize that payments are for access to the product, not the product itself. It should also allow for flexibility in pricing models (usage-based, tiered, etc.) to align with the "as a service" nature.
- **"Maintenance Services":** These need to be explicitly defined and linked to a schedule, because the customer isn't directly responsible for maintaining a product that they don't own.

- **PRODUCT(S) AND ASSOCIATED SERVICES:** This section outlines the specific products being provided and the services bundled with them (installation, maintenance, support, etc.).
 - The emphasis is on *access* to the product rather than ownership.
 - Detailed description of services is paramount, because they are a core part of the offering and the value proposition. If upgrades or changes occur regularly, the contract will have to consider how these are implemented, or else create ambiguity about what is part of the service.

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SLAs (continued)

- **SERVICE TERM AND RENEWAL:** Defines the duration of the agreement and how it renews.
 - Terms may be longer than traditional purchase agreements, because of the ongoing service relationship. This can also be the primary concern of moving to this model for those with annual budgeting.
 - Cancellation clauses may need to be more flexible, but still clear, as ongoing services might be dependent on specific needs as well as on service or product performance.
- **SERVICE FEES AND PAYMENT TERMS:** Details how the customer pays for the service.
 - There is a wider range of potential pricing structures compared to traditional purchase agreements, including usage-based, tiered, and flat fees.
 - It's important to specify how usage is measured (if applicable) and ensure transparency in reporting.
- **PRODUCT DELIVERY, INSTALLATION, AND ACCEPTANCE:** Outlines how the product is delivered and installed, and how the customer accepts it.
 - The Provider typically handles installation and setup, because they own the product.
 - Acceptance criteria might focus on functionality and service levels rather than product specifications.
- **MAINTENANCE, SUPPORT, AND SERVICE LEVELS:** Details the provider's responsibilities for maintenance, support, and service levels.
 - This is a crucial section of the agreement. It needs to clearly define what maintenance is included, response times, SLAs, and any remedies for failure to meet SLAs. It addresses the key operational requirements.
- **TITLE AND RISK OF LOSS:** Determines who owns the product and bears the risk of loss or damage.
 - The Provider retains ownership of the product.
 - The agreement should clearly state when the risk of loss transfers to the Customer (typically upon delivery) and what happens in case of damage or loss.

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SLAs (continued)

- **INSURANCE:** Specifies insurance requirements.
 - The Customer will likely be required to maintain property insurance to cover the full replacement value of the product, naming the Provider as an additional insured.
- **INTELLECTUAL PROPERTY AND USAGE DATA:** Covers intellectual property rights and how usage data can be used.
 - The Provider retains all intellectual property rights in the product and its underlying technology.
 - The agreement should clearly define how usage data can be used (e.g., service improvement, anonymized aggregation) and protect Customer-specific operational data.
- **WARRANTIES AND DISCLAIMERS:** Sets forth the warranties provided and disclaimers.
 - Provider warrants that the product will function as intended and that maintenance will be provided as agreed to, as needed and performed professionally. However, it's common to disclaim other warranties (merchantability, fitness for a purpose, etc.).
- **LIMITATION OF LIABILITY:** Limits the liability of both parties.
 - Liability limitations are typical, but the agreement should carefully consider potential risks, what types of damages are excluded and how total liability is capped.
- **INDEMNIFICATION:** Specifies who is responsible for defending against claims.
 - Indemnification clauses should address issues like product liability, intellectual property infringement, and damages caused by either party's negligence.
- **TERMINATION:** Outlines how the agreement can be terminated.
 - There should be clear procedures for returning the product upon termination.
 - The agreement should address what happens to outstanding fees and any liabilities.

APPENDIX B

PaaS Providers

NOTE: This is NOT meant to serve as an exhaustive list of all projects or initiatives but rather provide a variety of examples.

