Sustainable Tourism in Nordic Harbour Towns

Project Report and Handbook for Municipal Innovation

Nordic Innovation

Sustainable Tourism in Nordic Harbour Towns

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For more information please visit:
www.nordicinnovation.org/harbortowns

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Donkey Republic
Cruncho
GRIN
Viggo

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Nordic Innovation

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Foreword

Nordic Innovation is an organisation under the Nordic Council of Ministers with the aim to make the Nordics a pioneering region for sustainable growth by promoting entrepreneurship, innovation and competitiveness in Nordic businesses.

In recent decades the tourism industry has been growing rapidly in the Nordic countries with more and more tourists visiting the region. This presents new possibilities and challenges. Consequently, the topic has been high on the agenda of the Nordic Council of Ministers. The tourism sector is important because it affects multiple parts of the economy with more societal impacts than many other sectors of the economy.

Nordic Innovation is running a special initiative called Tourism in the Nordics that aims to facilitate Nordic cooperation on innovation in the tourism industry, and contribute to a more environmentally, socially, and economically sustainable industry. Activities under the program have focused on the development of new sustainable business models and innovative digital solutions.

This initiative builds on a previously funded pre-project, focused on Nordic harbour towns and the cruise industry. Organising a project focused on tourism in harbour towns and cruise tourism in the midst of a global pandemic with travel restrictions and shut-down of the cruise industry is a significant challenge. As can be seen from this report and the six pilots tested, Green Innovation Group A/S, along with all the project participants have jointly successfully navigated this project through troubled waters. We are especially pleased that several of the initiated pilots will be followed up by project partners in the period to come.

We hope that this report and the activities conducted under this project will facilitate collaboration and knowledge sharing and contribute to making the Nordic tourism industry more competitive and sustainable.

Oslo, 20 January 2022
Svein Berg — Managing Director, Nordic Innovation

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Project Objectives

Tourism has been an important industry in the Nordic region for decades, and an important way for the Nordic countries to connect and interact with the world at large. Due to the unique combination of opportunities and challenges that a growing tourism in the region represent, the dynamics of the industry has been a focus area for the Nordic Council of Ministers for years.

As part of Nordic Innovation's overall vision of increasing the sustainability of and cross-regional collaboration on tourism in the region, the project 'Sustainable Tourism in Nordic Harbour Towns' was initiated in 2019 with a set of specific goals in mind:

- Engage a diverse range of municipalities across the region in defining and collaborating on addressing key challenges emanating from harbour tourism
- Increase environmental, social, and financial sustainability of harbour and cruise tourism
- Identify innovations that can address the challenges through cross-regional public-private partnerships
- Implement and pilot 1-3 innovations in Nordic harbour towns, generating unique data on the potential for innovation in sustainable tourism
- Evaluate and share the findings and experience from the project in a way that can serve as a lighthouse for innovation in Nordic municipalities

The above goals are part of a larger effort to approach a world, where the visit of a cruise ship is a balanced and celebrated event in Nordic harbour towns, rather than a social and environmental challenge. In that world, local inhabitants are able to share unique natural and cultural offerings with novel groups of international visitors, while securing local quality of life through mitigation of congestion and pressures on ecosystems.

Ideally, the efforts in the Nordic region enable the development of reciprocal business models for local products and services that can increase the revenue of local businesses while strengthening the integrity of destination branding. The activities of this project are thus aimed at providing especially municipal actors with access to new technologies and collaborations with likeminded stakeholders across the region. Through a sustained effort, it should be possible to ensure the long-term availability of authentic and dynamic tourist experiences that run smoothly for both visitors and operators in ways that support local environments and ways of life.

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Project Activities

Six live innovation pilots in six Nordic countries

The kick-off of the project consisted of a two-day in-person workshop that took place in Oslo, September 2019, and connected municipal stakeholders within harbour tourism from five Nordic countries. The municipalities engaged in a layered inquiry process to identify key challenges related to harbour tourism in the Nordics. As lynchpins between public and private stakeholders, municipalities possess a nuanced perspective on the dynamics and effects of tourism activities. Defining these key challenges was a necessary first step for increasing sustainable collaboration in the sector and setting an outline not just for this project but also future efforts in the field.

The following four main challenges for harbour tourism were identified and explored in a series of workshops that followed the kick-off.

CHALLENGE ONE
Sustainable value proposition for all stakeholders

Balancing and managing the diverse interests of all stakeholders involved in harbour tourism poses a key challenge on several practical levels. The sector needs practices that are sustainable for both inhabitants, businesses and the many other related stakeholders.

CHALLENGE TWO
Environmental sustainability

The natural environment constitutes the ground on which all tourism activities take place. The balance between fair use and overuse of ecosystems is delicate on both a local and global scale. The sector needs innovative solutions that secure the environmental context of Nordic harbour towns, the natural attractions of tourist destinations, as well as the overall health of marine environments.

CHALLENGE THREE
Collaboration

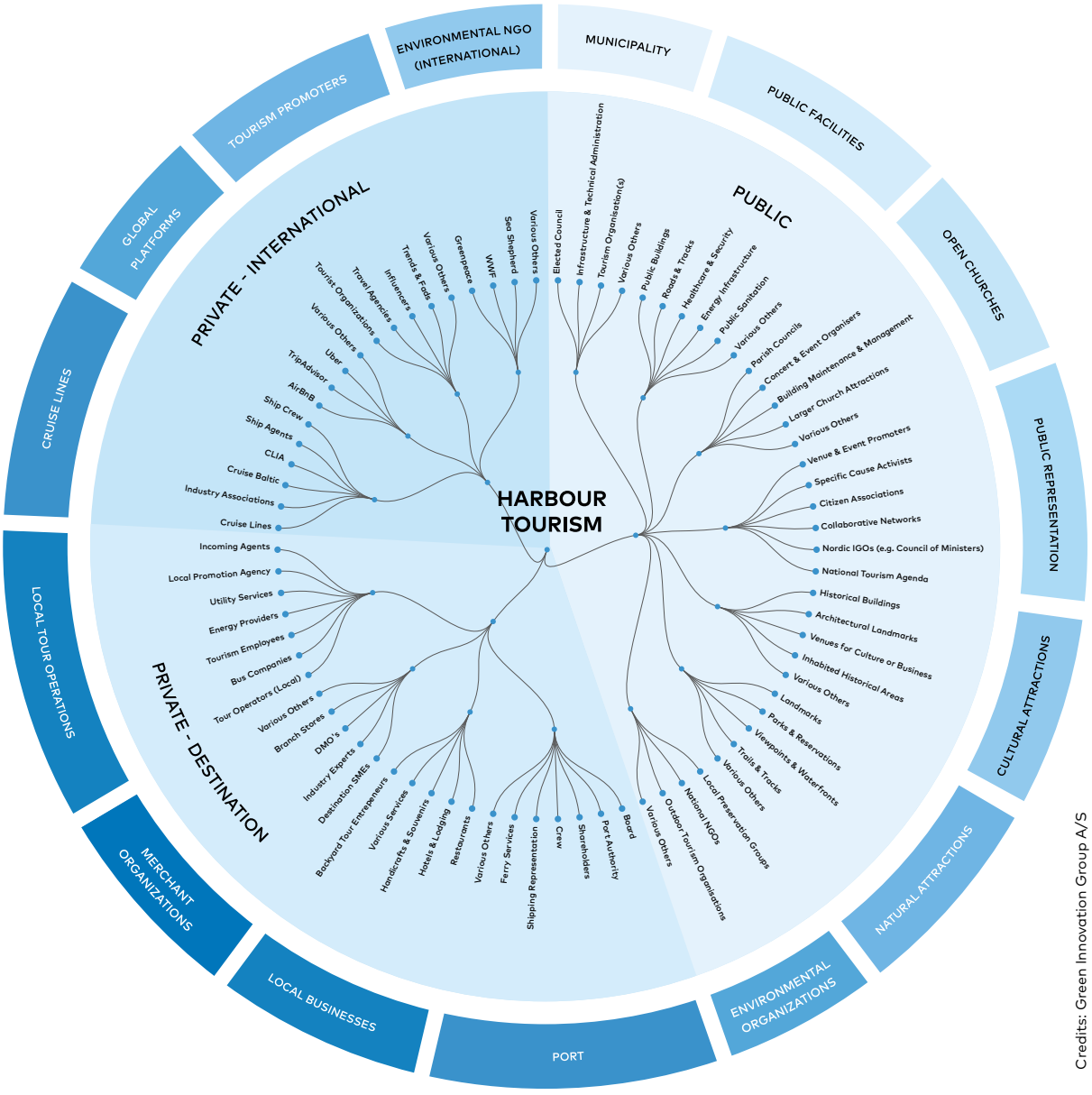
To effectively develop and implement solutions in a context like harbour tourism with many stakeholders, a very high degree of collaboration is paramount. It is necessary to invest time in establishing a common reality as well as common goals.

