

# MaaS Playbook

Putting users at the  
heart of mobility in  
Central Scotland

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PREPARED FOR:





## TACTRAN

Tactran is one of seven statutory Regional Transport Partnerships covering the whole of Scotland. The Tactran region includes the local authority areas of Angus, Dundee City, Perth & Kinross and Stirling. The primary purpose of the Partnership is to develop a Regional Transport Strategy setting out a vision for the medium to long term future of transport in the area and to oversee its implementation.

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The way that we use transport and the way that is delivered are changing.

# Transport is changing



# Introduction

Mobility as a Service (MaaS) is central to the ideas of change in the transportation of people and goods.



Several converging market forces, social trends and advances in technology have started to reshape our understanding, experiences and expectations of how transport is delivered.

Mobility as a Service (MaaS) is central to these ideas of change in the transportation of people and goods. MaaS puts users at the heart of transport services by offering tailor made solutions based on individual needs that provide easy access to the most appropriate transport mode or service as part of an integrated bundle of flexible options.

This playbook establishes the context for successful deployment of new MaaS solutions in Angus, Dundee, Perth & Kinross and Stirling. It also identifies potential projects (or “plays”) to help Tactran prioritise opportunities for investment and to help the region to capitalise on the opportunities offered by MaaS.

**MaaS puts users at the heart of transport services**





MaaS offers the potential to move more people and goods in a way that is faster, cleaner, and less expensive than current options.



# MaaS

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Technology allows people to directly interact with services

There are several related developments that underpin the MaaS revolution.

The first is advances in technology. Notable developments include sophisticated algorithms for scheduling routes and trips, GIS-based tracking of vehicles, the electrification and automation of vehicles, and mobile apps that enable customers to directly interact with services and receive real-time updates.

These technologies have in turn enabled the emergence of new mobility services beyond the traditional modes of private cars, bicycles, buses, taxis and trains. These new services include bikeshare, car clubs, on-demand carpooling and shuttling, and transportation network companies such as Uber and Lyft.

MaaS gives customers a single interface through which they can access a range of transportation services in their community. This includes seamless journey planning across modes, flexible and integrated payments and personalised services based on user preferences.

MaaS also offers a way to collect data in an anonymised and aggregated form. This can help transport planners to better understand when and where individuals are travelling and by which mode. It can also be used to optimise existing transport networks, distribute demand across modes and to prioritise necessary infrastructure enhancements.



# Mobility as a Service

Imagine a world where travellers move seamlessly from place to place.

Where they stipulate their journey and travel preferences on an app, computer or kiosk, and are presented with journey choices, according to their preferences, which fully integrate public and private transport modes.

Where payment happens automatically, using a processing method of their choice.

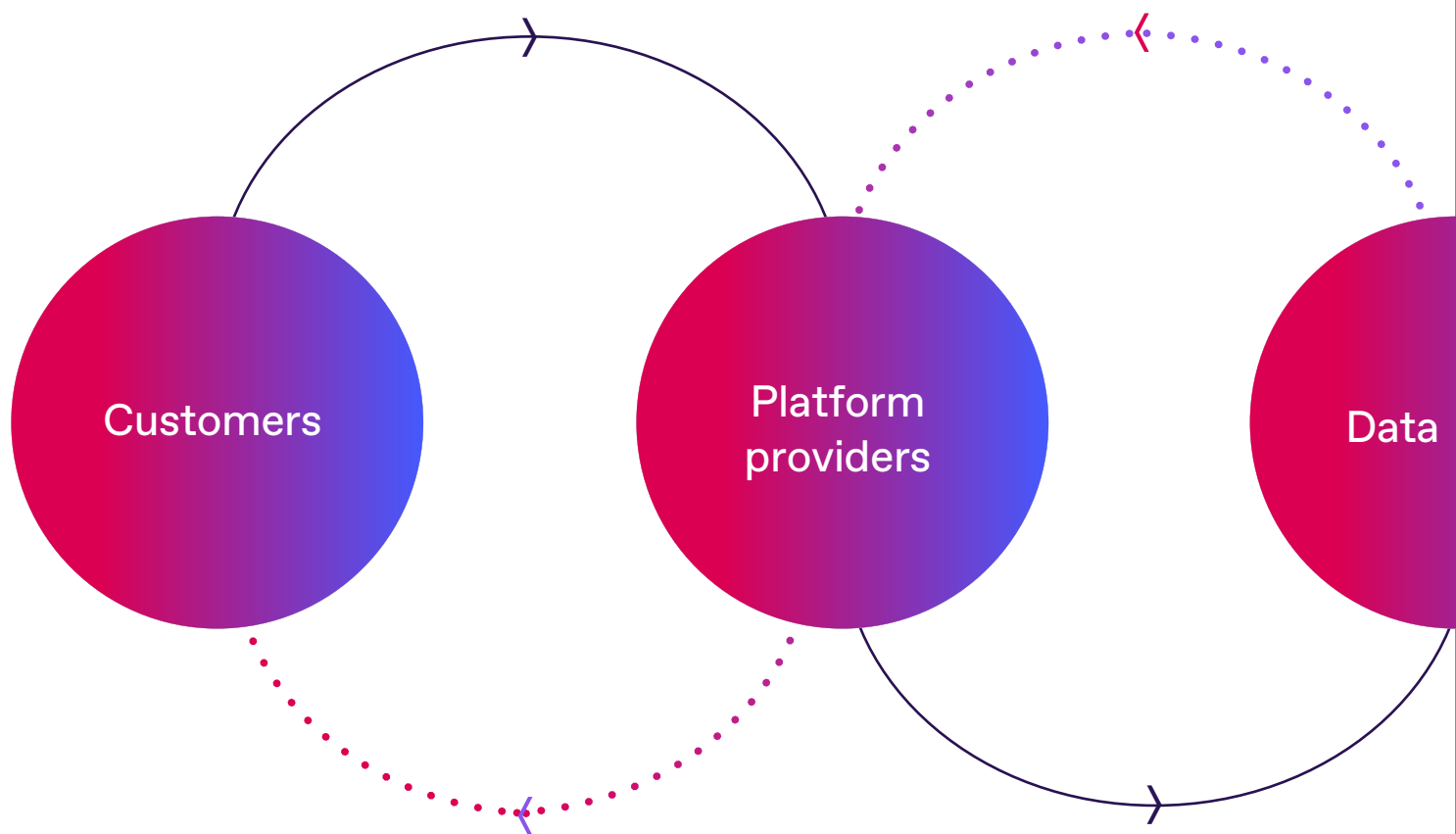
Where the transition from one mode of transport to another is straightforward, perfectly timed and effortless.