NAME	SERVICE	TYPE	HEAD-QUARTERS	OPERATION IN CANADA	WEBSITE
Technology and IT Equipment					
HP	Managed Device Services	Device-as-a-Service	USA	Yes	https://www.hp.com/us-en/services/workforce-solutions/workforce-computing/managed-device-services.html
Lenovo	TruScale Device-as-a-Service	Device-as-a-Service	China / USA	Yes	https://www.lenovo.com/ca/en/daas/
Xerox	Managed Print Services	Printing-as-a-Service	USA	Yes	https://www.xerox.com/en-us/services/managed-print
Office Furniture and Equipment					
WeWork	Flexible workspace solutions	Office-as-a-Service	USA	Yes	https://www.wework.com
IWG (Regus)	Serviced offices and co-working spaces	Office-as-a-Service	Switzerland	Yes	https://www.iwgplc.com
Knotel	Custom Office Spaces	Office-as-a-Service	USA	Yes	https://www.knotel.com
Interface	Carpet Evergreen Services Agreement	Carpet-as-a-Service	USA	Yes	https://www.interface.com

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NAME	SERVICE	TYPE	HEAD-QUARTERS	OPERATION IN CANADA	WEBSITE
Envirotech	Furniture leasing and rental	Furniture-as-a-Service	Canada	Yes	https://www.envirotechoffice.com
Ahrend	Circular Interiors leasing	Furniture-as-a-Service	Netherlands	Not mentioned	https://www.ahrend.com
Steelcase	Circular by Steelcase, FMV Leasing	Furniture-as-a-Service	USA	Yes	https://www.steelcase.com/people-planet/circular-by-steelcase
CORT	Office furniture rental	Furniture-as-a-Service	USA	Not mentioned	https://www.cort.com
Live Light	Office furniture subscription	Furniture-as-a-Service	Belgium	Not mentioned	https://live-light.com/professionals/office

Buildings and Real Estate

Philips Lighting (now Signify)	Lighting-as-a-Service (pay-per-lux)	Light-as-a-Service	Netherlands	Yes	https://www.signify.com/en-ca/lighting-services/managed-services/light-as-a-service
Johnson Controls	Net-Zero Buildings-as-a-Service	Buildings-as-a-Service	US	Yes	https://www.johnsoncontrols.com/smart-buildings/net-zero-buildings/net-zero-buildings-as-a-service
Mitsubishi	Elevator-as-a-Service	Vertical Transportation-as-a-Service	Japan	Yes	https://www.mitsubishielectric.com

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NAME	SERVICE	TYPE	HEAD-QUARTERS	OPERATION IN CANADA	WEBSITE
Schindler	Elevator-as-a-Service	Vertical Transportation-as-a-Service	Switzerland	Yes	https://www.schindler.com
Otis	Elevator and escalator service	Vertical Transportation-as-a-Service	US	Yes	https://www.otis.com
KONE	Elevator and escalator service	Vertical Transportation-as-a-Service	Finland	Yes	https://www.kone.com
Danfoss	Cooling-as-a-Service	HVAC-as-a-Service	Denmark	Yes	https://www.danfoss.com
Carrier	Cooling-as-a-Service	HVAC-as-a-Service	US	Yes	https://www.carrier.com
Solnet Group	Solar-as-a-Service	Energy-as-a-Service	Netherlands	No	https://www.solnet.group
Flogas	Solar subscriptions	Solar-as-a-Service	Ireland	No	https://flogasenterprise.ie
Fleet Management / Transportation					
Volta Trucks	Electric truck fleet with bundled maintenance	Truck-as-a-Service	Sweden	Not mentioned	https://voltatrucks.com
WattEV	EV truck leasing and charging	Truck-as-a-Service	US	Not mentioned	https://www.wattev.com