CHALLENGE FOUR
Aligning perspectives

A realistic and fact-based perspective of the current situation, shared by stakeholders, is a prerequisite for sustainable development – inconvenient truths and overlooked success stories alike.

Stakeholder Mapping

In addition to identifying challenges, a valuable output of the workshop series of this project was the ongoing mapping of stakeholders for each participating municipality and tourist organisation. The landscape of actors and their interests is different in almost every town. For this report, we have created a diagram that visualises an aggregate harbour town stakeholder network, exemplifying the complexity involved and breadth of collaboration needed to innovate.



Credits: Green Innovation Group A/S

Innovation as a solution

Achieving long-term sustainable tourism in the Nordics depends on technological innovation as well as active collaboration between public and private actors in the region. In an effort to address both the challenges and the goals outlined above, Nordic Innovation initiated this project to foster a more socially, culturally and environmentally sustainable tourism in Nordic harbour towns, and ensure a balanced development of local and international businesses while securing local quality of life.

As large scale cooperation with industry players and cruise lines was made impossible by the pandemic outbreak, the methodological approach of this project was adjusted to reflect a more decentralised setup. Project objectives were thus adjusted to pursue live pilots of specific technological innovations that had potential to scale across the Nordic region and pave the way for integrated and sustainable collaborations between public and private actors.

For each participating municipality, the process of deciding on specific partnerships has followed a similar structure. The initial workshops exploring general challenges were followed by group sessions in which local instances of those challenges were identified, along with preferences for which solutions the public actors wished to pilot. Based on that initial input, Green Innovation Group carried out initial innovation scouting, presenting shortlists of fitting innovations for each municipality. From there, dialogues were set up with the four final start-ups selected by the municipalities, each of them constituting a good fit for the local context.

The following presents a brief timeline overview of the project activities.

Timeline

2019

MAY	Project formulation and gathering of initial group of partnering municipalities
JUL	Tender and pre-project start
SEP	Kick-off workshop in Oslo
OCT	Follow up workshop series
DEC	Finalized project description and communication material to pave way for main project

2020

- **JAN** — Ramping up innovation scouting
- **MAR** — Collaborative meetings between municipalities to strengthen project vision and outline approach
- **MAY** — Crisis mitigation from Covid-19 pandemic outbreak
- **AUG** — Stakeholder management continues through pandemic
- **OCT** — Adjusting project vision and scope to new reality
- **NOV** — Negotiating project contracts and partner agreements (public and private)
- **DEC** — Shortlisting innovations

2021

- **JAN** — Updated project agreements
- **FEB** — Outreach to private innovators
- **APR** — Expanding group of municipal collaborators
- **MAY** — Setting up dedicated innovation pilots according to local needs
- **JUN** — Continuous dialogue with public and private partners
- **JUL** — Launching first innovation pilot
- **AUG** — Adjusting for Covid contingencies, yet again
- **SEP** — Launching collaborative workshop series with municipal stakeholders
- **OCT** — Concluding first pilots and workshop series
- **NOV** — Developing Handbook for municipal innovation
- **DEC** — Finalising project report

2022

- **JAN** — Communicating findings and sharing experiences across the Nordic region
- **FEB** — Evaluating entire process
- **JUN** — Some pilots running through 2022 season for maximum interface with tourists

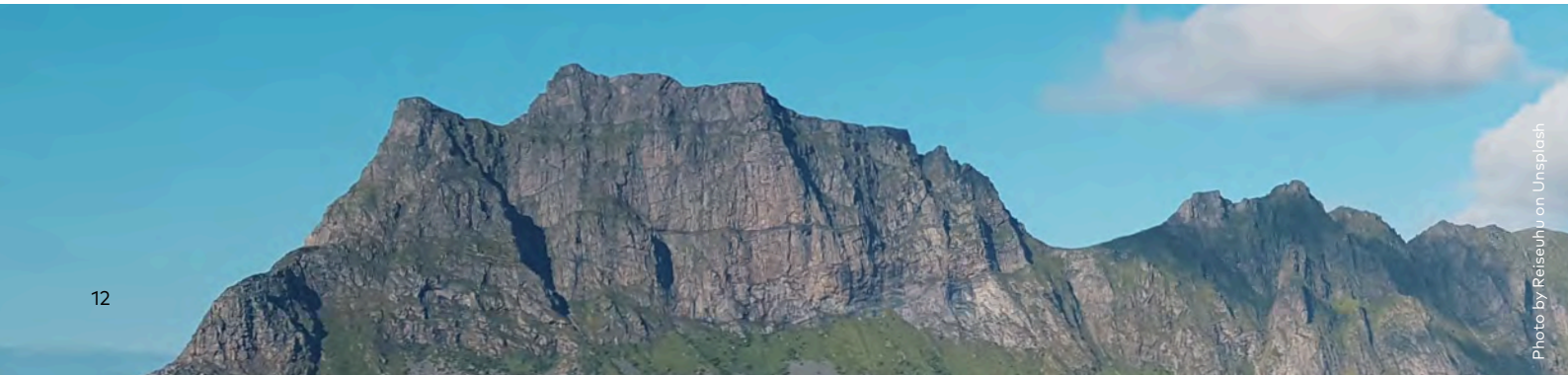
Approach

Innovation pilots bring working solutions to your challenges

In many harbour towns and cities across the Nordic region, local municipalities and tourist organisations have an ambition to develop a more sustainable and vibrant tourism in their area. Whether made explicit or not, the ideas signal a pervasive and deep-seated ambition to improve their local area. To move towards the vision of integrated and sustainable tourism, these developments in the sector would ideally come through innovation and development of business models that promote collaboration in the local ecosystem. Such an approach is most likely to produce a win for everyone involved, included the local community on a long-term scale.

Innovation can be a fickle topic to approach, and there are several ways to seek out and utilize technological innovation from a municipal perspective. Innovation competitions and accelerators can offer a wide-lense view of what solutions are available or in development, while innovation sprints can showcase and cultivate the innovative capacity inherent within organizations.