Where congestion is minimised, air quality improved, and passenger comfort enhanced.

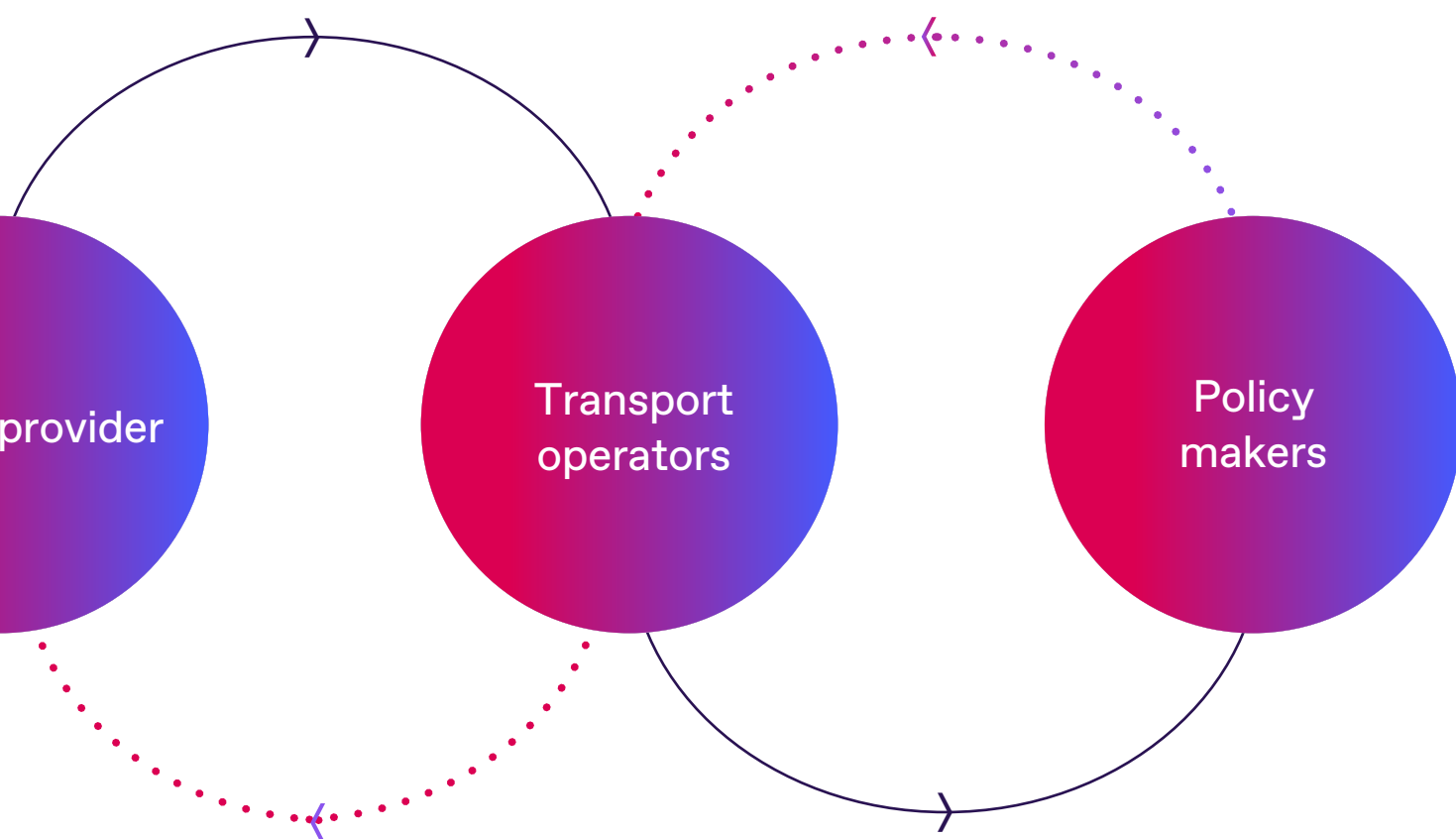
And where there's plenty of on-demand travel options, and users have ready access to real-time journey information and an integrated journey planning platform.<sup>1</sup>

# MaaS Ecosystem

MaaS refers to a spectrum of solutions that depend on a network of interconnected actors.







# Levels of Integration

MaaS solutions can be considered in relation to the level of integration achieved.

The goal for MaaS is to be fully integrated with local transport networks

The level of service integration achieved by MaaS solutions, ranges from single separate services, to MaaS being a core component of local transportation networks.

