

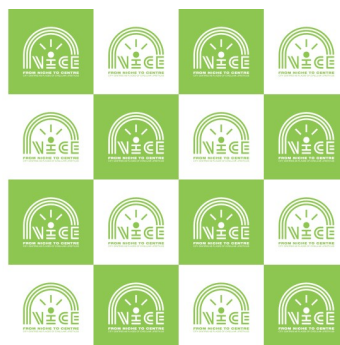


How to link sustainable e-commerce with city centres

A guide for SMEs and municipalities to bring retail channels together for the benefit of all.

Part of the NiCE D.2.4.1 Solution Box

26.03.2026





NICE GUIDES OVERVIEW

This document is a part of the NiCE Solution Box – a set of four guides offering practical and interconnected approach to advancing circular lifestyles and sustainable development in cities. Though each guide addresses a specific area, together they provide a complete toolbox for organizations, businesses, authorities, and citizens seeking to make urban spaces more resilient, resource-efficient, and community-oriented. All guides can be accessed on the NiCE Knowledge Platform: <https://circularlifestyle.eu/resources>.

Methodology Kit on stakeholders' engagement in circular lifestyles

This guide focuses on the human and organizational dimension of circular development. It provides step-by-step methods for NGOs, schools, and public authorities to initiate participatory processes, re-activate spaces, and encourage behavioral changes toward sustainability. It emphasizes scaling successful initiatives and sustaining impact over time. The kit combines theory with good practices from Central European cities (Bologna in Italy, Brzeg Dolny in Poland, Budapest in Hungary, Graz in Austria, Jihlava in Czechia, Košice in Slovakia, Ptuj in Slovenia, and Würzburg in Germany), offering versatile tools that can also be applied in other areas of sustainable urban development.

Guide: How to build, run and sustain a multifunctional resource centre

This guide focuses on transforming underused urban areas into dynamic hubs supporting circular practices. It provides a framework for planning, designing, and managing spaces that encourage the sharing, repair, and reuse of materials. Targeted mainly at NGOs and SMEs, this guide emphasizes the importance of stakeholder engagement, financial planning, and day-to-day operations. It also includes case studies from the NiCE Project that show how such centres can become economic and social anchors for city centres in Brzeg Dolny (Poland), Graz (Austria), Košice (Slovakia), and Ptuj (Slovenia).



How to link sustainable e-commerce with city centres. A guide for SMEs and municipalities to bring retail channels together for the benefit of all.

This guide responds to the growing influence of e-commerce on local economies. It offers SMEs actionable strategies to connect their online business activities with physical urban spaces, ensuring that city centres remain vibrant and economically relevant. This includes exploring localized delivery systems, creating synergies between digital and physical marketplaces, and encouraging sustainable practices that align with circular lifestyles. The guide also identifies opportunities for collaboration with logistics providers, technology developers, and community groups, positioning SMEs as key drivers of sustainable urban commerce.

Circular Water Kit addressing water re-use and water saving in cities

This guide highlights water as a critical resource in urban environments. It explains how local authorities and citizens can improve water efficiency, integrate reuse technologies, and enhance climate resilience. The guide's focus is both educational and applicative: it raises awareness about the value of water and provides policymakers and planners with tools to implement circular water strategies. Real-world examples from Bologna (Italy) illustrate the benefits of collaboration between public authorities and communities, showing how saving and reusing water can strengthen sustainability efforts across cities.



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1 INTRODUCTION

1.1 Context: about the NiCE Project

The NiCE (From Niche to Centre - City Centres as Places of Circular Lifestyles) project is a transnational initiative aimed at revitalizing urban centers by promoting circular and sustainable lifestyle and consumption. In response to challenges such as the COVID-19 pandemic and the rise of e-commerce, which have led to the decline of traditional retail spaces, NiCE seeks to inspire the transformation of towns and city centers into vibrant hubs of circular lifestyles.

Central to the project's vision is the promotion of sustainable consumption habits and the establishment of strategic frameworks to support circular lifestyles. Through innovative urban development approaches, NiCE encourages the repurposing of spaces for reuse, repair, and sustainable consumption initiatives. The project also emphasizes education and collaboration, offering inspiration and practical tools to municipalities, citizen associations, and policymakers to foster sustainable behaviors and practices.

NiCE operates across eight Central European countries – Austria, Czechia, Germany, Hungary, Italy, Poland, Slovakia, and Slovenia – bringing together a diverse group of partners to share knowledge, implement pilot projects, and scale successful models.

Building on these objectives, the following guide outlines practical strategies and insights for linking sustainable e-commerce with city centers, offering actionable steps to help achieve NiCE's vision.

1.2 Target group & purpose of the guide

The purpose of this guide is to provide practical strategies and insights for cities and small and medium-sized enterprises (SMEs) on how to link sustainable e-commerce with city centres. It inspires for the promotion of vibrant urban spaces that thrive economically, socially, and environmentally. The overarching goal is to create towns and city centres that are not only competitive and innovative but also align with the principles of sustainability and inclusivity, ensuring long-term resilience in the face of economic and environmental challenges.

As e-commerce continues to grow, it presents both opportunities and challenges for city centres. This guide aims to address these dynamics by offering ideas, actionable steps and encouraging stakeholders to try and test new solutions that promote circular lifestyles, reuse



of urban spaces, and collaborative efforts between local businesses and e-commerce companies.

In addition, this guide demonstrates how **SMEs** can effectively link their e-commerce activities with city centres, creating opportunities to strengthen their local presence while benefiting from sustainable practices. By connecting online operations with urban spaces, SMEs can tap into new customer bases, enhance delivery efficiency through localized solutions, and contribute to revitalizing city centres as hubs of economic activity. The guide emphasizes strategies that not only support business growth but also align with broader goals of sustainability and community engagement. The guide also addresses the specific challenges and opportunities faced by SMEs and offers practical tools to drive positive change in city centres through sustainable e-commerce integration.

Cities, in turn, can learn about the opportunities and challenges SMEs face when dealing with e-commerce and what they can do to bring both retail channels together in their city.

Additionally, the guide will be useful for **further stakeholders** such as logistics providers, technology developers but also for non-profit and community organizations, working in the urban area on the topic of circular lifestyles. Their collaboration with SMEs and city authorities is crucial for creating efficient, sustainable systems that benefit businesses, residents, and the broader urban ecosystem.

The concepts and recommendations outlined in this guide build on transnational insights gained throughout the initiation, implementation, and evaluation of the NiCE pilot activities, particularly in Jihlava and Würzburg. These pilots served as real-life testing environments, allowing different approaches to linking e-commerce, circular services and physical urban spaces to be explored, compared, and refined over time.

The guide further draws on experiences from other NiCE pilot actions, as well as relevant literature, additional best-practice examples, and practical tools. Together, these sources form a comprehensive knowledge base that combines empirical evidence with existing research and applied expertise.



1.3 Key recommendations

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Think ambitiously and multifunctionally: Develop creative solutions that go beyond traditional retail models and combine multiple uses, such as retail, logistics, services and community functions.
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Pilot and test ideas at a small scale: Experiment with new concepts through small-scale pilots to minimise financial risk, learn quickly, and adapt solutions before wider implementation.
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Enable adaptive reuse of urban spaces: Repurpose vacant or underused buildings for flexible uses such as pop-up stores, micro-hubs or local fulfilment centres, treating existing buildings as valuable resources.
- 

Strengthen cooperation across the logistics chain: Foster collaboration between SMEs, logistics providers, municipalities and other city stakeholders to ensure integrated, efficient and sustainable solutions.
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Use digital solutions to enhance urban life: When applied strategically, e-commerce and digital tools can support vibrant city centres by improving accessibility, services and local economic activity.



2 UNDERSTANDING THE LINK BETWEEN E-COMMERCE AND CITY CENTRES

2.1 The rise of e-commerce and its impact on urban areas

The digital transformation of retail is not a story of online versus offline, but of convergence and mutual reinforcement. Across Europe, e-commerce has become an integral part of everyday consumption: in 2023, EU e-commerce turnover reached approximately €900 billion, representing a continuous growth trend with online retail now accounting for over 15% of total retail turnover in countries such as the UK, Germany, France, and the Netherlands (HDE Online Monitor 2025, Ecommerce Europe Report 2024). While individual growth rates vary, most EU countries have seen double-digit annual increases in online sales over the past five years, with Southern and Eastern Europe catching up rapidly.

The COVID-19 pandemic further accelerated this shift: across Europe, millions of consumers switched to online shopping, and this behaviour has largely persisted post-pandemic. According to Ecommerce Europe, over 75% of internet users in the EU made at least one online purchase in 2023, with particularly strong growth in sectors such as clothing, electronics, and household goods (Ecommerce Europe Report 2024). However, most consumers do not draw strict lines between channels. Many people research products online before making a purchase in a physical store (a behaviour known as ROPO = Research Online, Purchase Offline), while others discover products in-store and later buy them online.

A recent development is the surge of ultra-low-cost international platforms. These new market entrants have rapidly gained traction across Europe by offering vast product ranges at extremely low prices, made possible through direct imports from global manufacturers and aggressive digital marketing. The dominance of such platforms has driven up advertising costs, intensified price competition, and placed additional pressure on both local businesses and established European online retailers (HDE Online Monitor 2025). These platforms are especially popular among younger, price-sensitive consumers, further accelerating the shift of spending away from local city centre businesses to global, online-only models. Concerns regarding product quality, sustainability, labour conditions, and the environmental impact of cross-border shipping and high return rates are increasingly discussed.



