

Tactran ENABLE MaaS Programme Monitoring and Evaluation Report

v2.1

The customer journey does not start with “what bus do I catch?”. It starts with “I want to go to college”



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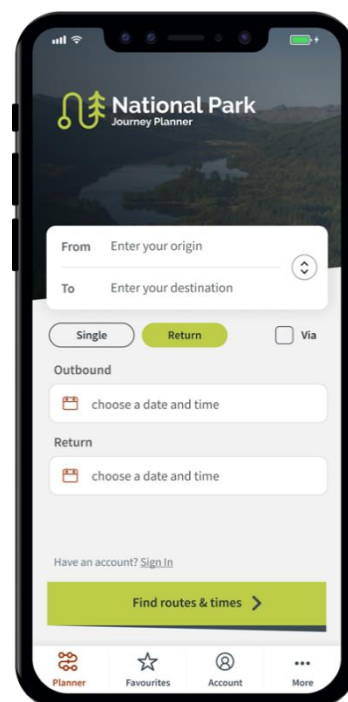
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Executive Summary

The Tactran ENABLE MaaS (Mobility as a Service) Programme piloted a model for developing and disseminating journey planning, booking and payment tools to enable users to access destinations and services by sustainable modes of travel, thereby supporting public sector objectives to reduce inequalities and take climate action.

The Tactran ENABLE programme is part of Transport Scotland's MaaS Investment Fund (MIF) programme introduced to help the Scottish Government understand if and how public MaaS products could be taken forward to support climate change and social inclusion objectives.

The purpose of this report is to highlight the achievements, and share the lessons learned, from the Tactran ENABLE programme to inform future MaaS programmes in Scotland.



THE PROBLEM

Providing an alternative to the car, whether for those with or without access to such, requires both provision of alternatives for the whole journey, but also information about what alternatives exist for the whole journey

There has never been a single source of journey planner information which gives information about all the travel options in their area (e.g. demand responsive transport, community transport, bike hire etc along with information about bus, rail and car journey times) that enables users to be aware of and informed about all the choices they have.

THE OPPORTUNITY

MaaS technology enables the co-ordinated planning, booking and paying of the complete range of transport services, enabling users to make the most of whatever services are available.

Transport Scotland's MaaS Investment Fund allowed Tactran to pilot a MaaS programme incorporating some of these features across the Angus, Dundee, Perth & Kinross, and Stirling Council areas.

THE PROGRAMME

The Tactran ENABLE MaaS Programme consists of:

- A MaaS platform: the 'back office' containing the software that enables the planning, booking and paying of a range of transport services
- Interfaces (apps/websites) designed with and for the users of three pilot services:
 - Dundee & Angus College
 - Loch Lomond and the Trossachs National Park Authority
 - NHS Tayside
- Communications and marketing programmes
- Monitoring and evaluation programme

Key features

- Bus journey time and cost information (via integration with Traveline Scotland)
- Ability to plan, book and pay for rail journeys (via integration with RailEasy)
- Ability to plan, book and pay for five taxi companies in the region (via the taxi aggregator Karhoo). Plus contact details and estimated fares for local taxis which operate in the region, but are not part of the aggregator
- Walk and cycle journey times
- Information (cost / contact details) for community transport operators appearing as a travel option in journey plan
- Information (costs / contact details) about demand responsive transport services (DRT) in the region linking to the Stirling Council DRT booking webpage powered by Trapeze
- Carbon calculator and days out features for the National Park Journey Planner
- Ability to plan Enterprise Car Club journeys in the Stirling area
- Ability to plan Nextbike bike hire

The programme differs from many MaaS programmes in that it uses multiple user interfaces targeted at specific user groups – compared to the majority of MaaS programmes which produce generic journey planning tools for the 'whole community'.

These user groups are at the centre of the design, review, improve, marketing and communications processes. The programme created the ecosystem to identify and give users what they need, maximising the utility and benefits of MaaS tools for users and public sector service providers.



The programme was built around the principle that the user journey does not start with, “where do I catch the bus” but “I want to go to College/to a hospital appointment / to the National Park.”

The Tactran ENABLE model focusses on getting the journey planners directly to the users themselves. Interfaces were developed for the end user of a specific organisation and branded and promoted the tool via the organisation itself.

It was assumed:

- The services are likely to have the best means for disseminating the tools directly to their users
- The user has greater trust in a tool which is branded and promoted by a service they use and are familiar with.

Working with the services we promoted the tools through:

- NHS Tayside hospital appointment letters, staff-net bulletin and NHS Tayside social media
- Correspondence from College, D&A college social media and internal comms
- The Loch Lomond and the Trossachs National Park Authority's website ('Getting to the Park')/ marketing, social media/newsletter; use of social media influencers

The programme to develop and trial the journey planning tools for the three services commenced in January 2020, but as consequence of the travel restrictions imposed in response to the Covid 19 pandemic, the launch of the live pilots was delayed until August and September 2021.



RESULTS

Between the launch in September 2021 and January 2023 the programme resulted in 14,641 user sessions planning 15,222 journeys.



The high proportion of returning users (*National Park Journey Planner 28%; GoNHS Tayside 12%; my D&A Travel 37%*) suggest user satisfaction with the tool

LEARNINGS

REDUCING INEQUALITIES: THERE IS A NEED

The survey results suggest that users of the apps may be more likely to experience travel difficulties in terms of:

Fewer travel options

- 93% of students who were users of myD&A travel had a reason that limited how they chose to travel, compared to 76% of non-users
 - 41% stated they had 'no-one to share a lift with' (26% for non-users)
- 16% of the National Park Journey Planner users reported having 'no access to a car or driving license' compared with 1% of non-users
- 17% of GoNHSTayside users do not have access to a car (13% of non-users)

Sensitivity to cost

- 31% of student myD&A travel users indicated they could not afford the alternative modes of travel (17% for non-users)
- 87% of GoNHSTayside users compared the cost of different journey options (19% for non-users)

Journey complexity

- 77% of student myDA&A travel users had used the app travelled by more than one mode of transport (49% for non-users)
- 87% of GoNHSTayside users had more than one journey part for their journey (39% for nonusers)