Levels of integration of MaaS solutions:<sup>2</sup>

Level 0	<b>No integration</b> Independent separate services.
Level 1	<b>Integration of information</b> Support for finding the best trip, with a single trip focus.
Level 2	<b>Integration of booking and payment</b> A one-stop shop where the user can find, book, and pay for trips that use services from multiple operators.
Level 3	<b>Integration of the service offer</b> Addition of a bundled service-layer (possibly subscription-based) with a focus on the customer's complete mobility needs.
Level 4	<b>Integration into local transport networks</b> Integrating the technologies and payment systems into general public policy and governance structures. This requires full participation of local transport authorities, making MaaS a core component of the transportation network.

2. Adapted from Sochor et al. (2017) A topological approach to Mobility as a Service



# Benefits of MaaS

Many of the reported benefits of MaaS are linked to encouraging people to use public and shared modes of transport.

## MaaS data can identify gaps in rural transport services

In large urban areas, MaaS gives customers flexibility to decide between modes, schedules and price points. In rural communities MaaS can provide data-led intelligence to identify service gaps which can be filled by incorporating new mobility solutions into the network.

Many of the reported benefits of MaaS are linked to encouraging people to use public and shared modes of transport rather than private cars. These include:

- Improving the quality and convenience of travel.
- Redistributing travellers to their most efficient mode of transport, in terms of cost and other factors.
- Reducing overall transport times by informing network improvements.
- Enabling better monitoring, management and planning of mobility services.
- Potentially lowering traffic congestion and the environmental impact of transport.
- Lowering the cost of mobility by widening the range of suppliers and increasing accessibility.
- Enabling revenue growth for transport service providers, either by opening new revenue sources or enlarging the market.
- Increasing regional responsiveness to the evolution and emergence of new transport services.

# Policy Landscape

There are a range of local, national and UK policy objectives that support the development of MaaS..

Up to £2m to support MaaS solutions in Scotland

The Scottish Government underlined its commitment to MaaS in September 2018 when the First Minister announced a MaaS investment fund.

Up to £2 million in funds will be provided from 2019-21 to fund projects to grow the evidence base on the potential for the upscale and delivery of MaaS solutions in Scotland.

In terms of related policies, one of the key themes of Transport Scotland's Future Intelligent Transport Systems Strategy<sup>3</sup> is deploying new technologies to positively support users travelling across the road network. This includes supporting the move to more connected, cooperative and autonomous vehicles, and the concept of MaaS.

Transport Scotland's current smart ticketing strategy aligns with the intent of MaaS by moving towards account-based ticketing and travel. Transport Scotland's Switched On Scotland Action Plan<sup>4</sup> also emphasises the importance of emerging mobility services in improving the cost, convenience and overall experience of using electric vehicles.

MaaS also supports the Scottish Government's Economic Strategy to improve infrastructure and connect communities to key employment locations.

At the UK-level, the Government's intention is set out in the Future of Mobility Grand Challenge in the Industrial Strategy White Paper<sup>5</sup>. It establishes the ambition for the UK to become a world leader in shaping the future of mobility. It also sets four more specific early priorities to:

- Prepare for new mobility services.
- Encourage greener travel.
- Support new modes of transport and business models.
- Explore the use of data in improving the use of transport systems.

The Scottish Cities Alliance's Smart Cities Scotland Blueprint<sup>6</sup> identifies MaaS as one of five priority areas for collaborative investment. It sets the ambition for Scotland's cities to work together to test, develop and commercialise smart mobility solutions that will be unified by a national MaaS platform that combines transport options from different providers across Scotland, handling everything from travel planning to payments.

Scotland is also home to the largest MaaS Cluster in Europe which is coordinated by MaaS Scotland<sup>7</sup>. Its aim is to lead the conversation and highlighting the social, environmental and economic benefits of MaaS to key stakeholders.

3. Transport Scotland (2017) Future Intelligent Transport Systems Strategy

4. Transport Scotland (2017) Switched On Scotland Phase Two: An Action Plan for Growth

5. HM Government (2017) Industrial Strategy: Building a Britain Fit for the Future

6. Urban Foresight (2016) Smart Cities Scotland Blueprint, Scottish Cities Alliance

7. <https://maas-scotland.com/>





Image credit: Tactran







The Tactran region includes the local authority areas of Angus, Dundee City, Perth & Kinross and Stirling which together make up just under 10% of Scotland's land mass and nearly 12% of the nation's population.

# MaaS Priorities



# Priorities for the Tactran Region

The Tactran region lies at the heart of Scotland's transport network, connecting the nation's seven city regions with each other.

Forecasts suggest that the population in the region will increase by over 14% by the year 2036.

Key mobility challenges faced in the region include:

## Congestion

The region currently suffers from congestion and unreliable journey times, with hotspots around Dundee and Perth. Poor connectivity impacts on the competitiveness of businesses and those who access markets through the region.

Issues of network and train capacity, lengthy journey times and overcrowding, limit the attractiveness and effectiveness of rail for commuting, business and leisure travel. This also constrains the potential for movement of goods by rail.

## Connectivity

Road and rail connectivity to key economic drivers such as ports and visitor attractions are also sub-optimal, as is air and international connectivity through Dundee and Edinburgh Airports.

The majority of people live and work in the region and connecting the workforce with employment opportunities is vitally important. Lack of mobility, excessive journey times and availability of viable and affordable public transport options contribute to a mismatch between where vacancies exist and where people live. It also remains important that residents are able to access employment opportunities outside the region.