One of the impacts of this transition is the declining footfall in city centres across Europe. In many major cities, visitor numbers in shopping streets remain below pre-pandemic levels, and retail vacancy rates have risen. As more people shop online, the physical role of city centres as commercial and social hubs is eroding. The connection between stationary retail and urban space, once seen as inseparable, is being weakened (Ecommerce Europe Report 2024).

E-commerce is not only transnational within Europe, it is globally interconnected. As previously mentioned, most European countries and regions face similar challenges related to e-commerce as well as the transformation of their city centers. Therefore, challenges on this scale need to be addressed transnationally and beyond the borders of individual states. A strong transnational cooperation supports the development of adequate solution strategies.

2.2 Challenges of integrating e-commerce with city centres

Integrating e-commerce with city centres is challenging. One of the primary concerns is the displacement of local businesses due to the competitive advantages of online retailers, particularly large international platforms. These companies benefit from lower overhead costs, global supply chains, and the ability to offer a vast assortment at highly competitive prices. City centres in many European countries also face high rental prices, making it difficult for innovative retail concepts, circular offers and start-ups to establish a physical presence.

Logistical and environmental challenges are also pronounced at the European level. The increase in parcel deliveries, especially the so-called “last mile”, has led to higher traffic congestion, noise, and emissions in urban areas across the continent. According to the European Environment Agency (EEA), transport emissions from e-commerce deliveries are a growing concern, particularly as same-day and next-day delivery become standard consumer expectations. The proliferation of single-use packaging and high return rates, which often exceed 30% in sectors such as fashion, further exacerbate environmental pressures (European Environment Agency, 2024, HDE Online Monitor, 2025).

In 2020 the German Environment Agency (UBA) also identified positive environmental effects of e-commerce. The study suggests that online shopping often produces fewer greenhouse gas emissions than traditional retail. However, this depends on specific factors like transport methods, energy use in shops, and customer travel. In some cases, physical shopping may still be more eco-friendly. When comparing the two systems, the last mile is of particular importance in online retail, while in stationary retail the emissions from the market/shop



(electricity and heating) and the shopping trip made by customers are of particular significance. (Umweltbundesamt 2020)



3 OPPORTUNITIES AND STRATEGIES

For e-commerce SMEs, engaging more actively in city centres can open new customer segments, increase trust through physical presence, and enable new business models such as pick-up points, repair services, or rental hubs. Conversely, stationary retailers who establish or expand their online presence can reach customers beyond their immediate urban area, offer click-and-collect or home delivery, and participate in local online marketplaces. The key is to recognise that today's successful retailer is often both: present online and offline, offering a seamless and customer-centric experience (HDE Online Monitor, 2025).

Moreover, commerce is not limited to selling new products. City centre businesses and online shops can offer repairs, upcycling, rentals, and sharing services and further blur the boundaries between traditional and digital retail. This hybrid approach not only meets changing consumer demands but also supports sustainability and community engagement.

The following concepts are not only informed by existing literature and market trends, but are also directly derived from practical experience within the NiCE pilot projects, particularly in Jihlava and Würzburg. These pilots provided concrete insights into how e-commerce, circular services, and physical urban spaces can be effectively connected in practice.

Rather than presenting purely theoretical approaches, this chapter translates pilot experiences into actionable strategies that can be adapted and applied in other urban contexts. Where relevant, additional insights from other NiCE pilot actions are also incorporated.

3.1 Reuse of space with pop-up stores, showrooms and micro-hubs

3.1.1 Diverse concepts for the reuse of vacant urban spaces

One of the most promising strategies linking e-commerce with the revitalisation of city centres is the adaptive reuse of vacant or underused urban spaces for new functions such as pop-up stores, micro-hubs or fulfilment centres. These multifunctional spaces can foster community engagement, support local economies, and reduce environmental impacts by enabling more efficient, localised logistics (Ecommerce Europe Report 2024). The relevance of these approaches has been observed in the NiCE pilot activities, where cities such as Jihlava, Würzburg, Graz or Ptuj tested how underused urban spaces can be reactivated to support circular services and new e-commerce-related functions.



Pop-up stores and showrooms allow online retailers to establish a temporary physical presence, enhancing brand visibility and enabling direct interaction with consumers. Pop-up concepts also enable the promotion of repair, rental, or upcycling services beyond traditional selling. Organisations or businesses can use pop-up stores as a flexible and cost-effective tool for market testing. Similar approaches were explored in the NiCE project, for example in Graz, where temporary use of urban spaces was used to test new circular business models and engage local communities in sustainable consumption practices.

By allowing multiple brands to share temporary retail spaces, city centres can offer a more diverse and dynamic retail mix while reducing the environmental footprint of retail operations (e.g. see Graz pilot). Pop-up concepts also make it easier for sustainable brands and start-ups to gain visibility, and for city centres to remain vibrant and relevant despite changing consumer habits (Umweltbundesamt 2023).

Showrooms and physical touchpoints can significantly reduce return rates. When customers can see and try products in-store before purchasing online, unnecessary returns and the associated emissions from reverse logistics are minimised. This synergy not only benefits the environment but also improves customer satisfaction and reduces operational costs for retailers (Umweltbundesamt 2023). This aligns with findings in both pilot activities in Jihlava and Würzburg, where citizens welcome the stores as physical touchpoints but also increasingly desire an improved online offer. In the case of Würzburg, the Zukunftshaus also serves as an on-site touchpoint for many brands and providers without their own physical stores to engage with consumers.

All these concepts are not limited to traditional retail units. Creative formats such as tents, shipping containers, mobile trucks or buses, the towns market place, and immersive installations can serve as engaging retail environments as well. These experiential retail setups often enhance the shopping experience and attract public attention through their novelty and visual impact.

Returned goods and remaining stock present another opportunity for sustainable urban commerce. Rather than being disposed of, these items can be resold through **outlet stores** or dedicated platforms within city centres. This approach supports the circular economy, reduces waste, and provides affordable access to goods for a wider range of consumers.

Local logistics (micro) hubs and resource/space-sharing schemes can make the “last mile” more efficient by consolidating shipments and using city centre pick-up points. When using reusable packaging solutions or integrated systems, these hubs can also support the



reduction of packaging waste. Finally, located at the city centre or set-up as multifunctional space, these hubs not only make urban logistics more sustainable but also offer the opportunity to bring foot traffic back to city centres, supporting local businesses (Umweltbundesamt 2023). In the Würzburg pilot, related concepts were tested to improve last-mile logistics and reconnect delivery functions with city centres, demonstrating their potential to reduce environmental impacts while supporting local economic activity.

3.1.2 Zoom-in: benefits of pop-up stores

One of the main advantages of pop-up stores is that there is a **limited financial risk**. Businesses and initiatives can use a vacant space for a limited time and often for a lower rent than usual in similar locations.

In addition, pop-up stores can **raise awareness** (for circular economy, repair, brands, etc.) in locations with a high concentration of the target audience, typically in city centers or busy shopping districts. Beyond visibility, these temporary retail spaces offer a unique opportunity for direct customer engagement, which is especially valuable for brands focused on sustainability and the circular economy. Visitors can touch and try the products while learning more about their origin and production process, for example, that they were made from secondary raw materials, repaired, upcycled, or locally produced with a minimal environmental footprint. Experiences from the NiCE pilots (e.g. Jihlava, Würzburg, Graz, Ptuj) confirmed that such direct interaction is essential for building trust and raising awareness of circular products and services among urban consumers.

Pop-up concepts often **incorporate experiential and experimental elements**, such as themed installations, repair-focused workshops, creative reuse studios, or exhibitions of sustainable brands. In this way, they make the visit a unique and inspiring experience. For brands embracing circular practices, this format can serve not only as a powerful marketing tool, but also as a means of educating the public. In pilots such as Graz and Jihlava, these formats proved particularly effective in attracting new audiences and testing innovative circular concepts in real-life settings.

The pop-up concept can be tailored to various objectives, such as:

- Launching a new circular brand, e.g., fashion designers working with deadstock fabrics or upcycled textiles.
- Showcasing products made from secondary materials, such as recycled packaging, furniture from pallets, or refurbished electronics.



- Seasonal campaigns focused on reuse and sustainable gifting (e.g., “sustainable Christmas”).
- Community and educational events, such as public workshops (e.g., clothing repair, waste-based crafting), or shared showrooms for local producers.
- Integrated circular projects that combine multiple services (e.g., rental services, refill stations, repair hubs, and a retail store in one).
- A group of self-employed individuals share a pop-up space to showcase their work and test, whether they can imagine having their own store.

This model enables (online-only) brands with a focus on sustainability to bring circular economy principles closer to everyday consumers through hands-on experience, dialogue, and inspiration. By doing so, they foster awareness and interest in sustainable consumption.

Overall, pilot experiences indicate that pop-up formats are most effective when combined with broader circular services and strong community engagement. They also suggest that digital tools can further enhance their reach and usability, helping to create hybrid models that bridge online and offline retail.