This project has focused on innovation pilots, which tests a business case in order to find out if a given solution is viable or not while keeping costs and investments in check. Additionally, the innovation pilot can serve as a head start to implementation and adoption of innovative solutions and business models. The tourism industry is a perfect testbed for solutions that rely on access rather than ownership as well as personalised access to attractions and mobility services. This can play a key part in the transition towards a more sustainable economy.



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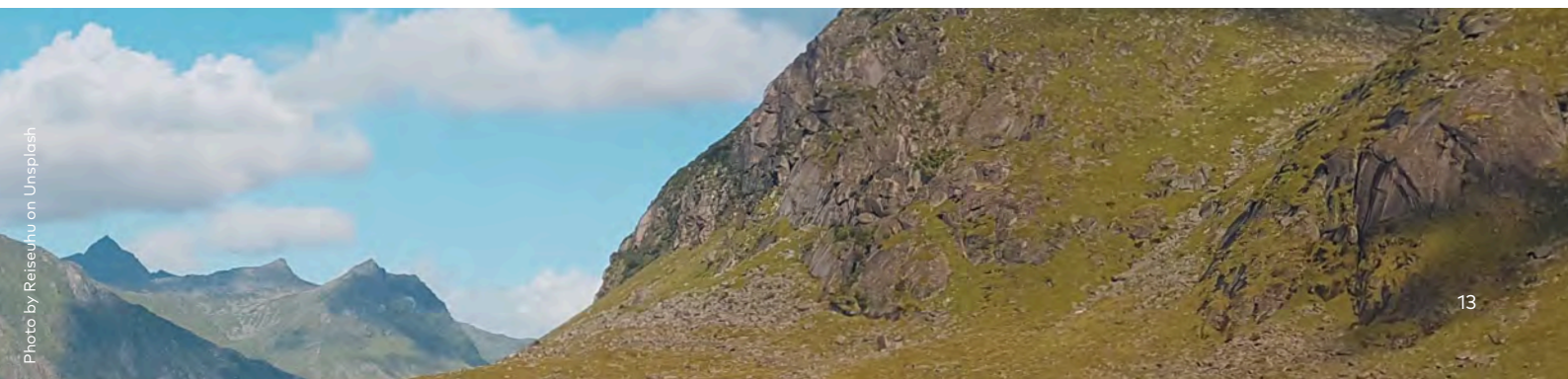
In the following, the concept of the innovation pilot is broken down into actionable steps. The pilot approach is a good choice for municipal innovation for the following reasons:

1 It is a type of innovation activity in which the initiator can clearly design the goal and success criteria that are closest to the local needs and context. That means, as a municipality you get to choose exactly what to address – floating plastic garbage in the marina, the crowd congestion issues around a specific local monument, or the waste management surrounding particularly busy peaks in cruise season.

2 As shown in this project, running an innovation pilot can be done relatively simply and with fewer resources than typical large scale innovation activities.

3 The method is predicated on getting SMEs with working technology to deploy their solutions in the real world, interacting with the issues you are trying to address. That means concrete initiatives, tangible activities visible in the community, with data and feedback specific to your chosen issue. Innovation is often an incremental process and building on a real-life test is usually a very good way to qualify your efforts towards a more sustainable local tourism.



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Overall Findings

Deploying region-wide innovation pilots requires broad collaborations

Overall findings from pre-project and preparations

Before the innovation pilots themselves were executed in the second half of 2021, a number of activities were completed, each leading to valuable findings and insights that pertain to innovation processes in general, and technology pilots in particular. Namely:

Tourism innovation entails a complex set of stakeholders

Tourism activities intersect with several, if not all, aspects of harbour towns, especially small and mid-sized ones. Local inhabitants, port authorities, tour operators and local representatives all operate in very different ways.

Motivation and incentives may be at odds

The stakeholders above are just a fraction of every town's stakeholder landscape. Their incentives and interests are sometimes different, sometimes aligned in various ways. Additionally, the setup may be different from town to town, and uncovering the local setup is important to collaborative innovation efforts.

Planning and managing must consider long-term scale

Many well-meaning initiatives have been stranded or run out of steam due to one or more partners losing interest or realising that the efforts were not fully contributing to the goals they had in mind. Trying to secure a long-term intention and strategy, also in terms of environment, is the best way to counteract chaotic commitment patterns.

Unexpected setbacks happen, sometimes globally

Almost no one plans for a once-in-a-century pandemic. While it is impossible to safeguard against every eventuality, it can be very beneficial in development processes to set aside time for brainstorming the different ways things might go sideways – that process usually leads to interesting new perspectives on the activities at hand.

Overall findings from dialogues and workshops

Getting from idea to reality is hard, but not impossible

It may seem like a daunting task to take your imagined solution from the meeting room to real-world pilot. It might not seem like it at the start, but there is definitely a way to do it, and probably also an easy way that you overlooked. What would it look like if it was easy?

Processes are handheld

Very few things get done by themselves, and even fewer happen as planned. Usually that is completely fine and takes less adjustment than expected – as long as communication is frequent and direct.

Awareness of ownership and resource availability is key

To achieve the above, having a clear division of responsibility is necessary – not the responsibility to do everything, but to know what needs to be done and follow up. Same goes for the availability or lack of resources in a pilot process, most importantly time. Working hours is a precious and limited resource, especially in public organisations.

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Photo by Green Antjom Unsplash

Findings from the pilots themselves

Seasonality and local events should be taken into consideration

Often the best setting for an innovation pilot is during events like concerts, conferences, etc. that attract lots of people, local and foreign. Some solutions are quite context specific, depending on the culture - e.g. crowd behaviour, or climate - e.g. temperature or snow in the test sites. Be sure to map out potential translation issues early in the process.

Ensure an image of before and after

The main point of an innovation pilot is to learn what works and what doesn't. No matter the type of solution you wish to test, e.g., physical or digital, it is important to establish a solid image of the before and after a pilot. A big quantifiable study is not necessary – an interview or two with key local stakeholders should provide the qualitative assessment needed. This provides the basis for gauging the effects of the pilot.

Something is better than nothing – 'what's possible' beats 'what we had in mind'

In many professional settings your perfectionism is considered a blessing. In innovation processes it is often an obstacle. It is tempting to scrap a project if it doesn't turn out like imagined – if we only manage to test five drones instead of 20, or the digital heatmap only covers two days, not 10. **The test that happens is infinitely more valuable than all the ones that never made it into reality.** There are valuable lessons to be learned from even the skimpiest implementation, and if nothing else it builds momentum towards a larger scale innovation process.

A narrow target group increases success chances

Targeting 'every harbour tourist' is much harder than targeting '50 visitors over 50 from this specific port call'. Whether for testing or for communication purposes, having a narrow target group increases the chance of success, and probably also the general relevance of your findings.

Photo by Gunnar Ridderstrom on Unsplash

Photo by Niclas Jessen

We did it in this project!

In spite of a global pandemic hitting tourism hard, and through several hard learned lessons mentioned above, this project carried out **six live innovation tests in six Nordic countries in six months.** This should prove that innovation tests, even across borders in difficult times, is possible with less setup-time than usually imagined.

Experiences can be shared

The following cases all generated key insights to both municipalities, tourist organisations, and the private innovators involved. The unique challenges and opportunities of each case will inform local efforts towards more sustainable tourism. But the insights can on several levels be beneficial far beyond national borders. Whether the inspiration is direct in terms of technologies and implementation, or general in terms of process and dynamics of the collaboration, we encourage all Nordic municipalities to consider the outcome of the following cases.