Across the region, 11.3% of the working age population (approx. 6,527) without access to a car have access to a limited number of employment centres (1 or 2 centres) within 60 minutes by public transport. In addition, 6.6% (approx. 3,810) of working age residents without access to a car do not have access to any employment centre by public transport.

## Access to Services

The rurality of much of the Tactran region adds to the challenges of providing efficient access to services. Journey distances are often long and public transport services are limited in some places.

Large parts of the region are amongst the most access deprived areas in Scotland. For example, 17% of Stirling, 20% of Angus and 21% of Perth & Kinross data zones are in the 10% most access deprived areas across Scotland.

In Angus, Stirling and Perth & Kinross between 10% and 13% of the population have no access by public transport to a GP. This amounts to approximately 40,428 people across the region, of which 1,382 live in households without access to a car.

Across the region, 8.3% (approx. 5,243) of 16-24 year olds are not able to access further education by public transport. A further 4.9% (approx. 3,100) are over 60 minutes away by public transport. In Perth & Kinross 15.1% (approx. 2,173) of 16-24yr olds cannot access further education by public transport.

The economic opportunity for MaaS in Scotland has been estimated at up to £480m with estimates of the global market ranging from \$6.5tr to \$13tr by 2020.<sup>7</sup>

## Air Quality

While there has been a slight improvement at monitored sites across the region, there remain incidences above air quality thresholds. Air quality management areas have been designated in three locations in the Tactran region: one covers all of the Dundee City Council area, one the main built-up area of Perth and the third an area in and around Crieff High Street. Dundee will introduce a Low Emission Zone to reduce pollution from traffic in 2020.

## Active Travel

Promoting active travel is a strategic priority of the Tactran Health & Transport Framework with the goal of increasing rates of walking, cycling and other related modes, in order to promote and enable access to active travel to improve people's health. Particular focus in the region's Local Outcomes Improvement Plan is placed on the links of active travel to school and the activity and health levels of children.

## Transport Poverty

The global economic downturn has led to significant cuts to public transport subsidies. This has had the effect of making bus and rail services less attractive and less viable in many areas.

Social influences include the rising proportion of elderly people who will no longer be able to drive, and younger people who are likely to continue to be increasingly excluded from car ownership and use through more demanding driving tests and rising insurance premiums, as well as attitudinal factors.<sup>8</sup>

## Economic Opportunity

Dundee is an internationally recognised hub of digital excellence particularly in terms of software development, technology services and mobile app development. Dundee now has the third fastest growing digital turnover in the UK and many companies, particularly software firms, are operating on a global scale.

Notable companies in the region include Stagecoach Group, which is headquartered in Perth and Journeycall, which is based in Arbroath. The region also benefits from world class digital connectivity across both urban and rural areas.

7. Hazel (2017) Scottish Enterprise Report

8. Delbosc and Currie (2013) Causes of Youth Licensing Decline: A Synthesis of Evidence. *Transport Reviews*, 33(3), 271–290.

# Ten Guiding Principles for MaaS Solutions

To support the successful implementation of MaaS solutions in the Tactran region, it is recommended that investments strive to achieve ten key outcomes:

## 1/ User-centric

Place customers at the heart of all MaaS solutions and enable end-users to co-design personalised mobility experiences that satisfy changing needs and expectations.

## 2/ Flexible

Use MaaS to add more variability into the supply side of transportation and test these solutions in a wide variety of conditions.

## 3/ Seamless

Make the integration of services invisible to end-users and facilitate seamless door-to-door mobility solutions that are simple, responsive and automated.

## 4/ Open

Place all players on equal terms by encouraging suppliers along the value chain to open their Application Programming Interfaces (API), share data and allow third party providers to buy and resell their services through their own applications.

## 5/ Trusted

Build trust with end-users with secure and reliable solutions based on the best cost, optimal times and individual preferences. Service providers also need to trust that route and fare information from other partners is accurate, that users are being encouraged to use their system where it represents the best option and that they will get paid accordingly.

## 6/ Valuable

Avoid being led by technology by ensuring that support and investments in MaaS solutions are based on clearly defined social, environmental and economic benefits.

## 7/ Inclusive

Ensure that MaaS services do not solely cater for wealthier, digitally connected users who live in urban areas, but also improve mobility for poorer or more isolated communities and those with disabilities.

## 8/ Interoperable

Wherever possible, ensure that different MaaS platforms can be integrated to provide a regional and ideally national system of mobility to allow users to travel freely across municipal boundaries and without needing to join several different systems.