Additional insight: Integrating online and offline sales channels for a seamless customer experience

At a time when customers expect maximum convenience and a seamless experience across all sales channels, pop-up stores offer a unique opportunity to bridge the online and offline worlds. Many brands in these temporary retail spaces **combine traditional in-store shopping with digital tools**, for example, allowing customers to order products online and pick them up on-site, or enabling them to easily order items they tried in-store via QR codes for home delivery. This kind of integration enhances the shopping experience, reduces logistics costs, and helps brands build stronger, cross-channel customer relationships. This type of integration was also reflected in the NiCE pilots.

Digital platforms that connect online and offline retail can also create seamless customer experiences and make sustainable products and services more accessible to a broader audience. These enable retail cooperatives and local businesses to seamlessly connect their physical shops with digital marketplaces. Thus local retailers can display real-time product availability, allow customers to research online, purchase offline and coordinate bundled deliveries for local pick-up (Platoyo, 2025).



3.1.3 Zoom-in: benefits of micro-hubs and pick-up points

Repurposing abandoned or underutilized urban spaces as sustainable logistics hubs, pickup points, or community retail spaces offers multiple benefits. Above all, it helps **reduce traffic load and greenhouse gas emissions** by bringing supply chains and last-mile delivery closer to consumers. When goods are stored or dispatched at a micro-hub from within the city, more sustainable modes of transport like cargo bikes, walking couriers, or zero-emission electric vehicles, can be used. This leads to less large delivery vans (less noise, fumes, congestion) in built-up areas and narrow streets. Furthermore, pick-up points reduce the number of stops for delivery vehicles and when set-up at locations which are easily accessible by public transport or located at places that are visited anyway (e.g. supermarkets) they help to reduce emissions of the last mile. The importance of efficient and user-friendly logistics solutions was also highlighted in the Würzburg pilot, where accessibility and convenience were identified as key factors for the uptake of new offers and influencing user behaviour.

Interest in these forms of urban logistics is growing thanks to the rise of e-commerce, quick commerce (fast delivery of small parcels), and emerging models of urban entrepreneurship. Local businesses or shared platforms can use these spaces to **operate community shops**, smart parcel lockers, shared storage facilities, or multi-carrier micro-hubs. These models not only support sustainable transport and space reuse, but also help to revitalize underused urban areas, enhancing their social and economic appeal. Similar dynamics were observed in several NiCE pilot contexts (e.g. Jihlava, Kosice, Ptuj), where activating underused spaces contributed to both economic revitalisation and the development of circular services.

Technology plays a key role, since modern inventory management systems, smart lockers, and mobile app integration allow these solutions to **operate effectively even in small-scale** urban locations. Automated storage and micro-depots can run with minimal or no on-site staffing, adapting flexibly to shifting demand. This is consistent with the Jihlava pilot, where digital tools were introduced to optimise internal processes and improve data management in reuse operations.

In areas at risk of depopulation or spatial marginalization, adaptive reuse can provide new momentum. **Communities** can be actively involved through participatory planning and interim or shared use of vacant buildings. In smaller cities such as Ptuj, similar approaches demonstrated how reuse and shared spaces can support local communities and revitalise underused urban areas.



Cities and municipalities can support this trend by providing access to suitable properties, adopting flexible zoning policies, funding pilot projects, or adjusting regulations to enable logistics and retail use outside traditional commercial zones. Public-private partnerships can also be highly beneficial.

Overall, the NiCE pilot experiences suggest that combining physical infrastructure, digital tools and stakeholder cooperation is key to successfully implementing micro-hubs, pick-up points or similar concepts in underused or vacant urban spaces.

Additional insight: Encouraging environmentally friendly delivery options

During the preparation for the pilot activities in Würzburg, and in collaboration with the bicycle courier service Radius, we also explored environmentally friendly delivery options.

Urban parcel delivery has become an integral part of everyday life, in cities, towns, and rural areas alike. **However**, with the growing number of online purchases and the demand for fast delivery, pressure on transport infrastructure and the environment is also increasing. Conventional delivery methods using fossil-fuel vans contribute to traffic congestion, air pollution, and greenhouse gas emissions. This opens the door for **eco-friendly delivery alternatives**.

One of the most effective solutions is the use of **cargo bikes**. They are ideal for delivering small parcels over short distances, particularly in densely populated urban areas. They produce no emissions, take up minimal space, and often reach destinations faster than conventional vans by using bike lanes, pedestrian zones (if permitted), or narrow routes inaccessible to regular vehicles. When combined with a micro-hub, cargo bikes can become a key element of last-mile delivery. We worked with this solution in Würzburg.

Another option is **electric vehicles**, such as electric vans or small e-cars. These vehicles significantly reduce CO₂ emissions, improve air quality in cities, and decrease noise pollution thereby directly contributing to residents' well-being and quality of life.

Support for these delivery modes can take many forms: from **developing infrastructure** for parking, charging, and maintenance, to providing incentives for green carriers within urban logistics systems (e.g. access exemptions for city centers, financial subsidies, reduced fees, etc.). Some cities are introducing low-emission or zero-emission zones, encouraging companies to transition to cleaner technologies.

Digital technologies also play a critical role when enabling smart route planning, shipment consolidation, and capacity sharing among different carriers. This improves delivery efficiency and reduces the number of empty trips. From an economic perspective, green logistics also creates new job opportunities. For example, bike couriers, e-mobility technicians, or micro-depot operators.



Eco-friendly delivery is a vital step toward healthier, more sustainable cities. It helps reduce emissions, improve urban quality of life, lower noise levels, foster innovation in transport and logistics, and support the goals of municipal climate policies.

3.2 Resource-sharing platforms

Resource-sharing platforms allow individuals or businesses to access and use goods or services without the need for direct ownership. These platforms are based on the principles of circular economy, maximizing resource utilization and minimizing waste.

With the rise of digitalization, these systems have become even more accessible and efficient. Digital technologies enable easy user connection, transparent tracking of the movement and condition of shared resources, and the development of trust among participants. Resource-sharing platforms represent a key tool of the circular economy in the digital age, supporting sustainable consumption and innovative approaches to the use of materials and services.

SMEs and cities have the opportunity to contribute to the development of such a platform or to operate it entirely by themselves. At the same time, brick-and-mortar retailers might also serve as a contact point for these sharing services (e.g. as a pick-up point/storage facility for shared items or as a venue for swap events)

The pilot in Würzburg was specifically designed to link the Zukunftshaus as an existing physical sharing platform with online-booking of the resources and climate-neutral delivery.

3.2.1 Resource sharing as a sustainable practice in urban commerce

In the realm of urban commerce, resource sharing brings a wide range of benefits that help both the economy and the environment. Key advantages include:

- **Efficient resource use:** Shared items like tools, vehicles, or office spaces are used more efficiently, reducing the need for new or own resources.
- **Cost savings:** Sharing spreads costs for acquisition, maintenance, and storage among users.
- **Reduced environmental footprint:** Efficient resource use leads to lower material consumption, which in turn reduces waste and emissions associated with production and disposal.
- **Strengthened community collaboration:** Sharing fosters collaboration and trust, benefiting local economies and social ties.



3.2.2 Forms of resource sharing

Nowadays, there are various resource sharing offers. Some of these approaches were also applied in the NiCE pilot activities. The most common forms include:

- **Space sharing:** Underused spaces like offices or retail locations are shared, e.g., coworking spaces or shared shops. (e.g. pilot Graz, Ptuj, Brzeg Dolny)
- **Vehicle sharing:** Bikes, scooters, and cars are shared, promoting eco-friendly mobility and reducing private vehicle ownership. This model saves money and frees up space in congested city areas.
- **Tool and equipment sharing:** Tools or machinery used occasionally are shared, saving money and space. These services are increasingly popular in urban areas where space is limited. (e.g. pilot Würzburg)
- **Digital platforms for sharing:** Online tools simplify sharing, from lending books to exchanging professional skills.
- **Swap events:** People are meeting at a location and exchange items they no longer need, such as clothing, books, toys, or even furniture. Swap events can be organized by diverse stakeholders in public spaces, community centers, pop-up stores or via online platforms that support peer-to-peer exchange. They may also be accompanied by educational or awareness-raising activities. (e.g. pilot Jihlava, Würzburg)

3.2.3 Integrating digital tools for easier access to shared resources

Digitalisation is transforming resource sharing in urban areas. At the Zukunftshaus in Würzburg, it is also possible to reserve items for rent online. Further key areas of application can include:

- **Visibility:** Apps and maps help users find shared resources like community fridges or tool libraries.
- **Event coordination:** Digital tools streamline planning and promotion for reuse events.
- **Reservations:** Online systems allow users to book tools, spaces, or workshops.
- **Impact tracking:** Platforms measure the environmental benefits of sharing, like waste reduction or CO₂ savings.

For success, digital tools must be user-friendly, inclusive, and best compatible with other local and municipal digital services. Offline alternatives, such as printed materials or in-person



support, remain essential for accessibility. Finally, digital tools require clear operational support, maintenance, and the ability to evolve according to community needs.