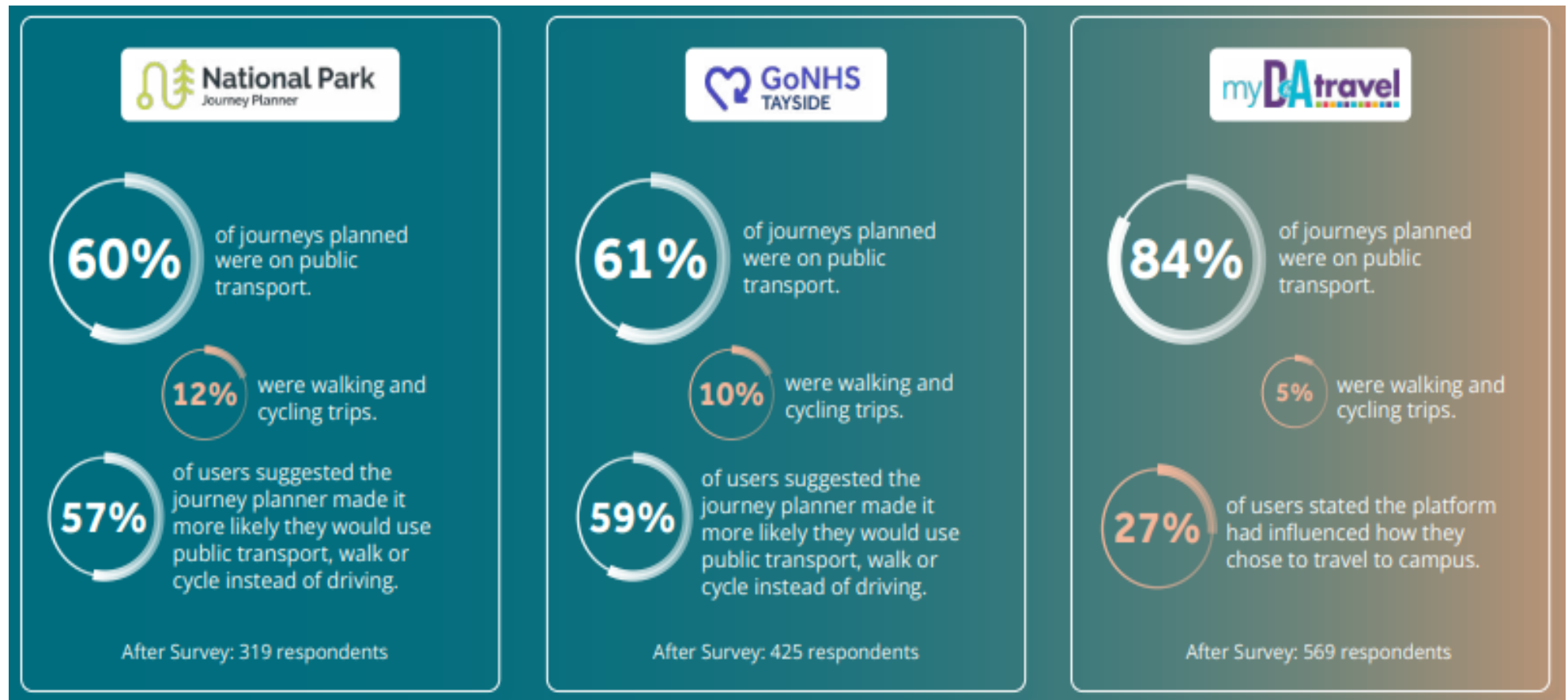
More likely to have a disability

- GoNHSTayside users are significantly more likely have a disability which affects their travel arrangements (61% users vs 9% non-users)
- MyD&A travel student users are more likely to have a disability which affects their travel arrangements (14% users vs 5% non-users)
- 17% of myD&A travel users mentioned 'poor health' as a limiting factor to the way they travel (6% for non-users)

PROMOTING SUSTAINABLE TRAVEL

The modal share of journeys planned suggests the tools promote and support sustainable transport options:

- Most of the journeys planned were public transport journeys, with only a small proportion being walking and cycling journeys
- Users suggested that the tools made it more likely that they would use a sustainable mode of travel



THE TOOLS HAVE SUPPORTED THE PRIORITIES OF THE SERVICES

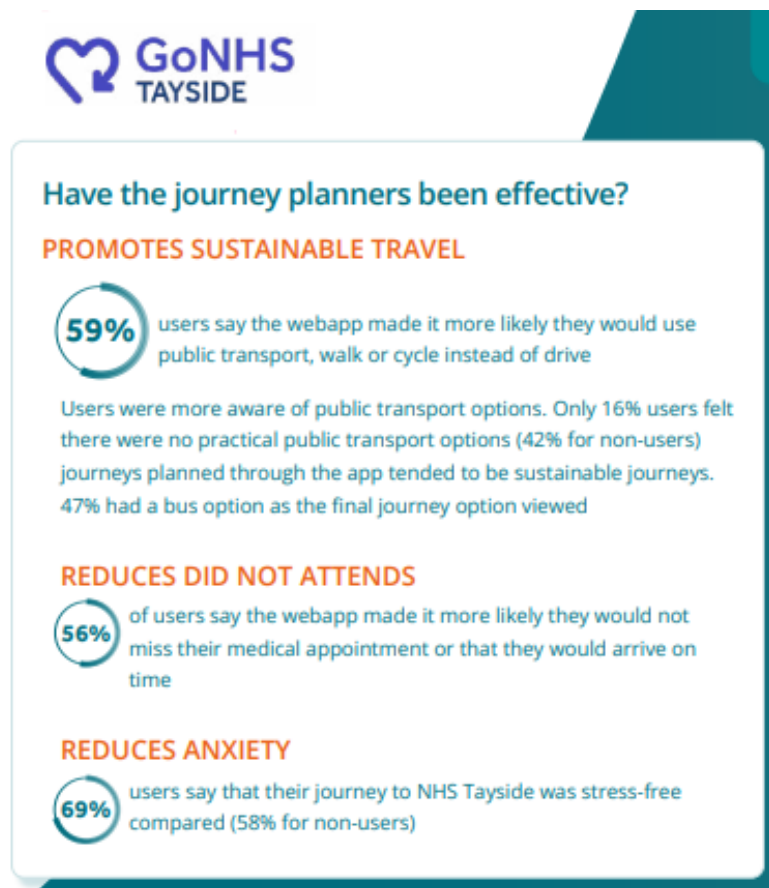
The programme has supported the climate change and social inclusion objectives of the Government, the Councils and Tactran by supporting:

The Loch Lomond and the Trossachs National Park Authority in addressing the impact of visitors accessing the Park by car

- Users were more aware than non-users of public transport options, and said that the journey planner made it more likely they would use public transport, walk or cycling instead of driving. This was evidenced by the journeys planned

NHS Tayside's aspirations to help user access services as well as help address the parking pressures on site. In addition to the promotion of sustainable modes noted previously:

- 56% of users suggested the journey planner made it more likely that they would arrive on time / and or not miss a medical appointment. Travel is one factor that can affect the proportion of appointments that are missed. 'Do not attends' (typically 11% in Tayside) are a significant cost and inefficiency to NHS service delivery.
- NHS officers noted the anxiety patients have when attending an appointment and how this can be amplified by concerns about how to get to the site.
- Survey results indicated that users of Go NHS Tayside were more likely than non-users to agree that their trip to the hospital was stress free



Dundee and Angus College provide further education for a large rural as well as urban area. The ability to access the College can therefore be a significant factor in which courses pupils can enrol in.

Furthermore, given the typical age range of the user group, the students, are more likely to be reliant on other forms of access (whether that be lifts or regular use of public transport) than those with their own car and require information either on a regular or infrequent basis of how best to access different sites on different days at different times to help ensure attendance.

34% of respondents who had used the my D&A travel app stated that their journey to college played a role in the decision to enrol on a course, whereas for non-app users, only 22% of respondents stated that the journey influenced their decision.



“I used the app to get from Perth to D&A College and it gave ne plenty of options from the cost of my fuel and the cheaper options of taking public transport. Very handy app” Dee, Student

“The D&A Travel app has helped me plan my travels, and it has helped me when I first started college as I was unsure of what bus I should take.” Kayla, Student

“The MyD&A Travel app allows our students and staff to see all of the potential travel options available to them and get the most sustainable way they can get to college” Simon Hewitt, Dundee and Angus College Principal