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NAME	SERVICE	TYPE	HEAD-QUARTERS	OPERATION IN CANADA	WEBSITE
Hino Trucks	InclusEV bundled electric fleet solution	Truck-as-a-Service	Japan	Yes	https://www.hino.com
Daimler (Rizon)	EV truck with consulting and financing	Truck-as-a-Service	Germany	Not confirmed	https://www.daimlertruck.com
Ryder	Electric fleet with national service	Truck-as-a-Service	US	Yes	https://www.ryder.com
Industrial Equipment					
Hilti	Fleet Management for construction tools	Tools-as-a-Service	Liechtenstein	Yes	https://www.hilti.com
Rolls Royce	Power-by-the-Hour	Engines-as-a-Service	UK	Yes	https://www.rolls-royce.com
Kaeser Kompressoren	Compressed Air-as-a-Service	Industrial -as-a-Service	Germany	Yes	https://www.kaeser.com
ABB	Automation-as-a-Service	Industrial Automation-as-a-Service	Switzerland	Yes	https://new.abb.com
Caterpillar	CatLink telematics & subscription	Heavy Machinery-as-a-Service	US	Yes	https://www.caterpillar.com

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NAME	SERVICE	TYPE	HEAD-QUARTERS	OPERATION IN CANADA	WEBSITE
TRUMPF	Equipment-as-a-Service	Industrial Equipment-as-a-Service	Germany	Yes	https://www.trumpf.com
Kärcher	Equipment-as-a-Service	Industrial Equipment-as-a-Service	Germany	Yes	https://www.kaercher.com
Atlas Copco	Industrial tools-as-a-Service	Machinery-as-a-Service	Sweden	Yes	https://www.atlascopco.com
DMG Mori	Machine tools-as-a-Service	Machinery-as-a-Service	Germany	Yes	https://www.dmgmori.com
Keller	Machine tools-as-a-Service	Machinery-as-a-Service	Germany	Yes	https://www.keller.de
Loxam	Construction machinery rental	Construction Machinery-as-a-Service	France	Yes	https://www.loxam.com

APPENDIX C

Potential Tools for Implementing Circular Procurement

Sustainable Public Procurement (SPP) Criteria

The MVI Criteria tool, developed by the Government of the Netherlands, provides structured access to the latest Sustainable Public Procurement (SPP) criteria. It supports the selection of suitability requirements, selection criteria, technical specifications, award criteria, and contract clauses. Users can choose between three levels of ambition and view relevant sustainability themes linked to each criterion. The selected content can be downloaded and integrated into tender documents after internal review and adaptation.
<https://www.mvicriteria.nl/en>

Sustainability Criteria

The Swedish National Agency for Public Procurement offers a criteria service featuring environmental and social sustainability requirements. These criteria are designed to support public buyers in integrating sustainability into the procurement process. The resource helps align procurement practices with broader environmental, social, and economic objectives, contributing to national and international sustainability targets.
<https://www.upphandlingsmyndigheten.se/en/criteria/>

Guide to Sustainable IT Procurement

This broader guide outlines HP's strategic framework for sustainable IT procurement, covering the entire lifecycle of IT hardware and services. It includes best practices, risk mitigation strategies, and recommendations for integrating sustainability from the early planning phase through to supplier engagement and contract management. The document highlights the environmental and social risks within electronics supply chains and offers actionable steps for procurement professionals. Although it does not include calculation tools, it serves as a foundational reference for aligning IT procurement with circular economy and climate goals.
Brochure 1 to 12_R2 copy

Procurement Criteria for IT Equipment

HP has developed Sustainable Procurement Criteria documents to support public and private sector buyers in integrating sustainability into tendering processes for IT equipment and supplies. These guides cover PCs, printers, and print supplies, offering practical, ready-to-use text for technical specifications, award criteria, and contractual clauses. Designed for both public and commercial buyers, the documents help align procurement decisions with circular economy goals, supplier transparency, and lifecycle impact considerations. Although they do not include financial calculators, they serve as valuable templates for incorporating sustainability into procurement documentation.