3.2.4 Encouraging local communities to participate in resource-sharing schemes.

- Active community involvement is crucial for resource-sharing initiatives to thrive. Through NiCE, we gathered extensive experience in this area, particularly in the pilot activities in Würzburg, Graz, Ptuj, and Bologna.¹ Most important for citizen engagement in such activities are the following aspects: People are motivated when they see clear **benefits**, such as saving money, space, or time. Sharing also builds social connections and supports sustainable lifestyles.
- **Clear communication** is key. Simple messages like "Borrow instead of buying" work well, and real-life stories inspire participation.
- **Low-barrier activities**, like public lockers or community libraries, help people try sharing without hesitation.
- **Education and outreach**, such as workshops or school projects, can spark interest and teach sharing habits.
- **Digital tools** like apps and maps make sharing easier, but offline options ensure inclusivity for all.
- **Local coordinators, volunteers, and partnerships** with schools or community groups play a vital role in spreading awareness and building trust.
- By making sharing **accessible** and welcoming, communities can unlock its full potential for a more sustainable and connected urban life.

3.3 Integrating digitalization into processes to foster circular lifestyles

Digitalisation can play a crucial role in accelerating the transition toward circular lifestyles by connecting people, processes, and products in smarter and more transparent ways. In the context of sustainable e-commerce and urban circularity, digital tools enable citizens and

¹ For more details on stakeholder engagement, please refer to the NiCE "Methodology Kit on stakeholders' engagement in circular lifestyles".



businesses to adopt reuse, repair, and sharing practices more easily, while helping cities to manage resources more efficiently.

At its core, digitalisation transforms how communities interact with materials and services. Online platforms, apps, and databases make it easier to map available resources, exchange goods, and coordinate logistics. For example, reuse centres can **digitalise their inventory**, allowing citizens to browse available items online before visiting in person. Booking and reservation systems can streamline the lending of tools, furniture, or equipment, while digital payment and reporting tools increase efficiency and transparency. A practical illustration of this approach can be found in the pilot activity in Jihlava and its reuse centre Útulek větší, where digital tools were introduced to improve daily operations and community engagement (for more information see the case study in chapter 4.1).

Beyond reuse operations, **digitalisation can foster civic participation and collaboration**. Interactive maps and apps allow citizens to locate nearby reuse centres, repair cafés, or swap events. This gives them the opportunity to integrate circular practices into their everyday lives. Integrating digitalisation into circular processes therefore means **creating connected ecosystems**, where data, technology, and human action reinforce each other. It requires interoperability between local systems, open data standards, and **digital inclusion** to ensure accessibility for all residents. Transparent communication and user-friendly design are key to building trust and encouraging behavioural change.

Ultimately, digital tools are not an end in themselves but an enabler of circular lifestyles. When aligned with social engagement and community values, they can turn reuse centres, shared workshops, and local businesses into living examples of a **digital circular economy**, bridging the physical and online worlds while revitalising city centres as spaces of collaboration, creativity, and sustainability.



4 CASE STUDIES

The NiCE pilot activities dedicated to the topic of sustainable e-commerce in Jihlava and Würzburg were developed as part of a transnational tandem cooperation. Rather than being designed as isolated local interventions, the pilot activities evolved through continuous exchange, mutual learning and iterative feedback between the two partner cities.

This tandem approach enabled both sides to test, compare and refine their approaches to linking sustainable consumption, reuse systems and e-commerce solutions in urban environments. Insights from Würzburg, particularly in the areas of logistics, user experience and service accessibility, informed the development of the Jihlava pilot. At the same time, Jihlava contributed its experience with community-based reuse models and the operation of a local reuse centre, creating a complementary learning dynamic.

The final design of the pilots can therefore be understood as a jointly informed solution, shaped by transnational dialogue and validated through cross-evaluation processes involving other project partners.

In addition, both pilot cases were significantly influenced by a series of transnational study visits organised within the NiCE project. These visits provided hands-on insights into diverse circular economy initiatives across Central Europe and offered practical inspiration for the design and implementation of local pilot actions. They also created space for direct interaction with stakeholders and experts, further strengthening the knowledge base and transferability of the developed solutions.

4.1 The Reuse Recognizer tool in Jihlava, Czech Republic

4.1.1 About Silo Jihlava and the Útulek věcí reuse centre

Jihlava is the regional capital of the Vysočina Region, located on the historical Bohemian–Moravian border in the Bohemian-Moravian Highlands. With around 50,000 inhabitants and over 10,000 daily commuters, the city has been designated an urban heritage conservation zone since 1982.

In 2023, the grassroots community Silo Jihlava was founded in a former grain warehouse near the city centre. The community promoted local culture, education, and social engagement through about 70 cultural and community events annually, supported by 80 active volunteers.



Figure 1 Interior of Silo Jihlava reuse centre. Source: Útulek věcí.

The Útulek věcí reuse centre, jointly run by the Municipality of Jihlava and Silo Jihlava, operates on the city's outskirts in a former military warehouse. With an area of 400 m², five employees, and two opening days per week, it handles the collection, sorting, and sale of donated items, attracting around 50 visitors per opening day.

Together, Silo Jihlava and Útulek věcí form a strong base for circular-economy activities such as equipment rental, support for low-income residents, and zero-waste or educational events (e.g. swaps and workshops). This combination of community-based activities and reuse services became a key point of exchange within the tandem cooperation, where Jihlava contributed its experience with community engagement and social activation.

Operationally, the reuse centre faces staff shortages in sorting, pricing, and record-keeping. Around 250 kg of items arrive within hours of opening, each requiring documentation upon arrival and sale, estimated to take about 500 hours annually. These operational challenges were further analysed and validated through cross-evaluation activities within the NiCE project, providing additional insights into efficiency gaps and opportunities for digitalisation.

4.1.2 The pilot idea and objectives of the initiative

Within the digitalisation and e-commerce tandem of the NiCE project, the Jihlava pilot project focused on facilitating record-keeping in reuse (second-hand) operations using the **Reuse Recognizer tool**.

The design of the pilot was continuously refined through exchange with the tandem partner, particularly in relation to the role of digital tools in improving service efficiency and user



accessibility. The solution thus reflects a jointly developed approach that combines local reuse system needs with insights gained from transnational comparison and testing.

Leveraging artificial intelligence enables the identification, classification, and documentation of items both at intake (1st level) and at distribution (3rd level). For reuse operations, it can serve for reporting needs toward the national umbrella organisation for reuse centres, the Federation of Reuse Centres and Furniture Banks (Reuse Federation), toward the city of Jihlava, for tracking the turnover of public collections, and for communication with the public. With the forthcoming obligation for EU Member States to report national reuse volumes to the European Commission, the pilot project's ambition is to create a tool that will make this reporting easier.

The pilot involved a wide spectrum of stakeholders, including:

- SILO Jihlava z.s. – reuse center operators
- Federation of Reuse Centres and Furniture Banks
- Municipal Authority of the City of Jihlava
- Czech Invest – Agency for Business and Investment Support

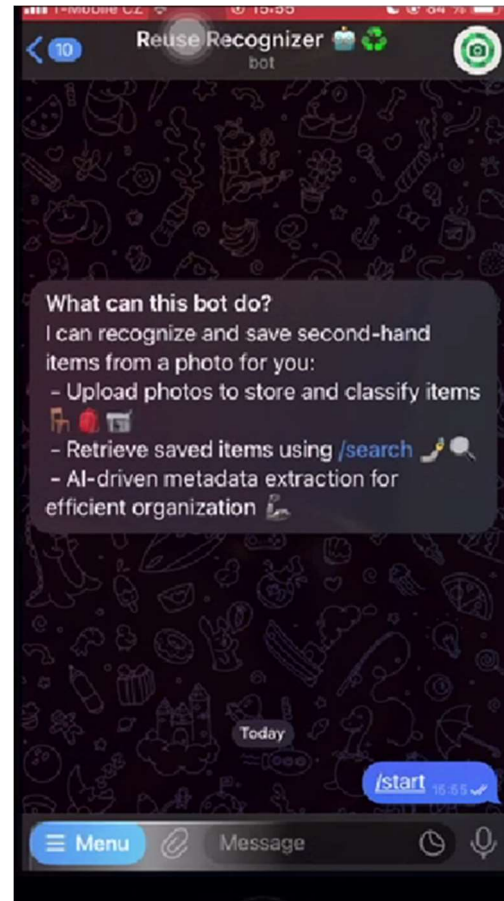


Figure 2 Reuse Recognizer. Source: Útulek věcí

The Reuse Recognizer tool is an AI-based system for recognising, categorising, and valuing items from photos and was developed to accelerate record-keeping, enable data export, and prepare integration with online sales and a potential national reuse registry. The emphasis on future integration with online services was influenced by discussions within the tandem, where the importance of convenience and digital accessibility for users was highlighted. Finally, the tool was also tested in connection with Extended Producer Responsibility (EPR) for furniture. A new website, reusejihlava.cz, now provides information about services, opening hours, and practical details for the public reflecting the broader ambition to connect reuse services with digital communication channels, as discussed within the transnational cooperation.



The pilot project also linked community activities with digitalisation. The Reuse Days in 2024 and 2025 featured swaps, workshops, repair demonstrations, and a fashion show of upcycled textiles, raising awareness of reuse and strengthening community ties. This strong community dimension complemented the more technology-oriented approaches explored within the tandem, highlighting the need to combine digital and social innovation. In 2024, four swap events were held, followed by seven in 2025.