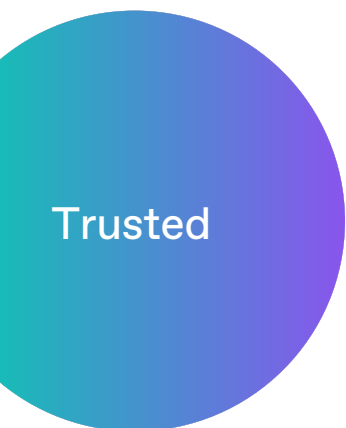
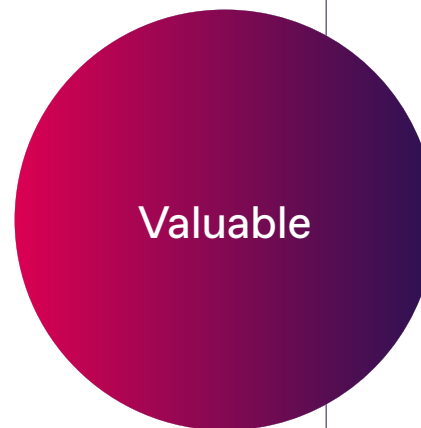
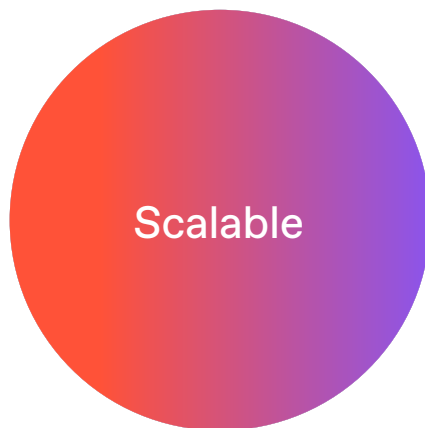
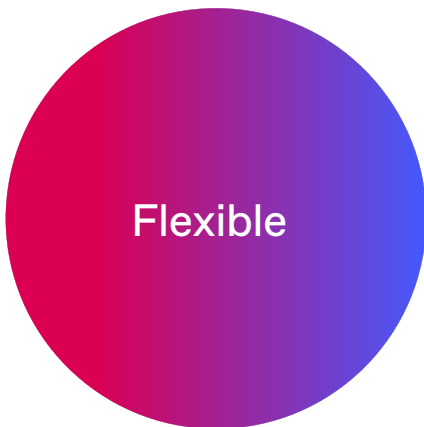
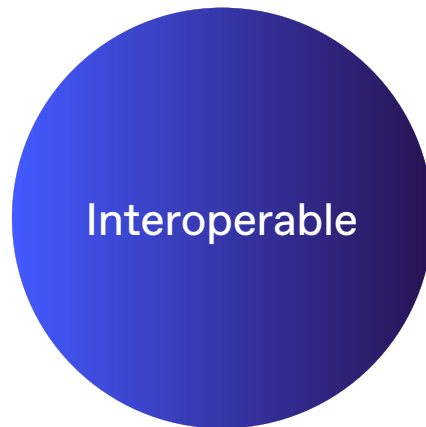
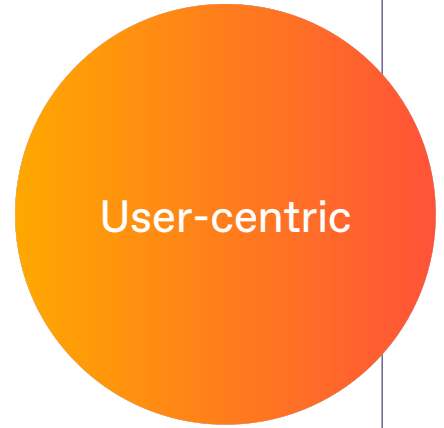
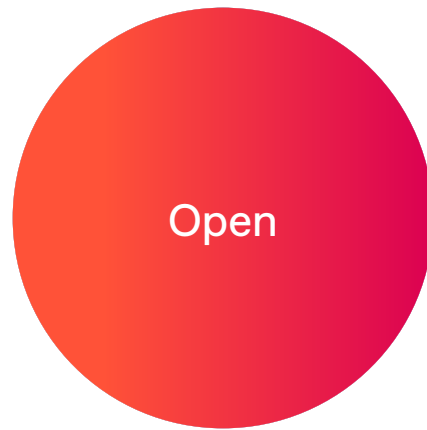
## 9/ Intelligent

Harness data and analytics to continually improve the design and delivery of mobility services that can predict and respond to events in real-time and make personalised recommendations that enhance the customer experience.

## 10/ Scalable

Where pilots demonstrate the potential to deliver ongoing benefits with a rational business case, appropriate support should be secured to sustain and scale these services across the region.





# MaaS in the Region

The Tactran region is already leading the way in delivering MaaS solutions and a range of innovative mobility services.

## Mobility Platforms

### NaviGoGo

NaviGoGo was Scotland's first MaaS pilot. Over a six month period between October 2017 and March 2018, 98 young people in Dundee and North East Fife were able to access a single hub that provided streamlined and personalised information, payment and fulfilment for trains, taxis, bike schemes, buses, car clubs and walking. The project was a partnership between ESP Group, SYSTRA, Young Scot, Mudlark, RouteMonkey, and the Scottish National Entitlement Programme Office (NECPO), and was part funded by Innovate UK.

### The MILL

The MILL (Mobility Innovation Living Lab) is a flagship innovation centre in Dundee to make the city an international test bed for smart mobility solutions. It was established in 2017 to provide end-to-end support to businesses in developing, testing and commercialising innovative mobility products and services. This includes brokering access to Dundee's infrastructure, data and end-users, as well as supporting the scale-up of solutions to other Scottish cities and around the world. The MILL is managed by Dundee-based Urban Foresight and is funded by Dundee City Council, the Scottish Cities Alliance and the European Regional Development Fund.

### ShareMORE

A key objective of The MILL is to achieve integration between the innovative mobility services that are being developed in Dundee. The suppliers procured to deliver the first wave of pilots for The MILL have agreed to share real-time data to facilitate the development of a system that allows Dundee City Council to act as a trusted neutral broker of an independent mobility marketplace. The ambition is to enable competing MaaS platforms and mobility services to successfully operate in the city and to develop a platform that shares data in real time to support integration across transport modes. The first

phase of development will begin in 2019 and will focus on achieving integration between operators of car clubs, bike sharing, cashless parking and EV charging.

### Explore Stirling Mobile App

Explore Stirling is a travel and culture guide to interesting sights and places as well as the stories, songs and music behind them. The routes not only cover Stirling City Centre, but cycling and driving routes take you on scenic tours through the Trossachs to Aberfoyle and Callander, around Loch Katrine and many more.