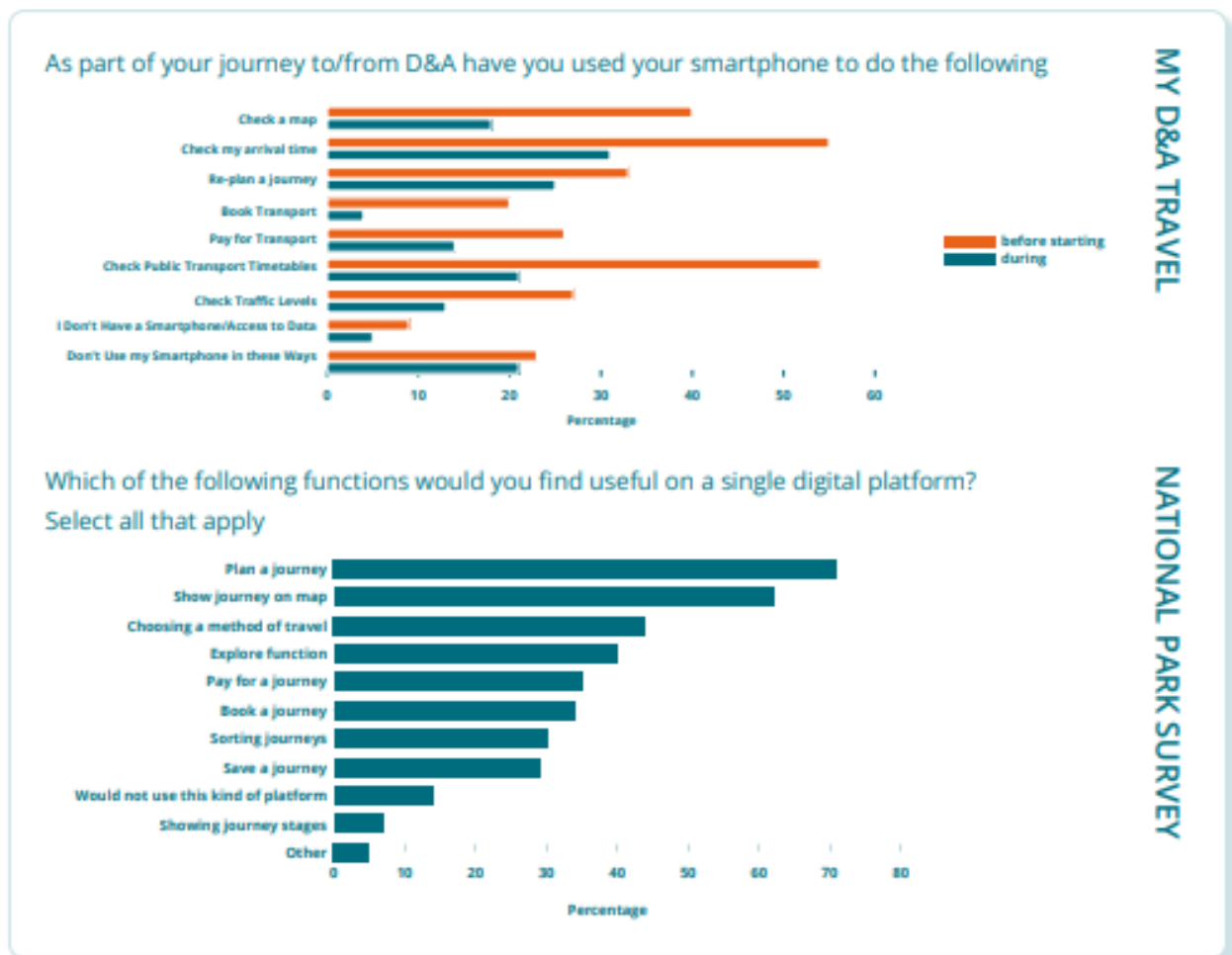
WHAT DO PEOPLE NEED?

We should be mindful of the respective problems that people face for planning, booking and paying for journeys when deciding on the content of a journey planning tool.

Awareness of transport options is maybe a bigger problem than being able to buy a bus ticket? (especially with the growing prevalence of contactless payment acceptance onboard). The survey results suggest that functions relating to planning a journey are desired more than functions allowing booking and paying. The survey also highlighted that app users and non-users use their smartphone more to plan a journey than to book and pay for a journey.

The survey data also showed the greatest use of the journey planners was in advance, rather than on the day. This suggests that people used the tool to understand their best options

- 93% of GoNHS Tayside journeys were planned at least one day in advance
- 59% of MyD&A travel journeys were planned at least one day in advance



Keep it simple: The continual user feedback loop, and especially an audit of the tool by people with disabilities and early onset dementia emphasised that what people want are simple and clear tools.

The design of many MaaS tools is based on making the most of the technology. Is this what the user needs or wants? It is near impossible to present an app which is both simple and does everything.

"It's great that the feedback, based on disabled users' experiences, has been acted upon: the NHS site is easier to use and is a giant leap forward for accessibility and easier access to health services in Tayside. Great job."

Hussein Patwa Making Connections participant and accessibility consultant

HOW THE TACTRAN ENABLE PROJECT HAS ADDRESSED THE CORE THEMES OF TRANSPORT SCOTLAND'S MAAS INVESTMENT FUND

<i>MIF themes</i>	<i>How has the Tactran ENABLE project addressed these themes?</i>
<p>To reduce inequalities</p> <ul style="list-style-type: none"> • Access for rural, islands and communities • Tackling inequalities, accessibility and mobility barriers • Will be affordable for all 	<ul style="list-style-type: none"> • For rural (and urban) communities the interfaces pull together in one place all transport services available, enabling users to make the most of whatever limited transport services available, and how these might be integrated to enable a journey to be made • The Making Connections audit has enabled us to design simple and easy to use interfaces. This goal is supported by the focus on interfaces for particular groups enabling just the information they require. The more people and functions you try and serve, the more complicated the interface will get (including data usage) • Apps targeted at users of e.g., further education and health facilities help reduce inequalities by assisting attendance at those services • The interfaces provide cost information and help users identify affordable options • User/non-user surveys indicated that the users of the journey planning tools were more likely to have fewer transport options, make more complicated journeys, be sensitive to cost and have a disability
<p>To take climate action</p> <ul style="list-style-type: none"> • Modal shift to sustainable public transport alternatives, 	<ul style="list-style-type: none"> • The responses to the user / non-user surveys indicate that the journey planning tools have made it more likely that users will choose to use active and sustainable modes of travel

MIF themes	How has the Tactran ENABLE project addressed these themes?
<ul style="list-style-type: none"> reducing carbon emissions 	<ul style="list-style-type: none"> The journeys planned on the tools evidence that the majority of planned journeys are public transport journeys
<p>To help deliver inclusive, sustainable growth</p> <ul style="list-style-type: none"> Enabling sustainable tourism Supporting digital innovation within Scotland, specifically relating to public transport 	<ul style="list-style-type: none"> The National Park Journey Planner has provided the LLTNPA with an additional tool to help promote sustainable tourism, allowing visitors to easily explore the options for travel to and in the Park that don't involve driving The pilot has resulted in a MaaS Platform covering two regional transport partnership areas, with the potential to host a number of interfaces to support public sector objectives The pilot has tested the application of features within the context of a journey planning tool The use of Scottish based providers has expanded their knowledge base and experience
<p>To promote health and wellbeing</p> <ul style="list-style-type: none"> Promoting healthier lifestyle by promoting active travel (including bus and rail as they have an element of walking involved) Will help make our communities great places to live 	<ul style="list-style-type: none"> Whilst users have said that the tools make it more likely that they will make their trip by sustainable modes, the data on journeys planned demonstrates that this is likely to be by public transport modes rather than walking or cycling. People may need to know where to walk or cycle as part of a multi-modal journey, but they may not need a journey planning tool to make most short trips within their communities. The tools are part of a package of measures which seek to reduce <ul style="list-style-type: none"> car traffic in the National Park which will help reduce the impact of visitor traffic on the Park's communities traffic heading to hospitals in Dundee and Perth which will both support air quality objectives as well as reducing the impact of traffic on neighbouring communities

TAKING MAAS FORWARD

Potential for Growth: All of the pilot surveys contain evidence to suggest that there is an openness to the idea of a multi-functional platform, which indicates that those who had already started to use it were becoming regular users, while the (much larger) cohort of non-users were expressing support for the concept, even if they weren't using it yet.

What is the value to the public purse? Further research indicated that it is unlikely that booking and advertising income will be sufficient to enable a public sector tool to be sustainable. However, the costs of not supporting such a tool are likely to result in greater mitigation costs for addressing social inclusion and climate change problems.

Collaboration: A collaborative approach was taken to developing and evolving the project. For the services, the journey planning tools helped users access the service via sustainable modes of travel. In addition, other benefits for partner services included:

- Continued building of relationships between a Regional Transport Partnership and services, enabling opportunities to support their objectives to be identified, investigated and acted upon
- The data dashboard provided valuable insights into users and their access issues for services, helping inform service delivery
- The journey planners provided another medium for services to communicate and engage with their users

A significant element of programme evolution came with SEStran (South East of Scotland Regional Transport Partnership) successfully being awarded monies from the second round of the MaaS Investment Fund (MIF2).