Coordination among stakeholders was ensured by the Local Advisory Board, which connects the city, Silo Jihlava, NGOs, and public institutions. The tandem with Würzburg facilitated continuous knowledge exchange in digitalisation, e-commerce, and volunteer engagement, while also enabling iterative feedback on the pilot design and testing of different approaches in both cities. In addition, insights from transnational study visits across the NiCE partnership provided practical inspiration for both the digital and community-related aspects of the pilot design.

4.1.3 Successes and outcomes

The Reuse Recognizer significantly streamlines record-keeping. Under “paper-based” records, each individual item had to be written down and weighed manually, alternatively object weight coefficients established by the Reuse Federaton were used. The transition from manual to digital record-keeping was also a key topic of exchange within the Jihlava–Würzburg tandem, where different approaches to data management and service efficiency were compared.

Currently, the Reuse Recognizer offers:

- Automatic object recognition using AI (Google Gemini) based on user-submitted images, in real time.
- Management and categorisation of items by type, material, and other properties in JSON format.
- Storage and management of data on items, photos, and users via Firebase (Firestore, Storage) and export to XLS.
- Assignment of users to locations (specific reuse operations).
- User interface via Telegram (desktop and mobile): uploading photos, displaying item properties, searching items, marking items for distribution, and exporting data.
- Administrator functions for system and user management.



Several of these functionalities reflect insights gained through transnational exchange, particularly the emphasis on real-time processing, user-friendly interfaces and the potential for integration with online services.

Main success factors of the tool are:

- Increased accuracy of weight estimation compared to object-weight coefficients
- Automatic categorization and object description facilitating data entry to the online marketplace
- Second-hand item price estimation facilitating pricing for unique items
- Omitting need to transcribe paper evidence into digital form

The relevance of these features was further confirmed through cross-evaluation within the NiCE partnership, highlighting their potential applicability in different operational contexts beyond Jihlava.

4.1.4 Challenges

The tool currently allows data entry solely on the basis of a photograph. However, feedback from Útulek věcí's operations indicates a need to simplify data entry for common/ frequent/ numerous items for example, jars, small items, or books. In such cases, the reuse operation does not need to photograph each item individually. The solution will be to add a function for entering data for common items via text or buttons and to use coefficients to estimate weight. Similar operational challenges were identified and discussed within the tandem cooperation, confirming that simplification of data entry is essential for the practical usability of digital tools in reuse operations.

At present, data can be edited only by the system administrator. Operational feedback shows a need for user-level data editing, for example for adjusting descriptions and classifications and, where applicable, flagging errors – being in line with the feedback received from project partners within the cross-evaluation. The solution will be to add relevant function to the next version of the tool.

Another challenge is slow data processing. The solution will be to display item properties only on demand and to add intake/distribution modes.

Addressing these challenges will be crucial not only for local implementation, but also for the transferability of the solution to other cities, as discussed within the transnational partnership.



4.1.5 Lessons learned

The Reuse Recognizer quickly became an integral part of reuse centre operations, reduced errors, saved time and costs, and improved data quality for local and future European reporting, with its relevance further supported by comparison and feedback within the Jihlava–Würzburg tandem.

Equally important was the social component: Reuse Days, swaps, and educational workshops promoted reuse activities in the city. A technology without community work would have only a limited impact. This insight was reinforced through transnational exchange, where different pilot approaches highlighted the need to balance technological solutions with strong community engagement. Engaging governance through the Local Advisory Board and the international tandem accelerated learning, enabled iterative feedback between pilot cities, helped align stakeholder expectations, and inspired further refinements to both the tool and the reuse centre operation.

The main challenges lay in infrastructure (capacity and location of premises, unsolved ownership), maintaining long-term public interest, and establishing new routine processes for staff – challenges that were also reflected in discussions with other project partners.

An unexpected benefit is the tool's applicability for Extended Producer Responsibility (EPR) and the growing interest from other cities, which confirms its replicability when the local context is respected.

These insights directly inform the strategies and concepts presented in Chapter 3, particularly regarding the integration of digital tools, community engagement and hybrid service models.

4.1.6 Guidance for replication

The following guidelines build on the lessons learned from the Jihlava pilot and their validation through transnational exchange, tandem review and cross-evaluation.

Who can benefit from this solution

This solution is relevant for:

- municipalities aiming to develop reuse systems,
- reuse centres and second-hand operators,
- NGOs and community organisations promoting circular lifestyles,
- partnerships combining public, social and environmental innovation.



Key prerequisites and success factors

The pilot experience in Jihlava highlighted several key conditions and success factors that should be considered when replicating similar solutions in other cities:

- A supportive policy framework is essential, recognising reuse as part of local waste management and circular economy strategies.
- Accessible infrastructure must be ensured, including adequately equipped spaces for reuse activities.
- Strong institutional backing from the outset, particularly from municipalities, is crucial for ensuring coordination, legitimacy, and long-term sustainability.
- Active stakeholder cooperation, including operators, public authorities, and community actors, plays a key role in building trust and enabling effective implementation.
- Combining digital and social innovation (technology together with community engagement) significantly increases the overall impact and acceptance of the solution.
- A gradual and flexible implementation approach, starting with a limited scope and expanding over time, proved effective in adapting the solution to local needs and capacities.
- Financial sustainability should be addressed from the outset to ensure long-term viability.
- The potential integration with e-commerce and Extended Producer Responsibility (EPR) systems can further strengthen the relevance and scalability of the solution.

Transferability

As highlighted in the cross-evaluation, the solution appears relatively easy to replicate, provided that local conditions are respected. Core elements (digital tools, community engagement formats and cooperation models) are transferable, but must be adapted to local policy frameworks, infrastructure and user needs.

In practice, successful replication depends on combining digital innovation with strong community engagement, securing institutional support early on, and implementing solutions in a gradual and flexible manner.

Link

Silo Jihlava: <https://www.silojihlava.cz/>



4.2 Green delivery for rented items in Würzburg, Germany

4.2.1 About Würzburg and the Zukunftshaus

Würzburg, a historic city in northern Bavaria with around 130,000 inhabitants, is well known for its prestigious Julius Maximilian University and lively student scene. The city demonstrates a strong commitment to sustainability, having integrated circular economy principles into its Climate Protection Concept and supported initiatives such as the “Einmal ohne, bitte” campaign to reduce disposable packaging. Despite these progressive steps, Würzburg faces several urban challenges common to many European cities, including the decline of traditional retail in the city centre, the need for innovative mobility and logistics solutions, and the ongoing task of revitalising central urban areas. The city’s forward-looking attitude is further reflected in the election of a Green Party mayor and its ongoing support for sustainability initiatives, making Würzburg an ideal setting for piloting new approaches to sustainable consumption.



Figure 3 The Zukunftshaus from the outside. Source: Zukunftshaus.

The Zukunftshaus Würzburg (“House of the Future”) which opened in 2022 provides an innovative response to key challenges: making sustainable consumption accessible in everyday life and combining various forms of sustainable consumption under one roof.

The Zukunftshaus brings together four distinct services:



- **Purchase** of sustainably produced everyday and utility goods
- **Rental** of items for occasional use
- **Exchange** and donation of items that are no longer needed
- **Repair** of defective (electrical) devices

A lifestyle that actively incorporates all four areas offered by the Zukunftshaus is not only particularly sustainable, but also time-saving and no more expensive than a conventional lifestyle focused on frequent purchases and disposals. By renting, exchanging, and repairing products and devices, both the environment and personal finances benefit.

The Zukunftshaus is implemented by Zukunftshaus eG (a registered cooperative) and the non-profit Zukunftswerk e.V. (a registered association). Covering an area of around 200 m² in the heart of Würzburg's city centre, the four areas are open to all interested parties on weekdays from 10:00 to 18:00. The exchange section is managed by Zukunftswerk e.V. with the support of over 40 volunteers, while the purchase, rental, and repair sections are overseen by Zukunftshaus eG with five permanent staff and four regular volunteer repairers.

The concept of the Zukunftshaus focuses on sustainability. At the same time, its broad range of services contributes to revitalising and enhancing the attractiveness of city centres. In particular, the services of renting, repairing, and exchanging are difficult or impossible to offer online with the same simplicity as at the Zukunftshaus. The combination of all four areas in a single location is also unique and represents a genuine innovation.

4.2.2 The pilot idea and objectives of the initiative

The pilot initiative of Zukunftshaus Würzburg within the NiCE project set out to bridge the gap between sustainable e-commerce and the physical city centre. Its primary goal was to support and promote sustainable consumption models, such as renting and repairing goods, by demonstrating how e-commerce and city centre retail can complement and strengthen one another. By introducing a bicycle-based delivery service, the project aimed to reduce emissions and address the environmental impact of the "last mile" in urban logistics. In addition, the initiative sought to foster a circular economy mindset among residents and to make the city centre more attractive and liveable by integrating innovative business models into everyday urban life. The design of the pilot was continuously refined through exchange with the tandem partner. The activity thus reflects a jointly developed approach that combines circular lifestyle offers with a climate-neutral delivery service.