And efforts can be scaled

In all cases, solutions were chosen that have a potential for scaling. While local context is a factor, there is no reason the success of a given pilot could not be scaled up locally or transposed to a different town. If green mobility or de-congestion services improve tourism sustainability in one city, they can do it in 10, or a 100. That is the important reason why even a small-scale local innovation test is a hyper relevant tool in the green transition. Every little step we take in a greener direction paves the way for the next bigger step, and your tracks can be followed and copied by likeminded innovators in the neighbouring town or country – or continent.

Photo by Ursula Drake on Unsplash

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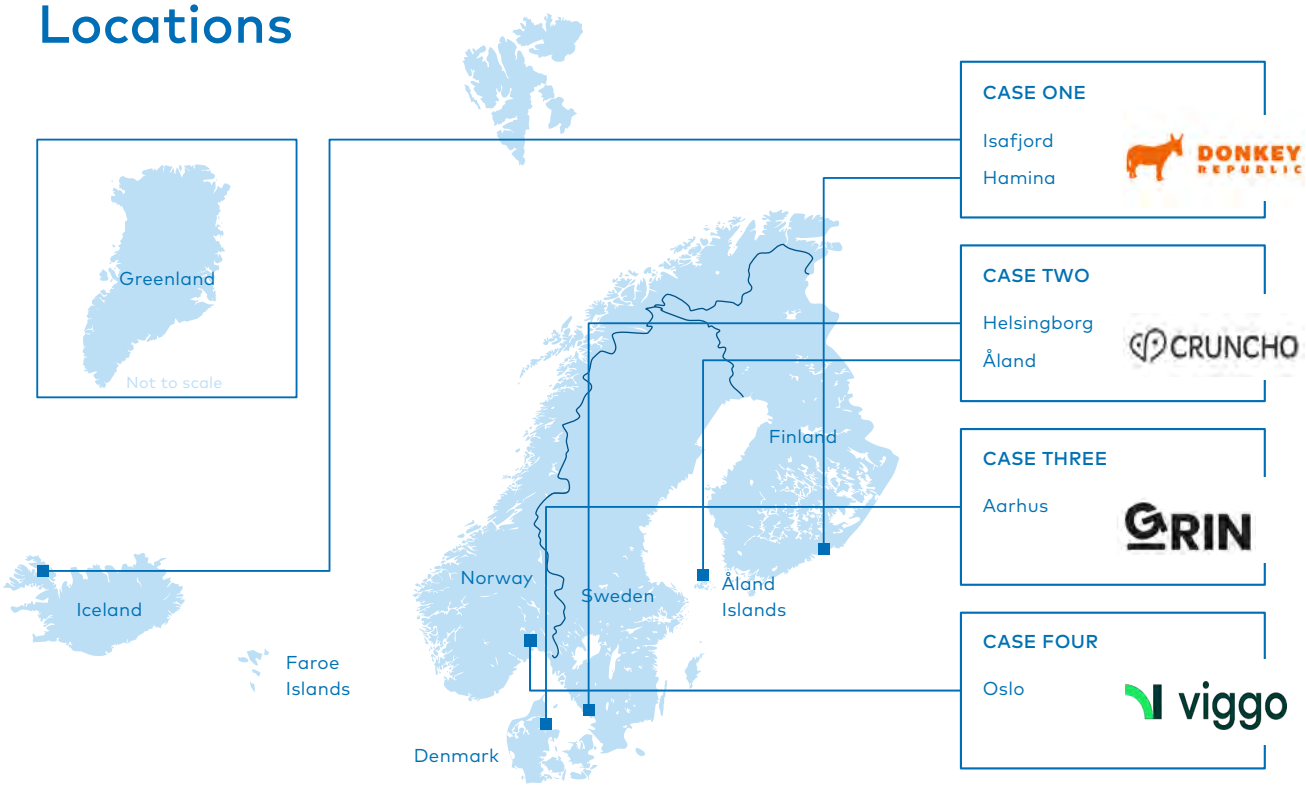
Innovation Pilots

Locations



Nordic added value

Donkey Republic

In both Isafjordur and Hamina, a pilot with Donkey Republic was chosen because the solution addresses issues from over-tourism directly while also creating value for locals. As small municipalities, they do not necessarily have the capacity to find and implement solutions, even though they might already be implemented elsewhere in the Nordics. Through the cross-regional support in this project, a relevant technology that directly mitigates congestion was established rapidly, in settings that would otherwise take decades to materialise. That means short-term rental bikes are available for harbour tourists, where they previously were not. This directly translates into CO_2 emissions saved, and a more authentic and self-guided visit for some visitors.

Cruncho

Helsingborg and Åland deemed Cruncho relevant to pilot since visitors there often scan the top three results on google or skim through a Lonely Planet, and thus miss out on valuable experiences and hidden gems. Cruncho's platform diversifies the visitor's experience and allows local representatives to feature specific attractions or venues that synergise with local needs. Facilitating greater public support for more integrated tourism practices is one of the key challenges outlined by Nordic municipalities, and this is addressed directly by this technology.

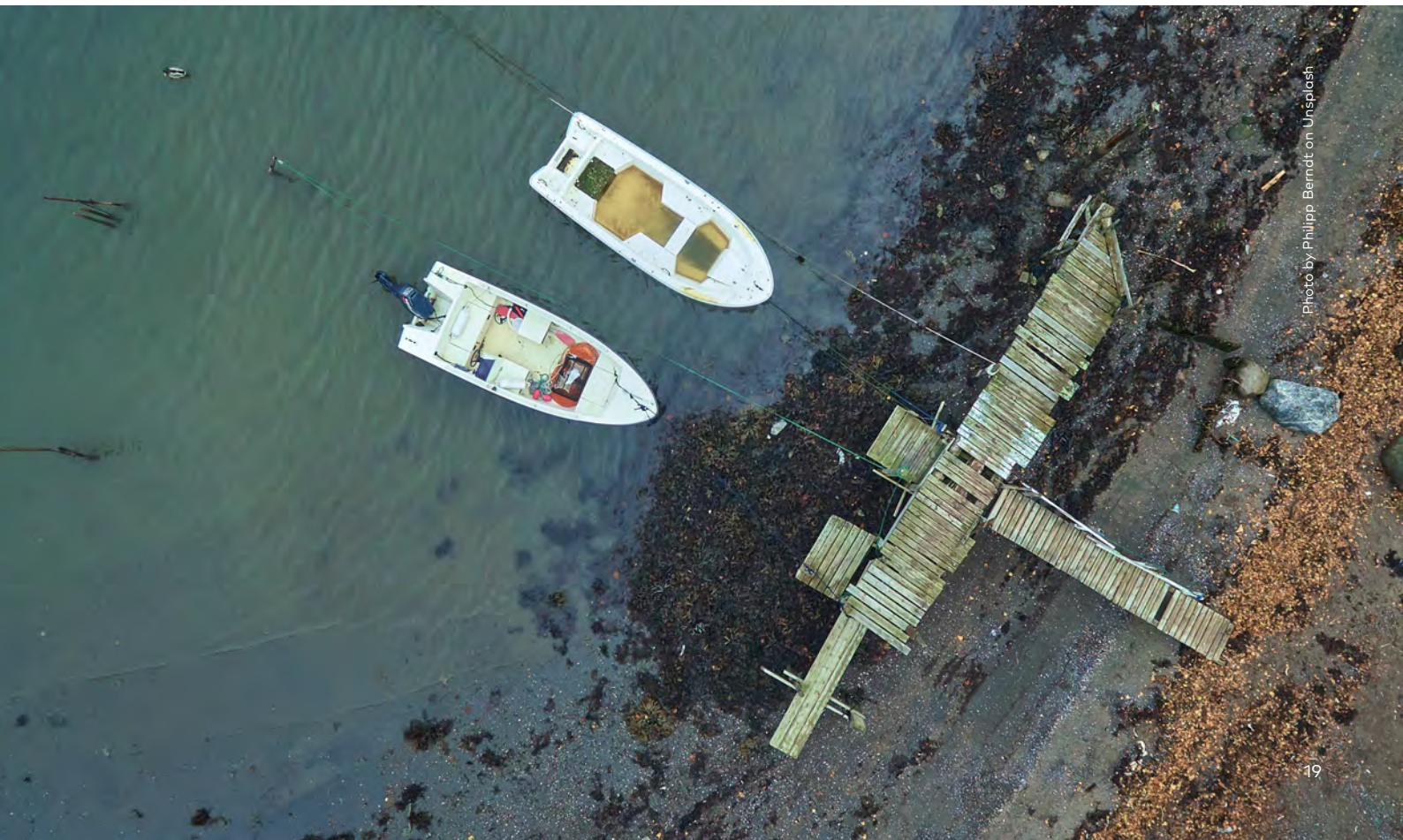
This solution would be infeasible to implement for public actors in these two cities, were it not for the support of this project. Thus, these cross-national pilots directly increase the integration of harbour tourism practices with local wishes, creating tailored and diverse visitor experiences along the way.