To enable MIF2 project timescales to be hit and to reduce costs, the MaaS platform developed for the Tactran ENABLE project was shared with SEStran. This enabled SEStran to meet their project requirements but also resulted in a sharing of costs and learning experiences. Direct consequences of this are:

- The intended nine-month trial period for Tactran's pilots were able to be extended to eighteen months
- Tactran and SEStran working jointly on developing and promoting the platform and its opportunities

"Working in partnership with our neighbouring RTP (Regional Transport Partnership) on a shared MaaS programme has helped bring forward the GoSEStran project quicker than would otherwise have been achieved, not just by sharing costs and the technology, but also sharing learnings and experience.

It also eliminated interoperability issues with the Tactran ENABLE project."

Brian Butler, Partnership Director, SEStran

CONCLUSIONS

There is a need for effective tools to promote access by sustainable modes to:

- Reduce inequalities
- Take climate action

There are users that require travel planning support

Users of the tool are more likely than non-users to experience difficulties with travel, whether this be the availability of options, the complexity of their journey or the cost of travel. Hence, users of the tool are more likely to require help with travel planning and understanding the options available to them. Users of the interfaces were also significantly more likely to have a disability which affects their travel arrangements.

The Tactran ENABLE model is effective in getting travel planning support to users: The user numbers in comparison with other programmes suggest that a successful model has been developed for designing and disseminating journey planning tools:

- A bespoke journey planning tool has direct relevance and value to the user
- Journey planners branded and distributed directly by the service that the customer is using can be a very effective in disseminating the tool
- There appears to be potential for this type of tool. There also appears to be potential for successfully growing the usage of the Tactran ENABLE journey planning tools

The journey planning tools support use of sustainable travel, especially public transport

Users suggested that the tools made it more likely that they would use a sustainable mode of travel. This was evidenced by most of the journeys planned being public transport journeys.

Taking MaaS forward in the Tactran Region

- A MaaS tool for the region presents opportunities to promote sustainable travel, enable the digital transformation of booking and paying for services (including demand responsive transport) which support the core objectives for addressing climate change and promoting access to services for those without access to a car.
- It is unlikely that the current model would attract sufficient income from booking income and advertising to make it cost neutral. In addition, the costs of providing a public sector MaaS platform are likely to be prohibitive for most services on their own. However, the uses and benefits are potentially widespread, and the more services that the tool is shared across, the greater the benefits, and the smaller the costs to individual services.
- The need to take a collaborative approach to developing and promoting a shared MaaS platform has been adopted by Tactran and SEStran. This

approach is going to be extended over 2023/24 to promote and share the learnings of this pilot across the SEStran and Tactran regions and beyond. We will also look to continue to understand what is required by both users and public sector agencies and to further develop the collaborative model in a financially manageable and value for money model for public sector services. This is being taken forward under the name of the *Integrated Mobility Partnership*.

Taking MaaS forward in Scotland

The Tactran ENABLE programme suggests the following should be considered when determining the future of public sector MaaS products in Scotland:

- Public MaaS tools are unlikely to be financially self-sustaining due to the high number of bookings and advertising revenue required to do so. Private sector tools may focus on mass numbers and may not support rural populations or non-profit generating services such as Community Transport. Public sector organisations are seen as trusted brokers and may find it easier to negotiate desired integrations.
- MaaS journey planning products do come at a cost. But to address climate change and social inclusion objectives we need to both improve transport services as well as making the most of what exists by promoting them as best we can. Not promoting sustainable transport choices will result in further mitigation costs to the public purse.
- We must balance the functions that a journey planner has with making sure it is both simple and easy to use (and enables digital inclusiveness by not putting a burden on an individual's mobile data usage). To get this right, it is useful to be led by what the user needs, rather than by what the technology allows

Further Details

Integrated Mobility Partnership Scotland web address:

<https://IntegratedMobilityPartnership.co.uk>

Apps available:

On the App Store and Google Play, Search:

- National Park Journey Planner
- My D&A Travel

<https://nationalparkjourneyplanner.co.uk/>

<https://www.gonhstayside.co.uk/>

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1. Programme overview and objectives

1.1 Overview of the Tactran ENABLE programme

The Tactran ENABLE MaaS Programme piloted a model for developing and disseminating journey planning, booking and payment tools to fully inform users of their travel choices and to help enable them to access destinations and services by sustainable modes, thereby supporting public sector social inclusion and climate change objectives.

The Tactran ENABLE programme is part of the Transport Scotland's Mobility as a Service (MaaS) Investment Fund ([MIF](#)) programme introduced to help the Scottish Government understand if and how public MaaS products could be taken forward to support climate change and social inclusion objectives.

"Within the remit of the MaaS Investment Fund, the key MaaS concept is to provide people with easy, digital access to travel information, so they can be better informed as to the different ways to undertake their journey"

The Scottish Government has set interim targets for 2030 for both climate change (20% reduction in car km) and social inclusion (child poverty targets). Time is not on our side to achieve these targets.

The Problem: providing an alternative to the car, whether for those with or without access to such, requires both provision of alternatives for the whole journey, but also information about the combination of alternatives that exist for the whole journey. Further challenges include:

The Current Transport Network

- Low and dispersed public transport demand in rural areas
- Limited availability of public transport options that exist in remote and rural areas
- A complex, non-inclusive network

User and Potential User Interaction with the Network

- Habitual Travel: It is easy to adopt habits (e.g. travel behaviour), but harder to break them. Changing habits involves addressing real or perceived barriers
- Impersonal transport 'out of our control'.... "what works for me"
- Confidence and Trust: generally, people's confidence is low in modes of travel they don't use, but recent withdrawals of bus services due to fuel increases, reduced peak hour demands and driver shortages (across the Tactran region at least) have dented the public's confidence in public transport further.

There has never been a single source of information to enable users to be aware of all the opportunities their local transport network provides, and which seeks to address those barriers which can prevent a change in behaviour.

The opportunity: Mobility as a Service (MaaS) technology enables the co-ordinated planning, booking and paying of the complete range of transport services, enabling users to make the most of whatever services are available. Transport Scotland's

MaaS Investment Fund, enabled Tactran to pilot a MaaS programme within the Angus, Dundee, Perth & Kinross and Stirling Council areas.

The pilot programme: The Tactran ENABLE MaaS Programme consists of:

- A MaaS platform: the 'back office' containing the software that enables the planning of a range of transport services (Rail, bus, demand responsive services, community transport, taxis, cycling and walking) and the booking and paying for rail and taxi services
- Journey planning interfaces (apps/websites) designed with and for the users of three pilot services
 - Dundee and Angus College
 - Loch Lomond and the Trossachs National Park
 - NHS Tayside
- Communications and marketing programme
- Making Connections Audit, working with disabled user groups to improve the journey planning interfaces
- Monitoring and Evaluation Programme

The programme differs from many MaaS projects in that it provides specific interfaces, designed with and for specific user groups (prioritising the information they need) and places these groups at the centre of the design, review, improvement, marketing and communications processes – compared to the majority of MaaS projects which produce generic journey planning tools which are aimed at 'the whole' market. The Tactran ENABLE programme is about creating the eco-system to identify and give users what they need, placing the users at the centre of this eco-system and maximising the utility and benefits of MaaS tools for users and service providers. This approach to providing travel information, hopefully makes ENABLE stand out from others and provides the user with much more than a journey planner.

The goal was to trial an approach to developing and disseminating journey planning tools to support public services. The programme piloted interfaces for three services, but the platform could host as many services as would be required by the public sector partners.

1.2 Role of this Monitoring and Evaluation Report

Ansons Consulting Ltd was commissioned to develop and implement a monitoring and evaluation plan for the Tactran ENABLE project.