PC criteria: <https://www8.hp.com/h20195/v2/GetDocument.aspx?docname=c07587442>

Printer criteria: <https://www8.hp.com/h20195/v2/GetPDF.aspx/c06981117.pdf>

Print Supplies Criteria: <https://www8.hp.com/h20195/v2/GetDocument.aspx?docname=c07649558>

APPENDIX C

Life-Cycle Costing (LCC) Tools

The European Commission's Green Public Procurement (GPP) platform offers a set of Life-Cycle Costing (LCC) calculation tools. These support more accurate cost assessments by including operational and end-of-life expenses in addition to purchase prices. Tools are provided for specific product groups and are aligned with EU GPP criteria.

https://green-forum.ec.europa.eu/green-public-procurement/life-cycle-costing_en

Life-Cycle Assessment (LCA) Tools

The LCA methodology is standardized under ISO 14040:2006 (Environmental management — Life cycle assessment — Principles and framework) and ISO 14044:2006 (Environmental management — Life cycle assessment — Requirements and guidelines), providing a consistent structure for evaluating environmental impacts across a product or service life cycle.

<https://www.iso.org/standard/37456.html>

<https://www.iso.org/standard/38498.html>

LCA Calculation – openLCA

openLCA is a free, professional software developed by GreenDelta, offering comprehensive capabilities for life cycle and environmental footprint assessments. It supports a wide range of databases and methodologies, including those aligned with ISO standards. Since its launch in 2006, openLCA has been used globally by enterprises, research institutions, government bodies, and NGOs. GreenDelta, founded in 2004 and based in Berlin, specializes in sustainability consulting and LCA tool development.

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

Sustainability Certification – TCO Certified

TCO Certified is a global sustainability certification for IT products, focusing on both environmental and social responsibility throughout the product life cycle. It includes criteria for product design, supply chain responsibility, and independent verification. The certification helps purchasers identify IT equipment that meets comprehensive sustainability requirements, supporting responsible procurement and risk reduction. TCO Certified is widely recognized by public and private sector buyers aiming to align procurement with circular and ethical practices.

<https://tcocertified.com/>

APPENDIX C

Circular Procurement – Circular IQ

Circular IQ is a digital platform designed to help procurement professionals integrate circular economy principles into their processes. It supports the development of tailored circularity criteria, monitors delivered product performance, and generates data-driven insights that align with organizational sustainability goals such as reducing waste and increasing recycled content. The platform draws on recognized frameworks, including Cradle to Cradle (C2C), Global Reporting Initiative (GRI), and the Ellen MacArthur Foundation's Material Circularity Indicators. Circular IQ is used by public institutions and corporate clients across Europe, particularly in the Netherlands and Belgium. While primarily European, the platform and its reporting tools are accessible to international users, including organizations in Canada, seeking to enhance transparency and performance in circular procurement.
<https://circular-iq.com/>

Environmental Footprint – Ecochain

Ecochain is a software platform that enables companies to calculate and monitor environmental impacts at the company, process, and product level using Life Cycle Assessment (LCA) methodology. The tool translates complex environmental data into actionable insights for internal teams and external stakeholders, supporting informed decisions across procurement, operations, and product development. Ecochain's dashboards simplify access to footprint data, including emissions, material use, and energy consumption. It allows procurement teams to incorporate environmental impact as a criterion in supplier evaluation and track progress during contract execution. Based on ISO-certified standards, Ecochain is suitable for a wide range of product categories and is already used by organizations across Europe and internationally. The platform is available for Canadian businesses seeking to integrate science-based impact measurement into procurement and value chain management.
<https://ecochain.com/>

Financing Tool – Cash Flow Opportunity Calculator (ENERGY STAR)

The Cash Flow Opportunity Calculator, developed by ENERGY STAR under the U.S. Environmental Protection Agency (EPA), helps organizations assess the financial viability of energy efficiency investments by comparing financing options against anticipated savings. The tool enables users to estimate how much equipment or service capacity can be funded through expected operational savings, and whether immediate investment is more beneficial than waiting for budget availability or interest rate changes. It also quantifies the opportunity cost of delaying procurement. The calculator is particularly relevant for service-based purchasing models, such as Buying-as-a-Service (BaaS), where upfront capital costs are avoided, and future savings play a central role in justifying procurement decisions. The tool is available as a downloadable Excel workbook.
<https://www.energystar.gov/buildings/tools-and-resources/cash-flow-opportunity-calculator>