Beyond the transnational tandem cooperation, the pilot brought together a diverse group of stakeholders, including²:

- adelphi (think-and-do tank, consulting Zukunftshaus eG during the pilot)
- Citizens and customers of the Zukunftshaus
- City of Würzburg (Economic Development Department and city representatives)
- Julius Maximilian University of Würzburg (WUE-Lab)
- Radius (local bicycle courier service)
- UBA (German Environment Agency, project lead and coordinator)
- Zukunftshaus eG (cooperative managing the sustainable department store)
- Zukunftswerk e.V. and memo Stiftung (local NGOs and foundations)

To achieve its objectives, the pilot introduced a bicycle delivery service for rental and repair items, making these sustainable consumption options more accessible to residents both within and beyond the city centre. Orders for rental items could be placed through the Zukunftshaus website, bringing convenience and flexibility to users. The project team fostered collaboration and engagement by organising ideation workshops, advisory board meetings, and regular



Figure 4 Launch of the cooperation between Radius and Zukunftshaus. Source: Zukunftshaus.

coordination sessions among all partners, including meetings and on-site visits with the tandem partner. A variety of public launch events, participation in street festivals, and targeted promotional campaigns, such as voucher distributions and social media outreach, were used to raise the profile of the new service. Additionally, direct outreach to customers in-store and

² In alphabetical order



local surveys helped to gauge interest, understand user needs, and refine the service offering over time. The topic of outreach and social media advertising has been specifically discussed within the tandem to compare approaches, develop solutions, and leverage synergies.

4.2.3 Successes and outcomes

The pilot succeeded in establishing an innovative service that effectively connected online ordering with local, circular economy practices in Würzburg. By facilitating strong cooperation among local actors, the project raised public awareness of sustainable consumption, repair, and rental options. Events like the bicycle-powered cinema and active participation in local festivals captured the public's imagination and drew significant community engagement. The project also paved the way for new/ further cooperations between all involved city stakeholders. At the end of the last advisory board meeting, all partners expressed interest in continuing the collaboration. First ideas were about events during the local action "Stadtradeln" in May 2026. Furthermore, the pilot served as a valuable testbed for new business models and helped to strengthen local networks, laying the groundwork for future sustainability initiatives in the city.

4.2.4 Challenges

Despite the positive feedback received from surveys, the actual uptake of the bicycle delivery service remained very low, with only a single recorded user during the pilot period. This situation and the reasons behind it were discussed with both local partners and the tandem partner to learn from it as effectively as possible.

Several factors contributed to this limited adoption, including the absence of a convenient online payment system, higher-than-expected delivery fees, and the lack of same-day delivery options. The closure of the initial courier partner (Wü-Livery) necessitated the search for a new partner (Radius), which brought increased costs and logistical constraints. Many customers continued to prefer in-person visits for rentals and repairs, which diminished the appeal of the delivery option. Even financial incentives, such as vouchers and reduced fees, did not lead to a significant increase in service usage. Pricing management was also a key focus of the cross-tandem evaluation and was identified as a particularly significant challenge. All these challenges underscored the importance of robust digital infrastructure and a seamless customer experience for similar initiatives in the future.



4.2.5 Lessons Learned

The pilot experience highlighted that convenience and affordability are essential for the successful adoption of sustainable delivery services. Starting with free or discounted delivery may help to build a user base and encourage trial. Integrating online payment and booking systems is crucial for scaling such services and meeting user expectations.

The importance of personal interaction, particularly for rental and repair services, suggests that hybrid models, that combine digital and face-to-face elements, may be most effective. The collaboration among diverse stakeholders proved invaluable, fostering innovation and resilience even in the face of limited initial uptake.

The discussion within the NiCE project consortium and results of the cross-tandem evaluation suggest that similar future initiatives could think about a more specialized offer and its promotion to specific market niches. This could be for example, the rental of specific categories of items by university students in contexts similar to Würzburg or particularly large, heavy, or fragile items, thus allowing the service to better showcase its added value. These options could be worth experimenting with, possibly in parallel with a more general offering, both in terms of services offered and target audience.

Ultimately, the project generated valuable insights and strengthened local networks, providing a strong foundation for future efforts to revitalise city centres through sustainable, circular economy models.

4.2.6 Guidance for replication

The following guidelines build on the lessons learned from the Würzburg pilot and their validation through transnational exchange, tandem review and cross-evaluation. The pilot activities were focused on rental and repaired goods. It is also possible to apply the bicycle-delivery-service to sustainable produced products.

Who can benefit from this solution

This solution is relevant for:

- City-center retailers looking to expand their offerings beyond physical locations
- Local bicycle couriers seeking to explore new business opportunities
- Cities aiming to strengthen sustainable consumption and logistics
- NGOs and initiatives working to make rental services and repair options accessible beyond city centers.



Key prerequisites and success factors

The pilot experience highlighted several key conditions and success factors that should be considered when replicating similar solutions in other contexts:

- A supportive policy framework is essential, recognising climate-neutral logistics and circular lifestyle offers as part of broader climate neutrality and circular economy strategies
- The availability of a local climate-neutral (e.g. bicycle-based) delivery partner is crucial. To ensure affordability, (initial) financial support from the city may be necessary.
- Appropriate digital infrastructure for ordering and online payment is important. Cooperation with local ICT actors, such as universities, can support development and offer additional innovation potential.
- Strong stakeholder cooperation and committed partners, including close collaboration with the city administration, are key to successful implementation and coordination.
- A gradual and flexible implementation approach proved effective, allowing the service to adapt to changing demand and operational conditions.
- Combining e-commerce logistics with circular lifestyle offers increases the attractiveness and overall impact of the solution.
- In the initial phase, offering the service free of charge can help attract users, build awareness, and encourage adoption.

Transferability

If the right conditions (as described above) are in place, this solution is fundamentally easy to transfer to other locations, since it does not require specialized expertise or maintenance skills. This has been confirmed during the cross-tandem evaluation as well.

Core elements (repair and renting offers, a local bicycle delivery service, community engagement formats and cooperation models) are transferable, but must be adapted to the respective organisation/ retailer, local policy frameworks, infrastructure and user needs.

In practice, successful implementation depends on the three key factors: Convenience for users, clear added value for the target audience and appropriate pricing. Implementing should be in a gradual and flexible manner. To boost adoption, it's essential to complement the service with supporting measures such as events, workshops, and social media campaigns.



Link

Zukunftshaus Würzburg: <https://www.zukunftshaus-wuerzburg.de/>

4.3 Further good practices

4.3.1 Platoyo - seamlessly merging online and offline retail

Platoyo is an omnichannel platform that supports retailers in bridging the gap between online and offline commerce. Today, more than 3,000 retailers use Platoyo to manage over 25 million products across 30 platforms in five countries (Platoyo 2025). This reach illustrates how local businesses can stay competitive and visible in an increasingly digital world.

At its heart, Platoyo offers a flexible, all-in-one Software as a Service (SaaS) solution for professional omnichannel platforms. Retailers can set up online marketplaces, manage real-time product availability, and connect their physical shops with digital sales channels. The system handles everything from product data import and payment processing to logistics. Thanks to its AI-powered technology, even complex projects can be implemented quickly and with minimal technical risk.

For customers, this means a seamless shopping experience. They can check what's in stock locally, reserve items for in-store collection, or opt for home delivery. The platform supports the increasingly common "Research Online, Purchase Offline" (ROPO) behaviour, which blends the best of both worlds, convenience and personal service.

Platoyo's omnichannel approach helps address the challenges faced by city centres, such as declining foot traffic and competition from global e-commerce giants. By making local inventory visible online and offering flexible fulfilment options, Platoyo enables retailers to reach new customer segments and build trust through their physical presence. Features like click-and-collect, local delivery, and bundled pick-up points not only make shopping easier but also reduce the environmental impact of last-mile logistics.

The platform itself is packed with over 250 features, including payment processing, order splitting, and product data management. Retailers don't need to invest in their own IT infrastructure, as Platoyo is ready to use and scalable. Frequent updates ensure that the platform remains user-friendly and secure.

By providing a reliable link between digital and physical retail, Platoyo helps revitalise city centres and supports local economies. The platform's flexibility also allows for new business models, such as shared marketplaces and collaborative logistics, which further strengthen



urban retail. In summary, Platoyo demonstrates how thoughtfully applied digital tools can help local businesses thrive while keeping city centres vibrant and relevant. It’s a practical example of how online and offline retail can complement each other, rather than compete.

Link Platoyo: <https://platoyo.com/>

4.3.2 RepairSYS by Opravárna - The digital platform for repair

RepairSYS is an innovative Czech digital platform developed by Opravárna s.r.o., designed to connect customers, manufacturers, and local repair technicians into one efficient system for managing product repairs.

Its main goal is to extend the lifespan of consumer goods and thereby reducing the volume of electronic waste. But also reduce waste by simplifying the entire process of reporting and handling service requests as well as minimizing emissions through optimized technician routes, and supporting local entrepreneurs, like smaller repair companies and individual service providers. The platform connects online repair services with local environments and thus strengthen circular practices in product use.