At a strategic level, the monitoring and evaluation programme sought to test the applicability, appeal, impact and long-term viability of a MaaS service in the Tactran region. It did so by monitoring and evaluating the three pilot projects with NHS Tayside, Loch Lomond and The Trossachs National Park Authority, and Dundee and Angus College.

As it was a pilot with a relatively small number of target users, the monitoring and evaluation programme did not set out to monitor behavioural change at a population wide level. It did, however, aim to provide an indication of whether these MaaS pilots **could** influence participants' travel behaviour, awareness and attitudes, and provide confidence to client partners, transport operators, Tactran and Transport Scotland that the platform had **potential** to help tackle key policy agendas. In short, the purpose of evaluating this pilot was to provide insight that helped demonstrate whether there would be merit in further investing in MaaS in the future.

This report covers the period from programme inception in January 2020 to December 2022.

1.3 Aims of the Scottish Government and the MaaS Investment Fund

Core aims of the Scottish Government are to address climate change and reduce social inequalities, these aims manifest themselves through the objectives such as:

- To reduce car kilometres by 20% (compared to 2019 levels) by 2030 (Climate Change Action Plan)
- To meet national air quality directives (Clean Air for Scotland)
- To have a sustainable, inclusive economy with equality of outcome for all; and to have a healthy weight and be physically active (Public Health Priorities)
- To end child poverty; and a fairer Scotland for all (Fairer Scotland Plan and Child Poverty Act)

“The MaaS concept supports the Scottish Government agenda for a healthier, more sustainable Scotland in that, through providing better and more comprehensive travel information, more people feel empowered to use alternative ways to travel, encouraging them to use our sustainable public transport or active travel networks, and so reducing cars on the road, congestion and carbon emissions.

MaaS also complements the Scottish Government’s smart programme to improve access via smart and digital technology to the extensive and varied public transport network across Scotland.”

Scotland’s 2nd National Transport Strategy ([NTS2](#)) reflects these, and other aspirations, through four priorities. Table 1.1 below highlights the priorities that Transport Scotland identified in the MaaS Investment Fund. these priorities, and also how MaaS journey planning tools could help support these priorities.

Table 1.1: National Transport Strategy and MaaS Investment Fund Themes

<i>NTS2 Priorities and relevant outcomes</i>	<i>MIF themes</i>
<p>To reduce inequalities</p> <ul style="list-style-type: none"> • Will provide fair access to services we need • Will be easy to use for all • Will be affordable for all 	<p>Access for rural, islands and communities</p> <p>Tackling inequalities, accessibility and mobility barriers</p>
<p>To take climate action, inc:</p> <ul style="list-style-type: none"> • Will help deliver our net zero target • Will promote greener, cleaner choices 	<p>Modal shift to sustainable public transport alternatives, reducing carbon emissions</p>
<p>To help deliver inclusive, sustainable growth, inc:</p> <ul style="list-style-type: none"> • Will use beneficial innovation 	<p>Supporting digital innovation within Scotland, specifically relating to public transport</p> <p>Enabling sustainable tourism</p>
<p>To promote health and wellbeing, inc:</p>	<p>Promoting healthier lifestyle by promoting active travel (including bus</p>

Table 1.1: National Transport Strategy and MaaS Investment Fund Themes

<i>NTS2 Priorities and relevant outcomes</i>	<i>MIF themes</i>
<ul style="list-style-type: none"> • Will help us to make healthy travel choices • Will help make our communities great places to live 	and rail as they have an element of walking involved)

Promoting and enabling sustainable access to employment, education and training, health care and local services, for those that have access to a car or van and those that don't, is vital to all these aspirations.

The Tactran ENABLE project sought to understand if and how MaaS journey planning tools could support these aspirations.

Furthermore, the Second National Transport Strategy sets out an investment hierarchy which emphasises the need to make the most of what we've got. So, whilst transport services/options undoubtedly need to be improved, our first job is to make the best use of what already exists. This is exactly what MaaS journey planner tools enable by making users aware of all the options they have.

Fig 1.1: NTS2 Investment Hierarchy



The MaaS Investment Fund also expected projects funded by the programme to:

- Demonstrate a sustainable business model and/or development potential
- Be able to demonstrate that the proposed solution is compatible with, or working towards integration with, existing Scottish public transport smart technology infrastructure/specifications (e.g. cEMV, mobile and ITS0)

1.4 Tactran policy objectives

Tactran’s regional priorities reflect the national aspirations. The Tayside and Central Scotland Regional Transport Strategy is [currently being reviewed](#). Table 1.2 maps those draft outcomes adopted by the Partnership which align with the MIF priorities.

Table 1.2: Mapping draft RTS objectives against the MIF themes

<i>MIF themes</i>	<i>Tactran RTS Draft Outcomes</i>
<ul style="list-style-type: none"> • Access for rural, islands and communities • Tackling inequalities, accessibility and mobility barriers 	<ul style="list-style-type: none"> • Improve ability for young people, and disadvantaged & rural communities to access jobs, education and services • Improve the ability of people with disabilities to access jobs, education and services
<ul style="list-style-type: none"> • Modal shift to sustainable public transport alternatives, reducing carbon emissions 	<ul style="list-style-type: none"> • Reduce estimated CO₂ emissions from transport in the region • Reduce car kilometres driven • Increase the share of personal trips made by sustainable modes such as walking, cycling and public transport
<ul style="list-style-type: none"> • Supporting digital innovation within Scotland, specifically relating to public transport • Enabling sustainable tourism 	<ul style="list-style-type: none"> • <i>The draft RTS contains an action relating to “Tactran, Councils and public sector agencies will investigate and promote initiatives that allow the easier planning and booking of journeys”</i> • <i>The major tourist attractions, including the National Parks, are recognised within the draft RTS as major generators of travel</i>
<ul style="list-style-type: none"> • Promoting healthier lifestyle by promoting active travel (including bus and rail as they have an element of walking involved) 	<ul style="list-style-type: none"> • Reduce transport emissions in declared air quality management areas • Increase levels of physical activity

It is clear that the draft RTS outcomes are supported by promoting and enabling sustainable access to employment, education and training, health care and local services for both those that have access to a car or van and those that don’t.

What the draft RTS recognises (and is reflected in the outcomes above) is that with resource constraints it is impossible to improve everything, for everyone within the time constraints imposed by the national targets. Instead, we must identify and target resources at where support is most required and where it will have the biggest impact on achieving our shared aspirations. The Tactran ENABLE programme reflects this ethos.

1.5 Pilot service objectives

The objectives for the services involved in the pilot naturally varied reflecting their responsibilities, but all sought to promote sustainable access to their services for those with and without access to a car:

- The Loch Lomond and the Trossachs National Park Authority (LLTNPA) have sustainability at the heart of their thinking and have serious concerns about the impact of visitors accessing the Park by car have on the climate, local communities and the special nature of the Park
- NHS Tayside is the largest organisation in the region, but the issues of user access and the parking pressures on site are constant issues for all NHS Boards. With regard to the ability of users to access the service, NHS officers noted the anxiety patients have when attending an appointment and how this can be amplified by concerns about how to get to the site. Officers noted that this is likely to be part of a suite of factors that can affect do not attends (typically 11% in Tayside) a significant cost and inefficiency to NHS service delivery
- Dundee and Angus College provide further education for a large rural area, with the ability to access the College being a factor in which courses pupils can enrol in. Furthermore, given the typical age range of the user group, they are more likely to be reliant on other forms of access (whether that be lifts or regular use of public¹ transport) than those with their own car and require information on how to access different sites on different days at different times to ensure attendance

The aim of the pilot is to understand the ability of the Tactran Enable MaaS programme to provide a tool which supports the wider social, economic, and environmental objectives across the public sector in the region not only for Tactran and the Scottish Government but also all participating services.

1

1.6 Accessibility and Inclusion: designing tools for people with protected characteristics

The Tactran Enable project has a strong user focus. This built upon the Fuse Mobility platform which was built on extensive research with a range of users (Young Scot travellers, people living with dementia, older people, people with disability) and the co-design phase of the work.