GRIN

Solutions that replace single-use takeaway service are already spreading across restaurants and cafés in Aarhus. However, the link that closes the loop between venues and customers returning their containers has been missing. Therefore, GRIN was chosen as a pilot in Aarhus. With the collaboration in this project, they were able to develop a new prototype that utilises sensor technology and tailored software to facilitate the takeback of reusable service for tourists at Dokk1. This will directly decrease the amount of single-service used and wasted by harbour tourists in the city, while simultaneously demonstrating how technologies from innovators in one Nordic country can relatively easily be implemented by actors in the public space of another Nordic country.

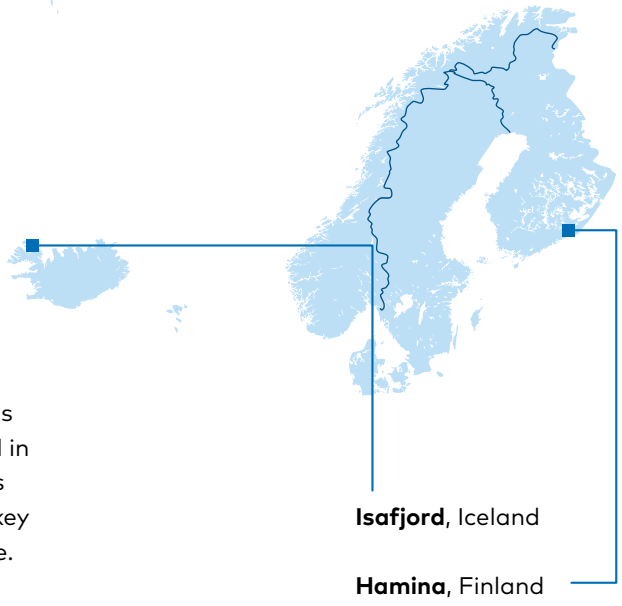
Viggo

Electric vehicles are on a meteoric rise in several areas of the Nordic region. The green mobility is often driven by locals owning costly vehicles, adding to congestion issues and doing little for short-term visitors. For this reason, Oslo Innovation District agreed to pilot Viggo's electric ride-sharing service in an effort dedicated to increase the green mobility of tourism in the city centre and harbour area. For some visitors this meant replacing fossil-based trips with emission free movement, while others replaced generic sight-seeing with unique local experiences. Every trip displays the kilos of CO_2 saved, making visible the efforts towards sustainability more visible.



CASE ONE

Donkey Republic in Isafjord and Hamina



Donkey Republic is a Danish company that specializes in shared bicycle mobility. The company was founded in Copenhagen in 2015, and it is now present in 71 cities across Europe. How does it work? You open the Donkey Republic app to see the nearest donkey bike available. You rent the Donkey with your phone once you've located one near you. When you're finished riding, you bring the Donkey to an available drop-off location, which is indicated on the map. After your ride, the app calculates the costs and automatically charges your credit card.

Pilot location

Ísafjörður, meaning ice fjord, is a town in the northwest of Iceland. It is the third busiest port in Iceland and a heady mixture of nature and history. The first things you will see as you approach are the majestic mountains that serve as a backdrop for this town of around 2,700 residents. The town centre is actually built on an eyri, or spit of sand, where the waters of the larger fjord Ísafjarðardjúp meet. Although fishing has always been the town's primary industry and it houses one of Iceland's largest fisheries, the decline in fish and fishing has been offset by the rise in tourism.

Country
Iceland

Population
2,700

Highlights
Dynjandi Waterfall, Westfjord Heritage Museum, and Isafjord Old Town

Pilot location

The Kotka-Hamina region is located along Finland's Eastern Gulf. The town is well-known for its vibrant city parks and small streets lined with wooden houses which make up Hamina's city centre with its distinct circular shape. Hamina's roots date back to the 17th century, and the town is over 360 years old, making it the oldest in the Kymenlaakso region. In Valkmusa national park on the other hand, tourists can enjoy Lapland's wilderness that give visitors a chance to wind down and experience nature fully.

Country
Finland

Population
19,900

Highlights
Valkmusa National Park, Salpa Trail, Saint Peter and Saint Paul's Cathedral, and Hamina Old Town

Challenges regarding tourism

Both towns piloting this innovation share several challenges stemming from tourism. The lack of public transportation from the cruise landing to the city centre, combined with availability of taxis, is a growing concern as the number of tourists increases. The combination makes the harbour more congested for locals, while tourists find it difficult to reach the city centre – often the intended goal of their visit. This makes for a less enjoyable experience for visitors and locals alike.

Photo by Sturlast-iswiki

Photo by Julius Jansson on Unsplash

Pilot design

In both cases, the innovation pilot is designed to alleviate congestion and allow for more flexible movement around the area – with zero environmental impact. Donkey Republic provides that through shared bicycle mobility. The bikes are stationed close to the harbours and at key points in the city centres, so that tourists can ride them instead of taking the taxi or the bus from the ferry terminal to the old town, and back again. The pilots are designed in collaboration with local municipalities, and rest on the efforts and knowledge of local actors. In Ísafjörður, the café Heimabyggð runs bike distribution and maintenance, while in Hamina the pilot is run by Kaakau Oy. The goal of the pilots is for tourists to be able to move around freely and without emissions, experiencing nature while traveling from one location to another, and be less reliant on public transportation or taxis by renting a bike.