Through automation, data management, and network optimization, RepairSYS enables manufacturers and retailers to manage warranty and post-warranty repairs more efficiently,

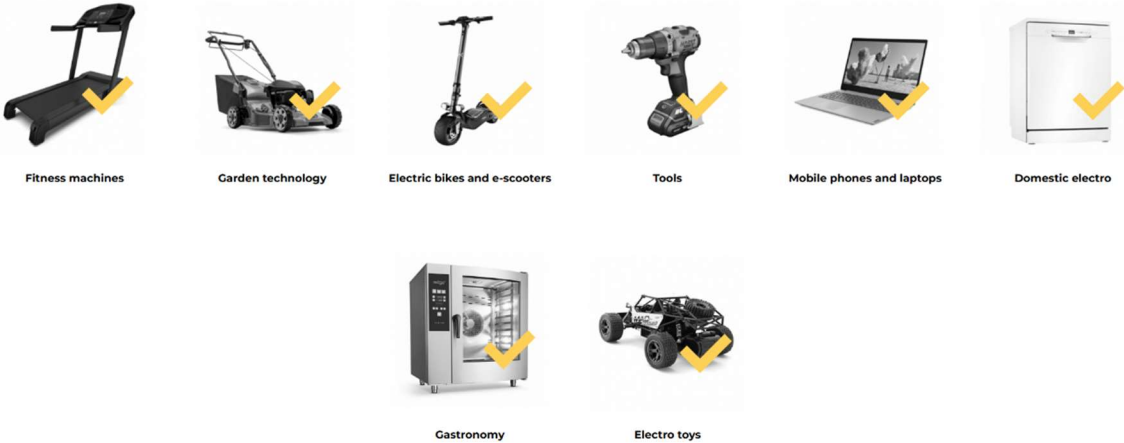


Figure 5 Product repair spectrum. Source: repairsys.eu.

while allowing local service providers to receive digital repair orders directly from nearby customers.



The platform operates across the Czech Republic, particularly in larger cities and regions with a high concentration of manufacturers and retailers of consumer goods. Urban areas are often faced with typical challenges such as high production of electronic waste, limited access to quality post-warranty repair services, and the need to reduce emissions associated with transporting products to service facilities. Within this context, RepairSYS delivers innovative solutions that align with the principles of the circular economy and promote sustainability. The digitalization of the entire process simplifies and speeds up order management, increases transparency, and reduces administrative burdens for all participants.

A wide range of actors is involved in the system’s operation. The key player is Opravárna s.r.o., which manages the RepairSYS platform. It cooperates with major manufacturers and

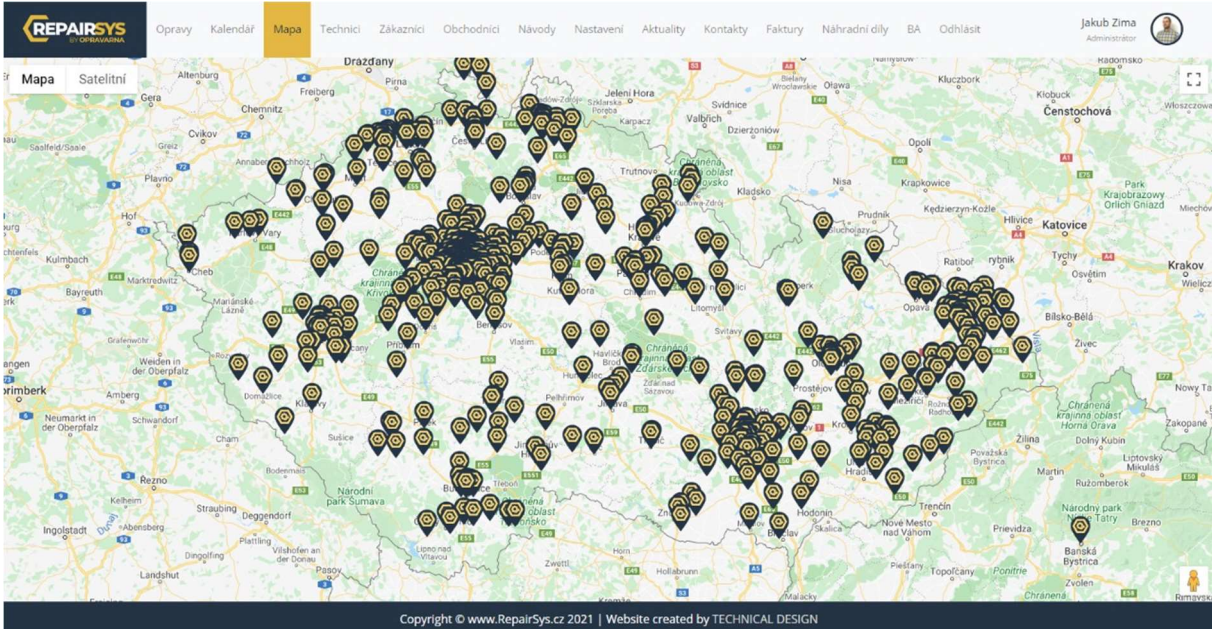


Figure 6 Map of partners. Source: repairsys.eu.

importers such as Alza, Decathlon, and Bauhaus, while also engaging a network of local repair technicians and small businesses connected through the platform. The end customers who use its services are an equally important part of the system.

The operation of the platform is based on the RepairSYS software, which enables online dispatching and real-time order tracking. The system shares technicians’ capacities across regions, optimizing routes and reducing transport-related emissions. It also supports cooperation with local repair businesses and offers the option of on-site repairs through so-called pop-up services. Integration into partners’ websites and connections via application programming interfaces (APIs) ensure smooth linking with corporate systems.



The platform also enhances product reparability through technician training and video diagnostics and involves hundreds of repair specialists and small companies in the circular model.

Nevertheless, the introduction of the system has also presented several challenges. These include logistical difficulties during peak order times, a diverse product portfolio, occasional reluctance from some manufacturers to engage in open repair cooperation, the need for continuous technician training, and regional differences in the availability of quality repair capacities.

Experience so far shows that a digital platform can make repair services significantly more efficient and sustainable compared to traditional models. The success of the project depends primarily on close cooperation with local partners, shared capacities, and transparent communication with customers, which helps build trust. The RepairSYS model has strong potential for replication in other cities and countries, provided there is a sufficient network of technicians and support from manufacturers.

Link to RepairSYS: <https://www.repairsys.eu/en/>

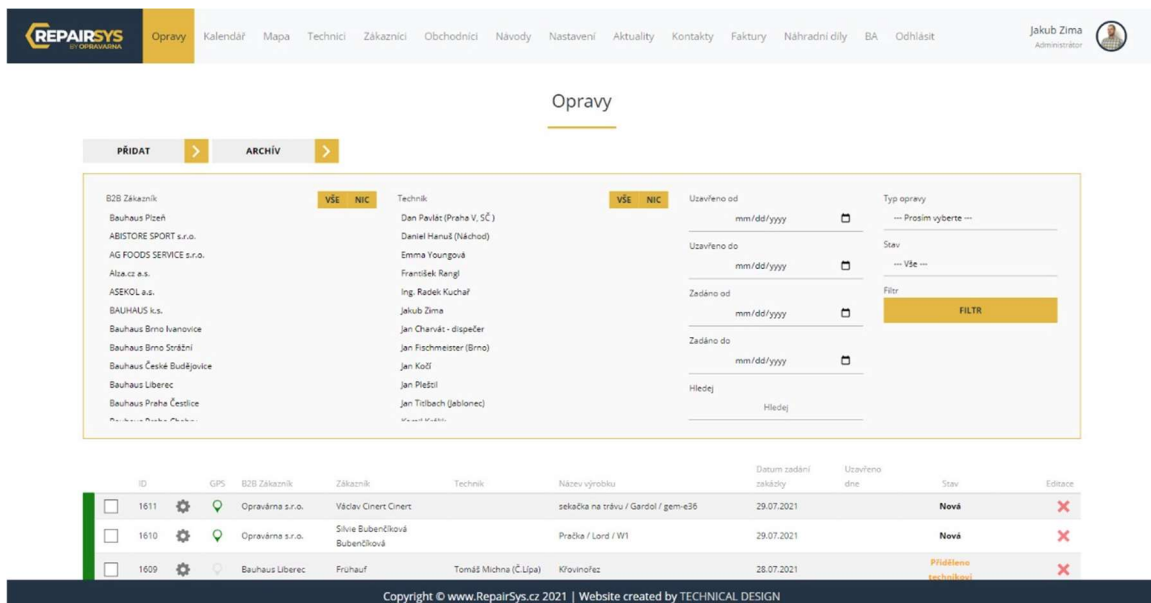


Figure 7 Repairsys custom system. Source: repairsys.eu.

4.3.3 Library of Things

A Library of Things, sharing library or a hire shop are services similar to a library, but not for books, but for objects, like tools, clothing or instruments. This can be offered and operated by a community, a company (like a hardware store), an NGO, or actually the municipal library.



From the operator's perspective, the core task is the efficient management of a shared inventory that is accessible to residents, groups and small and medium-sized enterprises (SMEs). Digitalization and an online platform can help in the following areas in particular: reservations, payments, and user communication. While local collection points manage the physical issuing and return of items, including inspection, cleaning, and maintenance.

At the heart of the operation is a well-maintained catalogue of items, which the operator must regularly update and adjust based on user demand. Each item should have an assigned life cycle, and the operator tracks its wear, frequency of use, and servicing costs. This allows the operator to determine when an item needs repair, replacement, or removal from the inventory. Staff at collection points also require training to ensure that items are checked correctly, that users receive basic safety instructions, and that general maintenance tasks are completed to keep the inventory in good condition.