As a tool to assist social inclusion, we must consider the needs of different groups in society in how we take digital journey planning tools forward. Table 1.3 summarises the potential travel issues for protected characteristic groups which a travel planning tool could assist (taken from draft RTS Integrated Impact Assessment).

Table 1.3 Summary of potential travel issues for protected characteristic groups which a travel planning tool could assist

<i>Protected characteristic</i>	<i>Potential issues which could relate to the function and design of digital journey planning tools</i>
Disability	<ul style="list-style-type: none"> • Ability of blind and partially sighted to use travel planning apps • Confidence in the facilities / assistance available for the whole journey required • Ability of people with hidden disabilities to understand and use complex travel information
Gender reassignment	<ul style="list-style-type: none"> • Risk of harassment and desire for real time travel information
Marriage and civil partnership	No issues identified
Pregnancy and maternity	<ul style="list-style-type: none"> • Enhanced requirement for awareness of facilities
Race, religion, or belief	<ul style="list-style-type: none"> • Ability of people who cannot speak English or where English is not the first language to understand instructions / information included within journey planning tools
Sex	<ul style="list-style-type: none"> • For females, risk of harassment and desire for real time travel information
Sexual orientation	<ul style="list-style-type: none"> • Risk of harassment and desire for real time travel information

As the project progressed, the above issues were considered in the design of the pilot. In particular, a Making Connections Audit was undertaken, where we tested the journey planning tools with 24 people with disabilities and early onset dementia, learning and adapting the tools accordingly.

2. Programme description

2.1 The Tactran ENABLE programme

Given the need to promote and enable sustainable travel to achieve both national and regional objectives, Tactran recognised the opportunities that MaaS technology now offers us and sought to develop an eco-system that enabled the public sector partners in the region to help residents and visitors to access services and to be able to do this in as sustainable a manner as possible.

The Tactran ENABLE MaaS Programme consists of:

2.1.1 MaaS platform and interfaces



Fig 2.1: The MaaS platform, its interfaces and integrations

A MaaS platform

The 'back office' containing the software that enables the planning, booking and paying of a range of transport services. The objective of the platform is to power as many MaaS applications across the region as required. Integrations and improvements to the platform are shared across the applications. At the end of the pilot period (Feb 2023) the platform contained:

- Bus journey time and cost information (via integration with Traveline Scotland)
- Ability to plan, book and pay for rail journeys (via integration with RailEasy)
- Ability to plan, book and pay for five taxi companies in the region (Tele Taxis and Dundee City Taxis in Dundee, Perth Radio Taxis, and Ace Taxis in Perth, and Riverside Taxis in Stirling via the taxi aggregator Karhoo). Plus contact details and estimated fares for local taxis which operate in the region, but are not part of the aggregator
- Walk and cycle journey times
- Information (cost / contact details) for community transport operators appearing as a travel option in journey plan
- Information (costs / contact details) about demand responsive transport services (DRT) in the region linking to the Stirling Council DRT booking webpage powered by Trapeze
- Carbon calculator and days out features for the National Park Journey Planner

- Ability to plan Enterprise Car Club journeys in the Stirling area
- Ability to plan Nextbike bike hire

The platform contains the ability to host user accounts however none of the current applications have required this functionality.

Data dashboard: Within the project, Fuse Mobility worked with Tactran and the Service Leads to develop a GDPR compliant, anonymised data dashboard and user insight layer within the MaaS platform. The data dashboard amalgamated all of the data output streams from the ENABLE MaaS platform, such as origins, destinations, transport modes viewed, dates and times of planning, into a single repository which could be regularly analysed and used to produce KPI reports for the project team. The user insight layer allowed for user account data to be evaluated to determine usage patterns of different user cohorts.



Fig 2.1: Image from the data dashboard

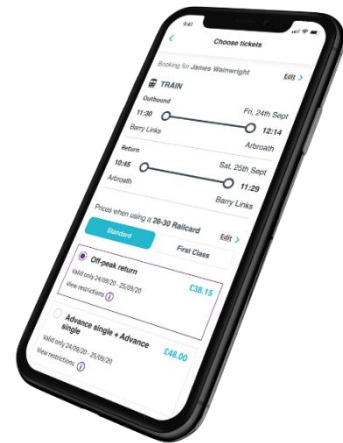
Data and user profiles were tagged to each app/ website powered by the platform allowing for both full project data from all services combined to be analysed whilst also allowing for specific data to be evaluated on a service by service basis.

User Interfaces (apps/websites) designed with and for the users of three pilot services

- Dundee and Angus College
 - My D&A Travel** – app developed with College campus locations built in; ability to promote Under 22 free bus travel (U22 Travel)
- Loch Lomond and the Trossachs National Park
 - National Park Journey Planner** – app and website for planning, journeys to popular locations in the National Park; promoting services unique to the area (water bus, shuttle bus, demand responsive transport); ‘explore’ feature whereby users can browse for places to visit and be fully informed of travel options available to them.

- NHS Tayside

Go NHS Tayside – website featuring drop down of major hospital and clinic locations across the region; ability to plan by appointment time and place (including accounting for length of appointment)



All interfaces provided:

- Price / time / service info for travel options
- Ability to prioritise search options by price / time / number of interchanges
- Route maps
- Push and prompt notifications that allow either the ENABLE team or the service to communicate and engage with users.

The reasoning for designing user interfaces with and for specific services and user groups were to:

- **Ensure that the information that users are provided with is relevant and easy to access for their specific needs.** Having to plan and book a journey is a barrier. We wanted to make the planning of a journey as simple as possible
- **Allow the interface to include other information which that particular user group is likely to find useful** (and/or promotes objectives of that particular service) (e.g. the days out function in the National Park Journey Planner). It was assumed users are more likely to use and return to a tool if it provides 'added value' (compared to 'google directions'). This added value is easier to provide if for a specific target audience
- **Improve user confidence in the journey planning tools promoted to them.** It is assumed users would have greater confidence in tools branded and promoted to them by the service they are trying to access, rather than a 'third' party tool.
- **Allow the tool to provide added value to the service** by providing:
 - the service with another means of communicating with its users
 - information (from the data dashboard and other monitoring) to the service about its users and how they access the service
- **Enable the tool to be promoted direct to the user by the service they are accessing,** both in terms of initial and ongoing contact via that service. This approach possibly allows the best 'market penetration' possible.
- **Give the services greater ownership of the tool** and an added incentive to promote. It is their name (and hence reputation) on the tool.

Designing the interfaces for accessibility: The base apps were designed to comply with WCAG 2.1 AA (Web Content Accessibility Guidelines version 2.1 Level AA) standards.

These guidelines provide a set of standards for creating content that is accessible to people with disabilities, including visual, auditory, physical, speech, cognitive, and neurological disabilities.

The "AA" level of conformance means that a digital touchpoint meets a set of criteria for accessibility that includes providing alternative text for images, using readable fonts and colours with suitable contrast, making content keyboard accessible, providing clear and consistent navigation, and ensuring that the service is compatible with assistive technologies such as screen readers.

Overall, WCAG 2.1 AA aims to ensure that people with disabilities can access and use digital interfaces as effectively as people without disabilities. By meeting these guidelines, digital interfaces can reach a wider audience and provide a better user experience for all users.

This said, perhaps the most important tool to ensure accessibility was the deployment of interface options – apps, webapps to ensure users had a choice.

In particular, the GoNHS service was designed as a webapp after the engagement with potential users. The initial deployment was focussed on Urology Department patients. User research showed that smart phone use at the time (NB pre Covid) was low amongst older people and interfaces should be clean and simple.

Compatibility with existing Scottish public transport smart technology infrastructure/specifications

The main Scottish public transport smart technology for public transport are contactless EMV and ITSO smartcards (Young Scot Card/National Entitlement Card).