Perspectives

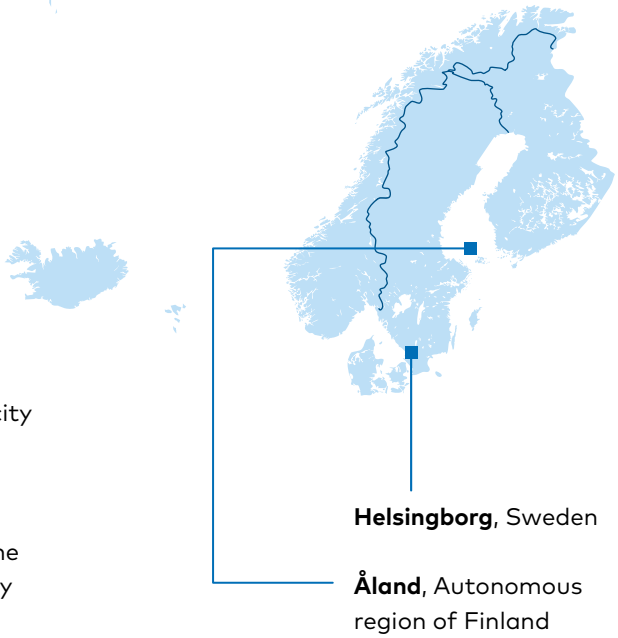
With a successful pilot in two Nordic harbour towns, this project showcases that it is possible to change tourist travel behaviour towards more sustainable choices, and that green mobility plays an important part in the landscape of more sustainable tourism. Hopefully this innovation case serves as inspiration for municipalities across the region and actors in the tourism sector, who seek to decrease congestion and CO_2 emissions alike. The benefits of increased bike availability reach locals and visitors alike, and these two pilots demonstrate a potential business model for integrating the solution into the local landscape.

Photo by Nomadic Julien on Unsplash

Photo from www.startus.cc

CASE TWO

Cruncho in Helsingborg and Åland



Helsingborg, Sweden

Åland, Autonomous region of Finland

Cruncho is a Swedish company that create tailored city guides and recommendations based on personal preferences, local offerings, and online platforms for tourist info. It automatically gathers crowdsourced, unbiased, and bookable content from sources that the local representatives trust, creating customisable city guides in a platform that integrates completely with local tourist organisations. Through personalized recommendations, the reader quickly becomes an expert on a city or destination and saves time researching other less relevant options. Simultaneously, the local experts are able to feature hidden gems and attractive locations that didn't make it to Lonely Planet or Youtube.

Pilot location

Helsingborg is strategically located at the narrowest point of the Øresund strait, directly across from the Danish town of Helsingør. It is now a busy port, an industrial town, and a favoured centre for conferences and trade fairs. While the port itself has been somewhat overshadowed since the construction of the Øresund Bridge connecting Sweden and Denmark, the city itself remains a tourist attraction. There are many remarkable sites to explore in the historic town, such as stone churches, preserved houses, narrow alleyways, and the Kärnan fortress. Additionally, Sofiero Park near the city is another popular spot.

Country
Sweden

Population
91,500

Highlights
Kärnan Fortress, The Town Hall, The Open-Air Museum, The Botanical Garden, and Sofiero Park

Pilot location

Åland is an autonomous region of Finland located in the Baltic Sea, at the southern end of the Gulf of Bothnia, between mainland Finland and Sweden. The Åland archipelago is made up of approximately 6,700 islands, but only 60 of them are inhabited. The numerous bridges and ferries make it easy to travel from one island to another. Åland's autonomous status means that it has its own taxation system, postage stamps, flag, and Swedish as its official language. The Åland islands offer a variety of attractions for visitors, centered around the historic towns and the unique landscape of islands with activities including adventurous island hopping, boating, cycling, and fishing.

Country
Åland,
Autonomous region Finland

Population
30,100

Highlights
The Maritime Quarter, Ålands Brewery, and The Castle of Kastelholm

Challenges regarding tourism

In general, the cruise ship tourism has a minor economic impact on the region's economy. Although cruise ship tourists spend a significant amount of money, the revenues usually benefit a limited number of stakeholders in the region. Tourists frequently visit the same places, and consequently miss out on the region's hidden gems. This also causes congestion at so-called hotspots and an unequal distribution of tourism revenue, which strains the public opinion of international visitors, e.g. from cruise ships.

Photo by Atte Gronlund on Unsplash

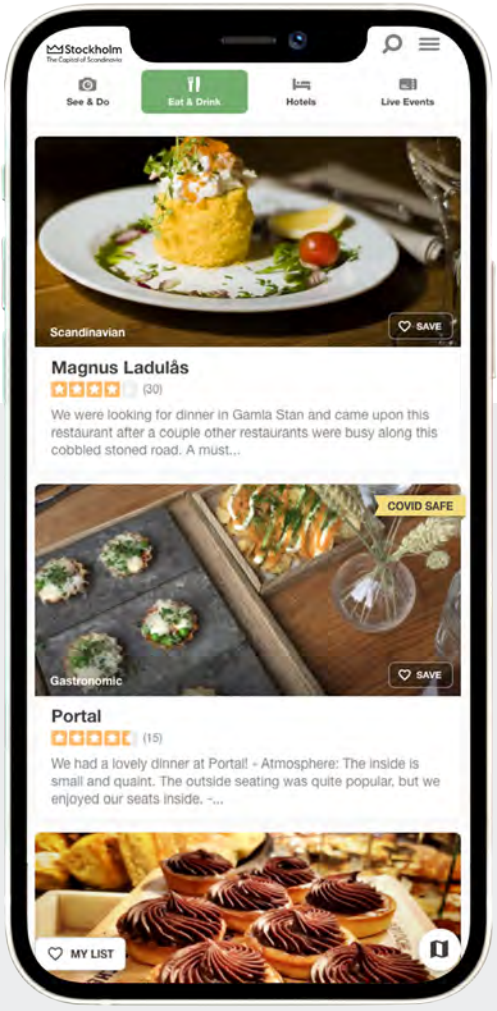
Photo by Yapio Hatja on Unsplash

Pilot design

In both pilots, the Cruncho Guide is set up to display everything the destinations have to offer on a single platform, integrated with local tourist websites. This includes places to visit, activities, restaurants, bars, museums, hotels, and live events. Alternatively, visitors can let the recommendation engine create a personalized list based on personal preferences. The city can include and promote hidden gems and attractions that would otherwise be overlooked by international tour operators. The platform also allows integration of local contributors. As a result, locals can present a more authentic offering, feel more connected to tourism, and visitors have a more unique and tailored experience.

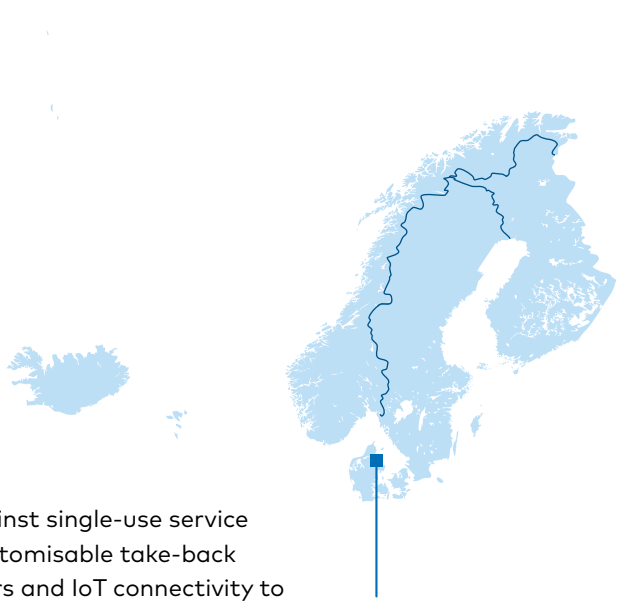
Perspectives

The innovation piloted in these two towns highlight that technology can increase the relevance and authenticity of the local offering to tourists, while alleviating congestion around top attractions. This type of digital tailored tourist guides can easily be implemented in other Nordic towns and cities. Over time, this could lead to increased acceptance of tourism in the public sphere, since more stakeholders will take part in the benefits of more dispersed tourism, economic and otherwise. Tourists will feel more welcome in person, and locals can demonstrate pride in their local area. Furthermore, the implementation of a single platform in multiple cities improves the customer experience of tourists traveling throughout the Nordic regions, as their preferences and experiences inform future recommendations.