### GoToo

GoToo is the travel information website for the region. It offers visitors, locals and commuters information on their travel options as well as links to what's on in the region. The useful local journey planner provides users with quick and easy routes either on foot, by bicycle, by public transport or by car to their desired location. The site offers real time travel information for rail, bus and road routes across the region as well as information on Park and Ride facilities.

### Dundee Travel Info

Dundee City Council's website for all public transport and travel need in and around Dundee.

### Tactran Liftshare

Tactran Liftshare is a car sharing database and website. It is part of the national Liftshare database and has more than 4,000 members, with good coverage across the region.

## Smart Ticketing & Payment

### National Entitlement Card

The National Entitlement Card (NEC) is Scotland's National Smartcard. Supported by Scottish Government to deliver national and local services, the NEC makes it convenient for citizens to access various public services and facilities with only one card. Dundee City Council is the lead authority on behalf of all Scottish Councils for developing the National Entitlement Card and provides this to Councils and the Scottish Government as a shared card management service.

### Dundee Student Smart Travel

In 2014, Dundee College piloted a smart travel product that enabled eligible students to opt for smart travel as their travel bursary as opposed to a spot payment system. The bursary was added to the students' National Entitlement Card and transport operator National Express enhanced the value by including the mid-term April break without charge, making the product run from the start of term in January through to the end of a course in summer. The pilot proved successful for the students, the college and transport operators. It also generated evidence that Smart Travel for students eligible for bursaries leads to improved outcomes in relation to attendance, transport modal shift and wider social inclusion benefits.

### Cashless Parking Payment

Cashless parking services are provided in each of the local authorities in the Tactran region. However, in

2019 a new app-based service will be piloted in Dundee by JustPark that encourages drivers to visit local businesses and provides information on available parking spaces. The new system will also reduce the administration fee that drivers currently pay for cashless parking in the city.

### ABC Card

Dundee's three bus operators are among the first in Scotland to offer a multi-operator bus ticket. The ABC (All Bus Companies) tickets allow passengers to travel across Dundee and the surrounding area using three different companies. Payments are loaded onto each company's existing smartcard product and any other city-wide smartcards, including the National Entitlement Card. The partnership also involves Dundee City Council and Angus Council, and is supported by Transport Scotland and the Scottish Cities Alliance.

### Perth Student Smart Travel

In late 2016, Perth College UHI introduced a Smart Travel product for the target group of students using a Stagecoach Unirider product that would permit unlimited travel, based on home location, throughout various zones. The platform used to deliver this project was the National Entitlement Card, branded as a Young Scot Card. Through a partnership with Abellio Scotrail, the project was extended to allow supported students to have the rail component of their journey put on the National Entitlement Card.



## New Mobility Services

### Electric Bike Sharing

Scotland's first large-scale electric bike sharing scheme will be launched in Dundee in 2019. An initial 250 electric bikes will be deployed across Dundee, with more bikes planned as demand grows. The service will be delivered by Ride On, which operates similar schemes in Madrid and Miami. Users of the scheme will benefit from Ride On's proprietary integrated software that connects its e-bikes with its website, smartphone app and recharging stations.

### Bike & Go

Bike & Go is a flexible bike hire scheme available at 12 train stations in Scotland, including Dundee, Perth and Stirling. The scheme is provided by Abellio as an added value service as part of the Scotrail franchise.

### Nextbike

A bike share scheme operating in Stirling since 2014 with 160 bikes across 23 stations.

### Fleet Sharing

Dundee City Council is working with Enterprise Car Club to develop a new model that will enable its pool car vehicles to be shared with other fleets. Existing pool car vehicles will be replaced with a new electric car club fleet, saving the Council time, money and CO<sub>2</sub> in managing these operations. A new booking system and in-vehicle telematics will make it easier for council staff to access the vehicles. This technology will also facilitate the sharing of vehicles with Police Scotland and potentially other businesses across the city.

### Social Care Car Club

A new all electric car club will be introduced in Dundee in 2019 to drive down the expense and emissions from employees using their own vehicles for work. Delivered by E-Car Club, the pilot will focus on providing vehicles to staff in the adult social care sector who would otherwise use their own private vehicles for work-based travel. It is estimated

that the pilot could save care providers up to £22,000 per year by reducing the cost of reimbursing mileage expenses.

### Community Minibuses

Dundee City Council is working with Co-Wheels Car Club to optimise the use of its community minibuses. The minibuses currently have a relatively low rate of utilisation and are expensive to operate. A new booking platform and in-vehicle telematics will allow community groups across the city to access the minibuses, delivering a new shared mobility service and reducing the cost to the public sector of operating these vehicles.

### Car Club Drop Off Zones

Co-Wheels will trial software and hardware solutions in Dundee that would facilitate the development of Scotland's first free floating car club. In a pilot with Dundee City Council, geofenced pick-up and drop-off zones will be introduced which mean that car club users no longer have to rigidly stick to returning vehicles to a designated bay. The development of one-way car clubs, as opposed to the existing round-trip rental model, could ultimately increase the convenience, flexibility and affordability of car clubs as a viable alternative to private car use.

### Killin and District Volunteer Car Scheme

A door-to-door voluntary car service for inhabitants of Killin and the surrounding district, where there is a need to access services, which are essential and/or in the interest of their general wellbeing. The service is provided by volunteer drivers who use their cars to provide transport.