The ENABLE services complement and promote the existing Scottish public transport smart technology cEMV and ITSO infrastructure. Users of the ENABLE services are able to incorporate their NEC enabled discounts and entitlements within their user account so that the transport options and prices calculated for their journey is reflective of their existing entitlement. This includes both Concessionary Travel for People aged 60+ or with a Disability, and the Young Persons' (Under 22s) Free Bus Travel entitlement. In addition, public transport smart technology related to bus payment methods, including cEMV, apple pay and google pay acceptance is supported on local and national bus operators and is promoted as an accepted payment method within the ENABLE services when users plan journey involving bus travel.

2.1.2 Communications and marketing programme

Having a journey planning tool is one thing. It is however of no use if you do not have a model to get that tool to those that most need it.

The Tactran Enable model is based on the tool being promoted to them by the service destination they are trying to access. It is the National Park or NHS Board or College which is best placed to get information to its users, not a transport agency. Accordingly, the Tactran ENABLE programme contained a communications and marketing programme developed with each of the services involved.

An essential part of the programme was the continuous monitoring and review of user data and feedback with NHS Tayside; D&A College and LLTNPA to inform interface improvements and marketing and communications programmes.

'Activation Plans' were developed with the services and evolved as living documents to inform best communication mediums, tone of messaging, responsibilities and approval protocol for sign-off of specific messaging.

The communications and marketing programme revolved around a monthly data review meeting with all three services, Tactran and Fuse Mobility. A range of data on the previous month's activities was presented to all parties and discussed together. to understand the effectiveness of various campaigns and to inform future campaigns. This covered: overall usage numbers (new and return users), modal splits and origin/destinations. Each service was reviewed, and discussions centred upon spikes of usage, reasons for the spikes and plans for the following month (followed up in a subsequent marketing focused call for with each separate service). These sessions also provided opportunity to review user feedback to inform improvements.

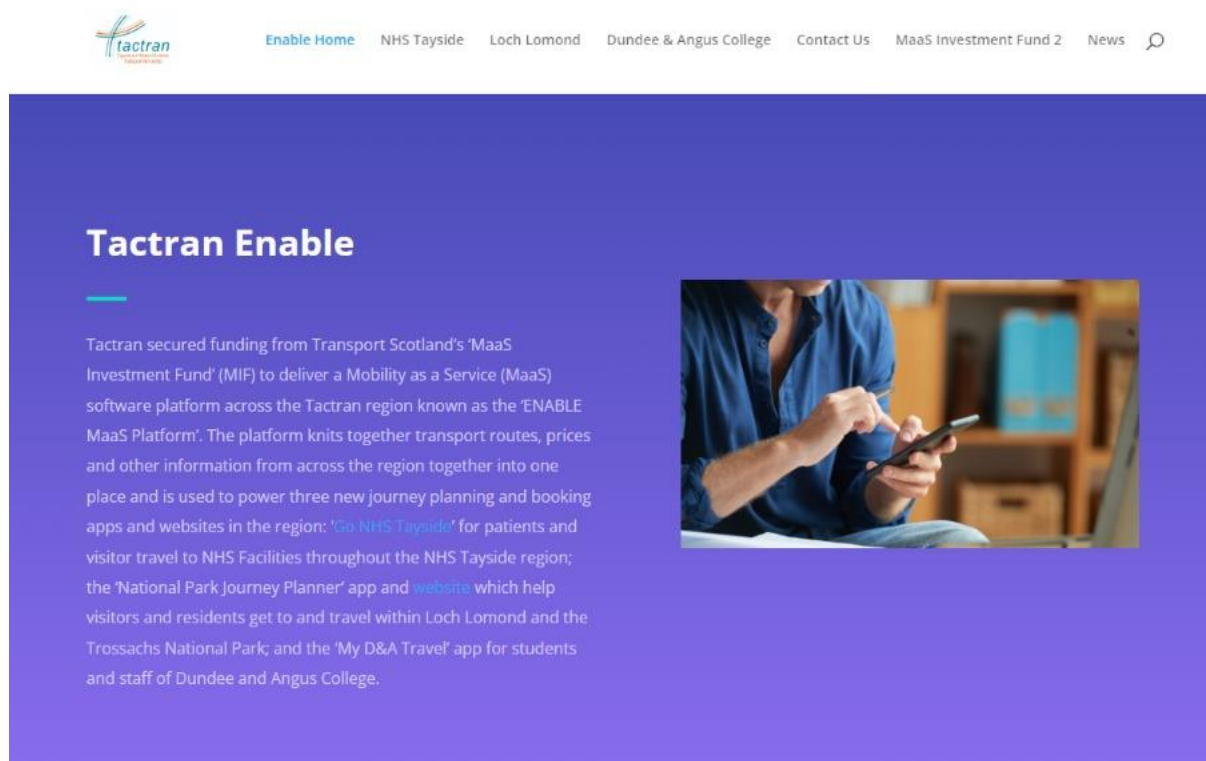
Working with the services we promoted the tools through:

- NHS appointment letters, staff-net bulletin and social media
- All correspondence from College, social media and internal communications
- LLTNPA website / marketing, social media/newsletter; use of social media influencers

The planning and review sessions were also used to identify and test specific promotions such as

- Competitions
- Promotion via events
- Incentives (shopping vouchers)

Programme website: In addition to the service websites (National Park Journey Planner and GoNHS Tayside), a programme website <https://tactranenable.scot/> was established to help promote the programme to the MaaS community, press and interested professions.



Tactran Enable

Tactran secured funding from Transport Scotland's 'MaaS Investment Fund' (MIF) to deliver a Mobility as a Service (MaaS) software platform across the Tactran region known as the 'ENABLE MaaS Platform'. The platform knits together transport routes, prices and other information from across the region together into one place and is used to power three new journey planning and booking apps and websites in the region: 'Go NHS Tayside' for patients and visitor travel to NHS Facilities throughout the NHS Tayside region; the 'National Park Journey Planner' app and [website](#) which help visitors and residents get to and travel within Loch Lomond and the Trossachs National Park; and the 'My D&A Travel' app for students and staff of Dundee and Angus College.

2.1.3 Making Connections Audit

Go Upstream were commissioned to work with people with disabilities and early stage dementia to understand what they needed the tools to do, what worked for them, and what didn't. This information was used to make user improvements to the interfaces as well as providing recommendations for future iterations. The learnings from the making Connections Audit are considered in [section 3.6](#).

2.1.4 Monitoring and Evaluation Programme

As a pilot programme it was essential to ensure that a robust framework was in place to capture the successes and learnings of the programme for users, the services involved, and Transport Scotland. The involvement of the M&E partner in the project working group also assisted consideration of the 'ability' to monitor to be factored into decisions on features / tests etc (not least the consideration of the value of offering rewards for sustainable travel).

2.1.5 Innovations

The project introduced concepts and features into journey planning tools and ecosystem which had not previously been integrated as far as the project team were aware. These included:

At a technical level:

- Travel planning interfaces (apps/websites) designed for individual user groups rather than the general population
- Incorporation of community transport information
- Delivering a web widget as part of a MaaS Service for use in third party websites (although National Park never pushed third party organisations to embed it)
- Incorporation of non-technical taxi operators in a MaaS service (displaying price estimates and contact details for relevant local operators)
- Incorporation of days out/places of interest information (in the National Park Journey Planner)
- The development of the DRT database which enabled the inclusion of a DRT system in Stirling and was scaled up to benefit other partner services (GoSESTRAN)
- Incorporation of discounts and entitlements in price calculations
- Use of push notifications to influence travel behaviour
- Also explored the integration of rewards for sustainable travel

At a governance level:

- one platform powering multiple interfaces – managed collaboratively across the services involved

In deployment:

- A Making Connections audit with people with disabilities and early onset dementia
- Marketing experiments

2.2 Evolution of the programme

As a pilot project, investigating how to roll out new technology, the project inevitably evolved. The purpose of a pilot is to test, learn and evolve.