CASE THREE

GRIN in Aarhus



Aarhus, Denmark

GRIN, a Norwegian startup, has joined the fight against single-use service and waste in the Nordics. They have developed a customisable take-back solution for reusable cups and plates, utilising sensors and IoT connectivity to ensure product identification and validation. Their intelligent bins can be programmed to receive and manage a wide range of complex waste products, closing the loop on takeaway food and the large amounts of waste generated by visiting tourists and locals alike. The solution utilises real-time communication with third-party applications for optimal maintenance and logistics operations. Their devices make product returns easier by eliminating sorting challenges and providing interactive information on how to return, as well as supplying restaurants and vendors with a convenient pick-up point.

Pilot location

With its forests, beaches, architecture, and art, Aarhus, Denmark's second largest city, is a popular tourist destination. Aarhus is an old Viking city, which it still evident when walking the streets today. The port of Aarhus is Denmark's largest container port and one of the country's most popular cruise destinations. Nowadays, the harbour is a major attraction in and of itself, where you can pay a visit to some of the city's most exciting attractions, such as the bustling Dokk1 Cultural Centre, iconic buildings like the Iceberg in the new Aarhus district, or swim at the harbour baths.

Country
Denmark

Population
242,900

Highlights
The Old Town, ARoS Art Museum, The Infinite Bridge, Moesgaard Museum, and Dokk1

Pilot design

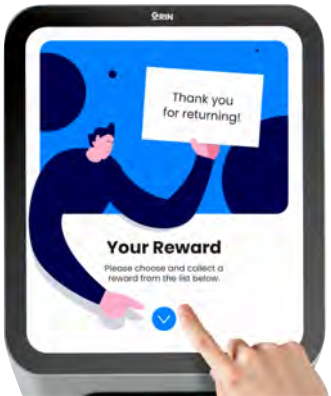
The goal of this collaboration is to develop and test a system for collecting and recycling cups and plates in an organised and structured manner that benefits both tourists and restaurants through easier logistics and increased circularity of takeaway food. GRIN has tailored their collection bins to specifically handle plates and cups from vendors in and near Aarhus harbour. For this pilot, a set of bins have been installed at DOKK1 in Aarhus, in collaboration with local food vendors and Kleenhub, their local provider of reusable cups and plates. The collection bins register the type of service placed in it, which can trigger the release of a monetary deposit made by the customer at the restaurant. Through the use of digital nudging and incentive schemes, their devices increase the rate of return of products after use, thus easing the transition to a circular economy for tourism in the area.

Challenges regarding tourism

Tourism is often associated with unsustainable consumption and environmental pollution. However, several businesses in Aarhus are already using reusable cups and plates to alleviate the environmental footprint of food and drinks for tourists and harbour visitors. After using the cups and plates, tourists can return them to the restaurants. However, this is where the issue arises. Restaurants do not have the resources to organize a structured return policy, so tourists are frequently forced to wait in long lines or leave their cups and plates outside, generating unpleasant environments for visitors and locals alike.

Perspectives

In Aarhus, this innovation pilot plays an important part in scaling up the implementation of reusable cups and plates. Having a working prototype through this project should see an increase in participating restaurants, since they an organised system to adopt reusable utensils. The GRIN collection bins could play an important role in scaling reusability across the Nordics. When there is a well-organised system in place, more restaurants are likely to shift from linear to circular product use. This will stimulate the development of reuse- and recycling business models for restaurants in Nordic port cities.



CASE FOUR

Viggo in Oslo

viggo

Oslo, Norway

Viggo is the first Scandinavian ride-hailing service to operate entirely with zero-emission vehicles. Their goal is to reshape urban transportation by combining transparent user-costs and AI-driven optimisation with a zero-emission requirement. It is one of the few app-based ride-hailing services that operate fully within the Nordic regulation protecting drivers' conditions. Viggo aims to improve ride-hailing in Scandinavia from a legal, environmental, and customer-centric standpoint without sacrificing efficiency or price. In terms of price, Viggo place themselves between traditional taxi services and the cheaper app services that are illegal in several Nordic countries.

Pilot location

Oslo is Norway's economic and governmental centre, as well as a hub for Norwegian culture, trade, banking, innovation, industry, and shipping. The city is Europe's fastest growing capital city while also being one of its greenest. Picturesque parks abound, and the pristine islands of Oslo fjord are only a short boat ride from the main port. The city's busy waterfront is lined with trendy restaurants, shops, and cafés, as well as the Oslo Opera House, the city's iconic, glacier-like centrepiece.

Country
Norway

Population
1,019,500

Highlights
Frogner Park, The Royal Palace, Holmenkollbakken Ski-Jump Site, and The Munch Museum

Challenges regarding tourism

A significant increase in tourism started in 2014 after the financial crises and since then there has been continuous growth up until March 2020. Oslo is one of the most popular tourist destinations in Norway, with 52 percent of visitors to the country spending time in the capital. Within Oslo, the harbourfront is a central part of the bustling city life and it attracts a lot of visitors. In 2019, the port of Oslo received more than 230,000 passengers. As in other Nordic harbour towns, the increased tourist activity leads to a mix of opportunities and challenges that need balancing – particularly regarding the mobility of visitors and congestion at key attractions.

Pilot design

In a collaboration between Viggo and the innovation district City Centre of Oslo municipality, this pilot was launched to introduce emission-free mobility to tourists in the harbour area as a supplement to the existing mobility infrastructure in Oslo. The solution was promoted in a targeted effort to harbour tourists and visitors attending large events in weekends with major cruise ship landings, aiming to diversify the movement patterns and ensure green transportation around the city. The public-private collaboration also provided support for young people and university students to attend national elections held in the pilot timeframe – part of an effort to integrate green mobility services for tourists and local inhabitants alike while promoting active citizenship.

Perspectives

With a concentrated effort towards harbour tourists, this pilot shows that also in larger Nordic cities, the challenges regarding increased tourism can be mitigated through innovative technologies. Through their customer-centric approach, Viggo makes transportation more convenient. This sustainable mobility solution allows tourists to move around in a smooth, efficient, and environmentally friendly manner. The integration of increased green mobility in other larger cities in the Nordic countries will result in cleaner air on the streets and better traffic management in tourist areas. This pilot has shown that basing solutions on a public-private collaboration allows the solution to better address specific local challenges.

Photo by Jacek Dylag on Unsplash

Photo from www.viggo.com

Handbook for Innovation in Nordic Municipalities

The following section presents a condensed handbook for innovation in municipal settings. The insights into innovation processes are based on the findings and experiences of the six innovation pilots, as well as a series of workshops gathering input on the barriers to innovation for stakeholders in municipalities and tourist organisations. The handbook consists of seven general principles for innovation, as well as a segmented roadmap, outlining the different steps of creating an innovation pilot. Each step in the roadmap contains a checklist of activities and milestones. Of course, no two cases are the same and reality may call for more detail in some steps while others are easily completed.

General design principles for innovation in a municipal setting

1 Innovation is a muscle

Being innovative does not require a long education nor weeks spent in a fancy workshop room. Rather it is a mode that you and your team can enter deliberately. Just like muscles, innovation gets stronger with consistent training, it can be made a habit, and the small incremental changes made weekly will lead to great results down the line.