### Demand Responsive Transport (DRT) System

A new booking system for a council-backed rural transport service was launched in Stirlingshire in January 2019 to give customers a simpler and more flexible way of booking and managing their journeys. DRT (Demand Responsive Transport) links rural areas where there are few or no conventional bus

services, operating like a taxi but charging close to the cost of a bus fare. The service facilitates more than 23,000 passenger journeys annually and is supported by analysis of journey data to identify improvements.

### Smart Parking Sensors

Over 1,000 bluetooth sensors will be installed across Dundee from 2019 onwards as part of Scotland's largest smart parking project. It will include both on-street residential and city centre parking, with the aim to reduce congestion, improve enforcement and allow people to pay based on the duration of their stay. The service will be provided by Atkins and AppyParking, with users able to see real-time availability of spaces, with navigation and single click payments for a parking session using a mobile app.

### Perth West Regional Logistics, Fulfilment and Business Innovation Park

A project being progressed by the John Dewar Lamberkin Trust to deliver 20 hectares of

employment space on the outskirts of Perth. The development will provide space, facilities and infrastructure for research and development into low carbon technologies and, crucially, their application, including sustainable transport and associated energy production, progressive manufacturing facility and logistics and fulfilment park; a central logistics containment site with shared warehousing, cold storage and packing for food and drink and medicine, centred around fulfilment capability.

### Electric Vehicle Charging Hubs

Innovative EV charging hubs are being developed across the region. Dundee City Council, which in 2018 was named Europe's most visionary EV city, has built three hubs across the city, which provide multiple charging points with linked renewables and energy storage. One of the Dundee hubs also includes a electric car club vehicle, which has seen a marked increase in use since it was relocated from elsewhere in the city. Funding for EV charging hubs has also been secured in Perth and Angus.



Six projects are proposed to prioritise Tactran's efforts in supporting the development of MaaS across the region.



# MaaS Plays

These projects recognise the need to work to embed MaaS in public transport policy, support the development of new mobility services and to facilitate the introduction of flexible mobility platforms to satisfy diverse travel and transport needs.



## Objective 1

## Embed MaaS in local transport networks

Secure participation of local transport authorities and suppliers of mobility services to make MaaS a core component of the regional transportation network.

## Play #1A

### Mobility Ecosystem Review

○ Defining the potential for integration of mobility services across the region.

## Play #1B

### MaaS Working Group

○ A collaborative forum that brings together key stakeholders to work towards greater integration of mobility services.

## Objective 2

## Create a regional mobility marketplace

Facilitate data sharing, modal integration and convenient access to mobility services.

## Play #2A

### ShareMORE+

○ An open and independent regional marketplace for mobility data and services.

## Play #2B

### NEC Integration

○ A common standard for accessing and paying for mobility services.

## Objective 3

## Introduce new mobility services

Increase the choice, flexibility and quality of mobility services for the transport of people and goods.

## Play #3A

### Rural Connectivity

○ Improving access to employment, education and healthcare.

## Play #3B

### First/ Last Mile Logistics

○ Real-time scheduling optimisation to reduce congestion and emissions.

# Play #1A

## Mobility Ecosystem Review



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### Defining the potential for integration of mobility services.

MaaS solutions depend on a network of interconnected actors. Therefore, a necessary first step towards the goal of seamless integration is to develop a comprehensive understanding of mobility services across the region. This includes the suppliers and contractual status of both existing and planned investments.

A specific focus is the potential for suppliers of publicly funded mobility services and infrastructure to be incentivised to share data and work towards integrated service offerings.

Key outputs of this review include:

#### Service contracts

The legal, technical and contractual arrangements associated with existing and planned mobility services and transport systems.

#### Data audit

What data is available and required to support greater integration of mobility services across the region.

#### Opportunities for integration

Engagement with operators of mobility services to review opportunities for data sharing and integration.

#### Shared vision

Developing consensus among stakeholders on the MaaS opportunity and priorities for the region.

# Play #1B

## MaaS Working Group



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### A collaborative forum to achieve service integration

While much of the focus in MaaS is on the technology and standards to achieve interoperability, perhaps the biggest challenge in service integration is to reach commercial and legal agreements between competing suppliers.

To support this process it is recommended that a working group is formed that brings together key

stakeholders from across the public and private sector. The overarching purpose of the working group will be to build trust and support for the necessary changes required to develop MaaS solutions across the region.

Key challenges the working group would be tasked to address include:

Open  
ecosystem

How to incentivise mobility operators to share data and APIs.

Flexible  
services

Increasing the flexibility and choice of services across the region without unfairly penalising existing transport operators.

Inward  
investment

How to attract investments in MaaS solutions to the region.

MaaS  
readiness

How Tactran and its public sector partners can support the development of MaaS solutions.

# Play #2A

## ShareMORE+



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### An open and independent regional mobility marketplace

The ShareMORE platform in Dundee will integrate operators of car clubs, bike sharing, parking and EV charging services in the city. The platform will position the Council as an honest broker of the growing number of mobility services for individuals and businesses.

The innovative approach of having a public sector organisation take this role will negate some of the legal

and commercial challenges related to integration with a private broker. It will also potentially provide a cost-effective way to deliver subsidised and funded mobility services administered by the public sector.

It is proposed that Tactran works with Dundee City Council and its partners to create a full development roadmap for the ShareMORE platform, including:

#### Mobility service integration

Integration with other mobility services in the city (including buses, taxis and rail).

#### Regional integration

Integration of mobility services in the wider region.

#### NEC integration

Integration with the National Entitlement Card.

#### Data sharing

Protocols for sharing real-time data to third party developers to create new mobility apps and services.