Operational management also involves planning and logistics. To keep the service running smoothly, the operator needs a clear overview of item availability, return schedules, and the condition of each product. A digital platform can help to automatically monitor availability calendars, send reminders for return dates, and allow users to see real-time availability. This minimises reservation conflicts and ensures a steady turnover of equipment.

Library of Things can also collaborate with local institutions and community organisations, building a user network that shares values of sustainability and responsible consumption. This approach gives the operator the opportunity not only to manage inventory but also to help cultivate a sense of community around shared resources. For SMEs, the service offers a flexible way to access equipment for specific projects or short-term needs without major upfront investment.

From a business perspective, the model can be sustainable, for example due to a combination of membership fees, rental income, and partnerships with local organisations. This financial structure allows the operator to invest in inventory renewal, platform development, and the expansion of new collection and pick-up points. Library of Things thus represents a managed system for sharing equipment that reduces material consumption while providing a practical and cost-effective service for households and businesses alike. In addition, it offers SMEs, initiatives, or municipalities the opportunity to add another service to their business portfolio. This can strengthen local locations and may help to even open up additional locations (as pick-up points) in the city center.

Link to Library of things: <https://www.libraryofthings.co.uk/>



4.3.4 Food waste reduction platforms

Online platforms and apps can also help prevent food waste. There are various forms:

- connecting private individuals with each other: e.g. Olio, UXA, Neshněno
- connecting citizens with cafes and restaurants: e.g. TooGoodTooGo
- associations dedicated exclusively to the goal of food rescue: e.g. foodsharing
- online shops selling expired but still edible food: e.g. Motatos, Sirplus, Neshněno

Connecting citizens with cafés and restaurants via an online platform helps food businesses, grocery stores, and other retailers reduce food waste by selling surplus but still perfectly edible products at a discounted price.

At TooGoodTooGo, for example, the system combines a simple digital interface with an efficient, low-effort process at the physical location. Businesses create so-called “Magic Bags” in the app: mixed packages filled with items or meals that remained unsold at the end of the day. Customers purchase the bag in advance through the application and pick it up at the store or restaurant during a specified time window. This allows businesses to plan inventory more accurately and significantly reduce the volume of food that would otherwise be discarded.

The platform is designed to be operationally straightforward. The operator only enters the number of available bags and the pick-up time. The app automatically manages everything else, including promotion, payments, and communication with customers. As a result, businesses do not need to invest additional effort in marketing or direct coordination with individual buyers. The platform centralises the entire process and provides a steady flow of new and returning users. Too Good To Go also offers analytics tools that help businesses track the amount of food saved and the financial benefits achieved.

Operationally, the service is advantageous because staff members do not need to prepare exact, standardised packages far in advance. The content of each bag simply reflects the surplus of that particular day, making the process easy to integrate into everyday operations. Businesses can adjust availability, temporarily pause offers, or scale up during busy seasons. This makes Too Good To Go suitable for small cafés as well as large retail chains seeking a structured approach to managing food surplus. It is therefore a good example of how digitalisation can support circular economy principles in the food sector and how cafes and restaurants can further strengthen their location in the city center with this offer.



There are also local initiatives such as the Czech platform Nesnězeno, which operates on a similar principle. In addition to connecting customers with restaurants' surplus meals, Nesnězeno has also introduced an online shop offering long-life foods that are approaching their minimum shelf-life date at reduced prices.

Links:

- <https://www.toogoodtogo.com/>
- <https://shop.nesnezeno.eco/>



5 TOOLS AND RESOURCES FOR IMPLEMENTATION SUPPORT

This chapter presents a selection of practical tools and resources that can support the implementation of the strategies outlined in Chapter 3. The tools are grouped into three main categories: inspiration and best-practice databases, guidance and knowledge tools, and space-based solutions. Together, they provide both conceptual support and practical options for cities and businesses seeking to link e-commerce with sustainable urban development.

5.1 Inspiration and best-practice databases

5.1.1 Stadtimpulse - project database for best practices

Stadtimpulse (City Impulses) is Germany's first nationwide, certified project pool for vibrant cities, town centres, and regions. It offers proven and tested solutions to address the current and future challenges facing our inner cities and local centres. The platform presents successfully implemented projects that have achieved tangible local results. It serves as a genuine best-practice toolbox for urban revitalisation.

The project pool is aimed for cities and municipalities, as well as for businesses and organizations operating in urban centres. It features many best-practice examples on online retail and digitalisation, which you can easily find by searching for keywords such as “online,” “e-commerce,” or “digital.”

The Stadtimpulse project pool has been active since 2021. It was launched by an alliance of leading professional associations and institutions representing cities and municipalities in Germany and is supported by these and other partners. Among them are the German Retail Association (HDE), the German Association of Towns and Municipalities (DStGB), the Federal Association of City Marketing Germany (bcsd), and the German Association of Cities (Deutscher Städtetag). The project pool is managed and coordinated by CIMA Consulting and Management.

The website is only available in German language. However, as it is provided in an online format, you can use your web browser's automatic translation feature to view each chapter in your preferred language.

Link to the project pool: <https://unsere-stadtimpulse.de/projektpool/>



5.1.2 URBACT Good Practices database

The URBACT Good Practices database presents a wide range of successful urban initiatives from European cities, including projects related to circular economy, local commerce, digitalisation, and community engagement. It offers proven and tested solutions addressing current urban challenges and supports cities in developing innovative and sustainable approaches to urban development. The platform showcases implemented projects that have delivered tangible results and can serve as a practical source of inspiration for replication in other local contexts.

The database is aimed at cities and municipalities, as well as at organisations, practitioners, and stakeholders involved in urban development and local economic initiatives. It includes numerous examples relevant to sustainable e-commerce, reuse, sharing models, and the integration of digital tools in urban environments. Projects can be explored through thematic categories and keywords, making it easy to identify relevant practices.

The URBACT programme has been supporting knowledge exchange and capacity building among European cities for more than 20 years. The Good Practices database builds on this experience by collecting and disseminating transferable solutions from across Europe. It is managed by the URBACT Secretariat and funded under the European Territorial Cooperation framework.

Link to the database: <https://urbact.eu/good-practices>

5.2 Guidance and knowledge tools

5.2.1 UBA Guide for Sustainable E-Commerce

This digital guide shows online retailers how to make their offerings as environmentally friendly as possible. There is especially potential for ecological optimisation in areas such as shipping and packaging, delivery and returns, product selection and information, as well as in the technical implementation and web design of the online shop.

The guide is primarily intended for SMEs and individuals planning to establish an online shop, to support them in integrating ecological considerations into their business model. The other target group are dedicated and interested operators of online shops and marketplaces, who are provided with options for implementing environmentally sustainable practices in their operations.



The guide was published by the German Environment Agency (UBA) in 2022 as part of a research project conducted in cooperation with the Institute for Environmental Strategies and Policy (Ökopol). The guide is only available in German language. However, as it is provided in an online format, you can use your web browser's automatic translation feature to view each chapter in your preferred language.

Link to the guide: <https://www.umweltbundesamt.de/themen/wirtschaft-konsum/leitfaden-fuer-mehr-umweltfreundlichkeit-im>

5.2.2 Quickstart Online

Quickstart Online is a free knowledge portal on e-commerce. It helps small and medium-sized retailers quickly find the right digital approach. Their free online courses answer key questions such as where to start and which type of e-commerce fits which retailer. In addition, the platform offers articles about success stories and networking events.

The platform is provided by the German Retail Association (HDE), Merchants Helping Merchants, and Amazon's "Entrepreneurs of the Future" initiative.

The website is only available in German language. However, as it is provided in an online format, you can use your web browser's automatic translation feature to view summaries of each video in your preferred language.

Link to the knowledge portal: <https://quickstart-online.de/>

5.2.3 Guide for going Omnichannel

The 'Going Omnichannel - A Guide to Expanding Your Ecommerce Business Beyond Your Website' guide explores what true multi-channel integration entails, the benefits and ROI of going omnichannel, and case studies and tips you can use to go all in on growing your omnichannel empire.

The ebook is for any online brand or retailer who is ready to go omnichannel and grow their e-commerce business beyond their e-commerce store. It is provided by Plytix, a Danish company specializing in Product Information Management (PIM) software tailored for small and medium-sized businesses (SMBs).

The ebook is in English language.

Link to the guide: <https://www.plytix.com/resources/going-omnichannel>



5.3 Space-based solutions

5.3.1 The Storefront

Storefront is an online platform that offers short-term rentals of retail spaces, such as shops, showrooms, pop-up stores, galleries, or event venues.

Users (including brands, e-commerce businesses, designers, and artists) can easily search for spaces by city, rental duration, or event type, and rent them for just a few days or weeks without committing to a long-term lease.

The platform enables companies to test new markets, showcase products or services in a new environment, or host temporary events. All without the need to invest in their own physical store.

Link: <https://www.thestorefront.com/>

5.3.2 WeWork

WeWork is a platform offering coworking spaces for companies, freelancers, and teams, including shared offices, individual workspaces, meeting rooms, and fully equipped private offices.

Through the website, users can easily find suitable spaces based on location, team size, or rental duration. WeWork enables flexible working arrangements: businesses and individuals don't need long-term leases, can start with a smaller team, and can adjust their workspace as needed. The service is especially helpful for start-ups, small companies, or project teams looking for a professional office environment without having to invest in their own physical space.

Link: <https://www.wework.com/>



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