2 Restrictions breed creativity

Tasked with coming up with 'any great idea to improve the world', most of us would hesitate. Asked to propose 'anything that could improve the usability of, say, post-it notes by dexterity-impaired', most people can rattle off several ideas in a minute or two. If we are stuck on ideas, it usually helps to set tighter parameters and ask more specific questions.

3 Lower the bar for success

Having something happen in real life beats the perfection of a great idea that doesn't come to fruition. If we start small – with a simpler ambition than we first think of – it is often possible to build on that experience and scale the innovation, or develop new and more comprehensive tests as needed.


Photo by Einar Jonsson on Unsplash

4 Allocate 50 percent more time than you need

Underestimating how much time is needed to bring a process forward is just one of those human tendencies. Build a roadmap as you would, and add 50-100 percent more time for each activity afterwards.

5 Define short and shared vision

Make sure your vision or intention for the innovation process is as consice as possible. Again, a narrow scope is your best friend in making change happen. Run that vision by colleagues and other stakeholders for feedback to ensure you're working in the same direction.

6 Acknowledge uncertainty - adopt a flexible mindset

Innovation, also known as 'trying something new', will bring you into unknown territory. Things will be different in reality, compared to the planning phase. This is to be expected, and while the plans are important, the willingness to change them is what will make or break your innovation process.

7 Ask for help

Most people around you share the same good intentions of creating sustainable innovation. Utilize the motivation and resources in your network, both project-related and not. Sharing the uncertainty or lack of momentum we may experience is the first and quickest step towards solving our problems. Usually, two minds work better than one.

Roadmap for innovation in Nordic municipalities

PART 1 Planning the pilot

Goal setting

- ☑ Specify idea on your own - brainstorm and write brief notes
- ☐ Define why, who, how, and when
- ☐ Arrange first feedback session with colleagues or stakeholders
- ☐ Check that project vision and desired outcome is specific and realistic

Scope and resource allocation

- ☑ Work backwards from overall vision to specific success criteria
- ☐ Be sure to scale down as much as possible – real beats perfect
- ☐ Outline the steps needed to reach the goal, and list the activities for each
- ☐ Estimate the time required to complete each activity – and add 50 percent
- ☐ Propose an allocation of who does what when – clear deadlines help everyone

Outreach and dialogue with partners

- ☑ Host the first meetings with external stakeholders
- ☐ Be sure to ask questions, to uncover the curiosity and motivation of everyone involved
- ☐ Decide how often you want to have project meetings – more regularly is not necessarily better
- ☐ Investigate what type and frequency of communication each stakeholder prefers to fulfil their role, and to feel engaged in the project
- ☐ Set up dialogue touchpoints for the remainder of the process – easier to change or cancel later than call last minute

Reach agreement with stakeholders

- [x] Decide if it is formal and signed or informal and implicit
- [ ] Simplify and specify the agreement as much as possible – go for the minimum goal that everyone can get behind
- [ ] Include a list of deliveries (and who is responsible for what and when), this can be separate from the overall goal
- [ ] Expect small revisions back and forth, especially if both private and public partners are involved
- [ ] Communicate the agreement to the world – this step is worth celebrating!

Plan and prepare activities

- [x] Establish an image of current scenario – can be done in many ways, to contrast when you complete the pilot
- [ ] Run the innovations you have in mind by gatekeepers in the municipality – you might need approval for new trash bins on the harbour or sensors in a public space
- [ ] Consider a communication plan – depending on the pilot scale, it may be worth planning some outreach or PR to share and celebrate the great initiative

Roadmap to Innovation for Nordic municipalities after agreeing on pilot deployment

PART 2 Deploying the pilot

(Re-)confirm goal

- ☑ Double-check that initial goal is still relevant
- ☐ Check that goal is translated into meaningful gains for each stakeholder
- ☐ Shorten and simplify goals, prioritize – what is most important if only one goal is achieved
- ☐ Confirm partner buy-in

Practical preparation

- ☑ Prepare communication materials – can be as simple as a LinkedIn post
- ☐ Gather permits and schedules
- ☐ Let innovation partners start production of prototypes if needed
- ☐ Get started with activities that can be done up front – a quick start creates great momentum for all stakeholders involved

Launch pilot

- ☑ Each stakeholder carries out activities and work packages as agreed
- ☐ Be sure to engage pilot partners during this step – better to ask for one status too many than one too little
- ☐ If collaborations start to wobble, brainstorm alternative paths to minimal success
- ☐ Be mindful of alignment and trust in the initial phases of the pilot, if multiple stakeholders are involved

Mid pilot check-in

- [x] If your pilot is running for a week or less skip these steps
- [ ] Plan a status call halfway through – if everything is on track, carry on
- [ ] Start looking at the final goals – what data do we need, to know we succeeded?
- [ ] Reach out to both private and public partners and ask them to collect the data, footage for PR, etc. – you don't need to create everything yourself

Concluding pilots

- [x] Gather data points and testimonials from pilots in one place
- [ ] Summarise the findings in a handful of bullet points
- [ ] Check in with stakeholders to ensure everyone has concluded their activities and are satisfied with the process
- [ ] If possible, communicate the (successful) conclusion of the pilot – having made something happen in the real world is worth celebrating and sharing

Evaluating and communicating findings

- [x] Host a final meeting to talk about the insights gained by each stakeholder and do a short evaluation – three open questions often give a more comprehensive account than a long survey or report
- [ ] Formulate the key findings in one or two sentences – this is surprisingly valuable to share with colleagues and other interested people
- [ ] Thank everyone involved for their efforts and be proud of the innovation you brought to life!

Conclusion and Future Outlook

This project was initiated with the aim of engaging municipalities across the Nordic region to collaborate on finding and piloting solutions for a more sustainable harbour and cruise tourism. The original goal of implementing three innovation pilots was met and surpassed due to the dedicated efforts of partners in the project. Thus this project has seen the design, planning and launch of six live innovation pilots in harbour towns across six Nordic countries. It is the hope that the innovation pilots presented in this report will serve as inspiration for increased innovation and collaboration efforts across the Nordic region.

The outbreak of the Covid-19 pandemic in 2020 almost completely paralysed all tourism activities in most regions of the world, including the Nordics. For that reason the pilots were executed as small scale demonstrations of technologies that can be scaled up after the pandemic. The forced inactivity of the cruise tourism industry during the project period also provided a significant obstacle to the collaboration with cruise operators in the pilots. However, as the chosen pilots were selected due to their suitability to scale, this project and its findings build an important basis for further work.

Photo by Ben Esteves on Unsplash

All the piloted solutions incorporated circular aspects such as using access-over-ownership, product-as-a-service models as well as digital rental and sharing platform models. Circular thinking, i.e. the efficient use of resources, abolishing wasteful and pollutive practices and restoring ecosystems, can be combined with digitalisation for great effect. Designing your pilot with these notions in mind is essential when innovating for sustainability.

Moving harbour tourism in the Nordic region towards more environmental, cultural, and financial sustainability is a large scale and long ranging undertaking. It will take collaboration between many public and private stakeholders, ranging from harbour town municipalities to cruise operators, in order to develop mutually beneficial solutions for everyone involved. If such a vision of mutual benefit can be established for the stakeholders in Nordic harbour tourism, the motivation to realise that vision increases greatly.

Further positive developments are possible – if all involved parties increase collaboration, across regional borders and across sectors, a sustainable cruise and harbour tourism industry can be effectuated. 'The Sustainable Tourism in Nordic Harbour Towns' project has laid part of the foundation – let's build upon it.

Photo by Ben Esteves on Unsplash

Photo by Steffen Muldbjerg on Unsplash

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