# Play #2B

## National Entitlement Card Integration



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### A common standard for accessing and paying for services

The National Entitlement Card (NEC) provides a common standard for accessing and paying for mobility services across Scotland. The Tactran region enjoys a relatively high penetration of these smart cards. For example, in Dundee 95 per cent of 16-18 year olds and 93 per cent of over 60s have an NEC.

Smart travel pilots have shown that NEC provides a convenient way to pay for mobility services.

These pilots also delivered cost efficiencies to public sector organisations that administer travel bursaries and to the operators of transport services. Some of these savings have even been passed onto customers.

It is recommended that Tactran works closely with the NEC team, Transport Scotland and the Scottish Government Improvement Service to:

Engage  
transport  
operators

Engage with transport operators to encourage integration with NEC.

ETM  
deployment

Support the deployment of electronic ticketing machines to pay for mobility services.

Smart  
procurement

Engage with procurers of transport services to request provision for NEC integration in all new contracts.

Public  
awareness

Support communication campaigns that promote the benefits of using NEC to pay for mobility services.

# Play #3A

## Rural Connectivity



30

### Improving access to employment, education and healthcare

Accessible and affordable transport is a lifeline for many rural residents. It connects people to opportunities for socialising, working, learning and healthcare. Effective transport networks enable rural communities to contribute to economic growth and support diverse and thriving populations.

The rurality and low population density of much of the

Tactran region makes providing practical and affordable public transport difficult, especially given ongoing cuts to public funding.

Rural MaaS is still a nascent area. Similarly innovation in mobility services has largely focused on urban transportation. Opportunities for smart rural transport include:

#### Improved digital engagement

Increase the visibility of rural transport services, facilitate easier booking and enable passengers to easily signal their travel needs.

#### New data sources

Accessing and interpreting new data sources and modelling techniques to plan a more efficient network.

#### New sharing models

Peer to peer mobility services and exploiting spare capacity in public sector fleets by making these vehicles available to the public.

#### Urban-rural integration

Better integration of rural and urban mobility services such as car clubs.



# Play #3B

## First/Last Mile Logistics



31

### Real-time optimisation to reduce congestion and emissions

Energy efficiency and environmental issues have been largely neglected in logistics. This is especially relevant in first mile and last mile delivery logistics, where deliveries are composed of individual orders that must be picked up and delivered at different locations.

A regional consolidation centre for the logistics sector with a last mile delivery platform is being developed on the western edge of Perth. This part of a 180 hectare

development that includes a smart energy grid and an "Innovation Highway" to enable, at a city scale, the distribution of goods and people and testing of new mobility models. This is being advanced through a Memorandum of Understanding between the landowner and Perth & Kinross Council. Mobility services to be tested could include:

#### Real-time scheduling

Real-time scheduling and assignment optimisation (e.g. integrated inventory management, dynamic routing, courier collaboration and proof-of-delivery).

#### Personalised services

Data-driven, personalised customer experiences

#### Zero Emission Transport

Integration of zero emission transport modes (e.g. electric vehicles, cargo bikes, autonomous ground vehicles and drones).

#### New logistics models

New logistics models including flexible delivery offers, social delivery services and parcel lockers.

# Final Words

## Putting users at heart of mobility in Central Scotland



**Tom Flanagan**  
Partnership Director  
Tactran

**Moving beyond pilots to practical measures.**

This playbook establishes the context for successful deployment of new MaaS solutions in Angus, Dundee, Perth & Kinross and Stirling.

It also identifies potential projects (or “plays”) to help Tactran prioritise opportunities for investment and to help the region to capitalise on the potential offered by MaaS.

The task is now to take MaaS in the Tactran area to the next level, building on the success and experience of the projects to date and moving beyond pilots to practical measures that will build an exemplar model that can be scaled-up to a regional and potentially national application.

The next step is that over the summer of 2019 Tactran will seek to commission a collaborative partnership that will develop a proposal(s) to respond to the MaaS Investment Fund. The MaaS Investment Fund provides £2m over three years to support the development of MaaS across the thematic areas of:

- Rural islands/ communities
- Tourism
- Accessibility

The MaaS solutions developed as part of this investment could cover one or more of the following layers:

### **Layer 1 - Journey Planning**

- All information on all transport modes presented to the user via a digital platform

### **Layer 2 - Payment**

- Incorporates the options of Pay-as-you-Go or as a subscription service

### **Layer 3 - Journey Management**

- Highlights incidents such as traffic congestion, weather, air quality,

The MaaS solution(s) should also incorporate the required facets of:

- **Personalisation** – the integration of personal data to enable personalisation of choices and preferred reward mechanisms;
- **Incentivisation** – the ability to incentivise people to use alternative services to personal car and link to reward preferences.

Tactran would expect the MaaS proposal to detail the benefits for environment and health, access and inclusivity, economy and innovation, efficiency and sustainability.

We look forward to engaging with you on an exciting future for MaaS in the Tactran region.





Image credit: Tactran

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# Acknowledgements

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With thanks to the following who contributed valuable insights to this work:

*Juliet Bell, Transport Scotland*

*John Berry, Dundee City Council*

*Elena Brown, National Entitlement Card*

*Graeme Brown, Tactran*

*Steve Cassidy, ESP*

*Heather Cowan, Transport Scotland*

*Mary Docherty, Transport Scotland*

*Mike Figures, Perth & Kinross Council*

*Tom Flanagan, Tactran*

*Neil Gellatly, Dundee City Council*

*Graham Pinfield, Perth & Kinross Council*

*Mark Richardson, Ristol Consulting*

*Alastair McInroy, MaaS Scotland*