Pre-Programme

In understanding the evolution of the project and the timescales involved to deliver the Tactran ENABLE programme, it is important to recognise that the project didn't start from scratch in January 2020.

The MIF programme was launched in June 2019, with submissions required by September 2019. The programme required a minimum viable product to be ready to launch by 31st March 2020. These timescales necessitated procuring a supplier with existing tools which could be evolved and adapted.

For the Tactran ENABLE project these existing tools included:

- The MaaS platform developed for the NaviGoGo journey planning pilot aimed at young people in Dundee
- Ask Annie journey planning app developed with and for older travellers in the West Midlands

Covid

The programme commenced in January 2020, with the intention to develop and test a journey planning tool across three quite different service providers. This was unfortunate timing due to the travel restrictions introduced as a consequence of the Covid-19 pandemic in March 2020, and continued to influence the willingness of the services to promote travel up to summer 2021.

- Dundee and Angus College returned to a 'hybrid' approach to teaching, with this varying over the year of the trial including lockdown in January 2021. This had a clear impact on the willingness to promote the app as well as those who may have been interested as an end user. When lockdown restrictions did lift, there was still an apprehensive approach to promoting travel.
- NHS Tayside, like all health boards, delayed non necessary appointments and maximised the use of video technology to engage with patients
- The National Park went from one extreme to another. Initially access to the Park would have been an option only local communities, however as travel restrictions were eased, a boom in staycations across the UK caused serious pressure on the Parks 'honeypot' locations.

As a consequence of the travel restrictions, the launches of the journey planning tools in autumn 2021 were approximately a year later than intended. This inevitably had an impact on project resources. In hindsight it is easy to suggest that the project could have been put on hold for a year. However, at the time as the delays to launching the pilots were incremental (as a consequence of changing travel restrictions and their impacts on the host services), the project continued to develop to ensure it was prepared for an imminent launch. This incurred additional costs for the project; which were largely contained within the original budget, nonetheless this has had an impact on the budget available for measures

Data should be considered against the impact the pandemic had on the public's confidence in using public transport², and latterly as bus subsidies returned to normal, the further decline in bus services as a consequence of fuel price hikes and driver shortages

This was acknowledged by Transport Scotland in the early stages of the pandemic, shifting a goal of the pilots to be financially self-sustaining, to demonstrating the possibilities for MaaS in Scotland.

Rewards programme

The project proposal included the trialling of a rewards programme to understand if rewards could incentivise sustainable travel. The initial intention for this proposal became unworkable as a consequence of the Covid pandemic (the intended 'rewards provider' (MiConnect) significantly scaled back their rewards service as a consequence of Covid (essentially just being a prize draw entry).

At the same time, the co-design sessions for the respective interfaces with the users were being undertaken. The message coming from these sessions is that the users were not interested in any rewards programmes.

The Project Team spent considerable time investigating other reward and incentive proposals, including some spend on gearing up to introduce a reward scheme in conjunction with Angus Council (Better Points), only for the evolving restrictions of and responses to the pandemic also making this option unworkable.

Better Points would allow users to gain points for sustainable travel choices, which would be earned and used in a local context (local businesses, cafes, activities etc). This; however, would require a significant input of funding (in excess of £30K) and due to the delayed timing of the launch of the MyD&A Journey Planner (*new academic year, sept 2021*), would not align well with Angus Council's Better Points project (*concluding spring 2021*).

In investigating a rewards programme, the project Team encountered the following key issues:

- Incentives on a large scale through a provider such as 'Better Points' were unlikely to be financially viable
- The inability to prove whether a walking or cycling trip had actually been undertaken, as no booking would be required for a walking or cycling trip (unless bike hire was required)³

Transport Scotland agreed (21st October 2021) that the rewards element of the programme could be replaced by a broader range of measures to promote sustainable travel which included trialling the use of vouchers as competitions push notifications (for those who have registered and allowed these). Additionally, Dundee and Angus

² Tactran's [Spaces for People Monitoring Programme](#) tracked attitudes across the region towards travel during the pandemic

³ It is also useful to consider, albeit in hindsight, the low number of walking and cycling trips which were planned using the tool (see [section 3 Results](#)). The project has not investigated why this is the case, although it is assumed that while walking and cycling are essential stages in a multi-modal trip, most walking and cycling trips will be made within an environment that the user is familiar with, reducing the need for digital tools to assist with the planning of such.

College promoted these incentives to non-users through their communication channels.

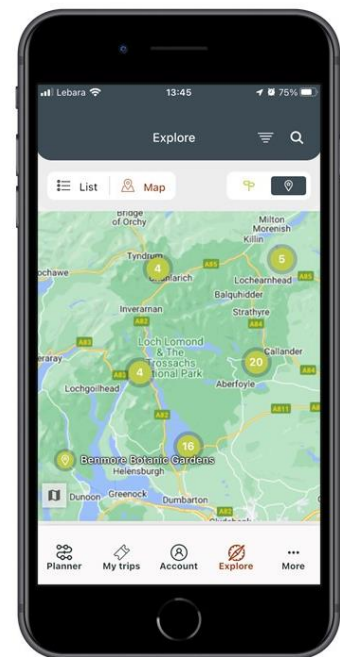
Identifying and prioritising improvements based on service and user feedback

A number of potential improvements to the journey planning tools were identified through the process of working with services and their users i.e.

- The co-design ensured we knew what would be valued by users and services
- Early pilot learning post-covid highlighted emerging requirements as data and discussions took place with services based on a real use
- Making connections audit raised items.

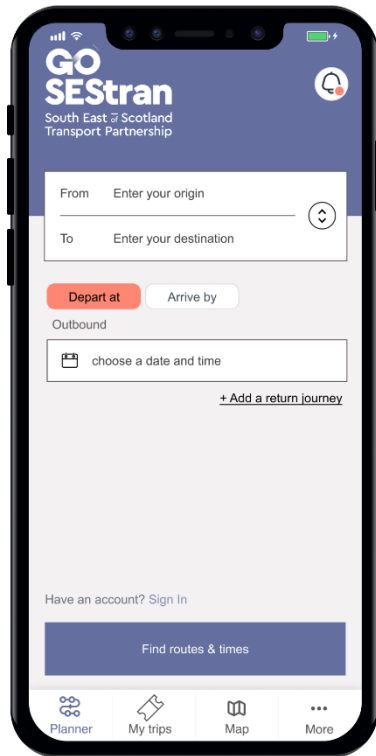
The Project Team worked with the host services to identify those improvements which would help maximise the success of the pilots (in terms of people using the apps/websites, returning to the apps/websites, and therefore promoting sustainable travel). The proposed set of final improvements developed with host services were:

- **User Interface / User Experience Improvements:** Improving ease / removing 'friction' of use of the user interfaces as identified by users and the making Connections audit. This will support returning users
- **Push Notifications:** This enabled notification to registered users of promotions / tests / events being developed with the host service pilots
- **Pop up notifications:** which can be targeted to non-registered users who are active on the app for a short period of time. This allows for promotions, tests or requests for feedback.
- **Days Out Features for Loch Lomond and the Trossachs Park**
- **Promoting walking and cycling leisure routes in the National Park:**
- **Community Transport Integration:** Expanding the community transport schemes included in the app
- **Marketing and promotion:** To market promotions / tests / events being developed with the host service pilots, including offering incentives. To promote sustainable travel and use of the apps/websites
- **Recognition of U22 Travel Scheme:** Allow registered users to note that they have an U22 free bus travel pass (young Scot card). This would automatically acknowledge bus as free travel when delivering results



NHS expansion

The bid included as a pilot the Urology Unit at Perth Royal Infirmary NHS Tayside to understand what users required, and how to integrate promotion of the journey planner to the NHS Tayside systems. Once this had been successfully completed and tested, the pilot was extended across the major sites across NHS Tayside.

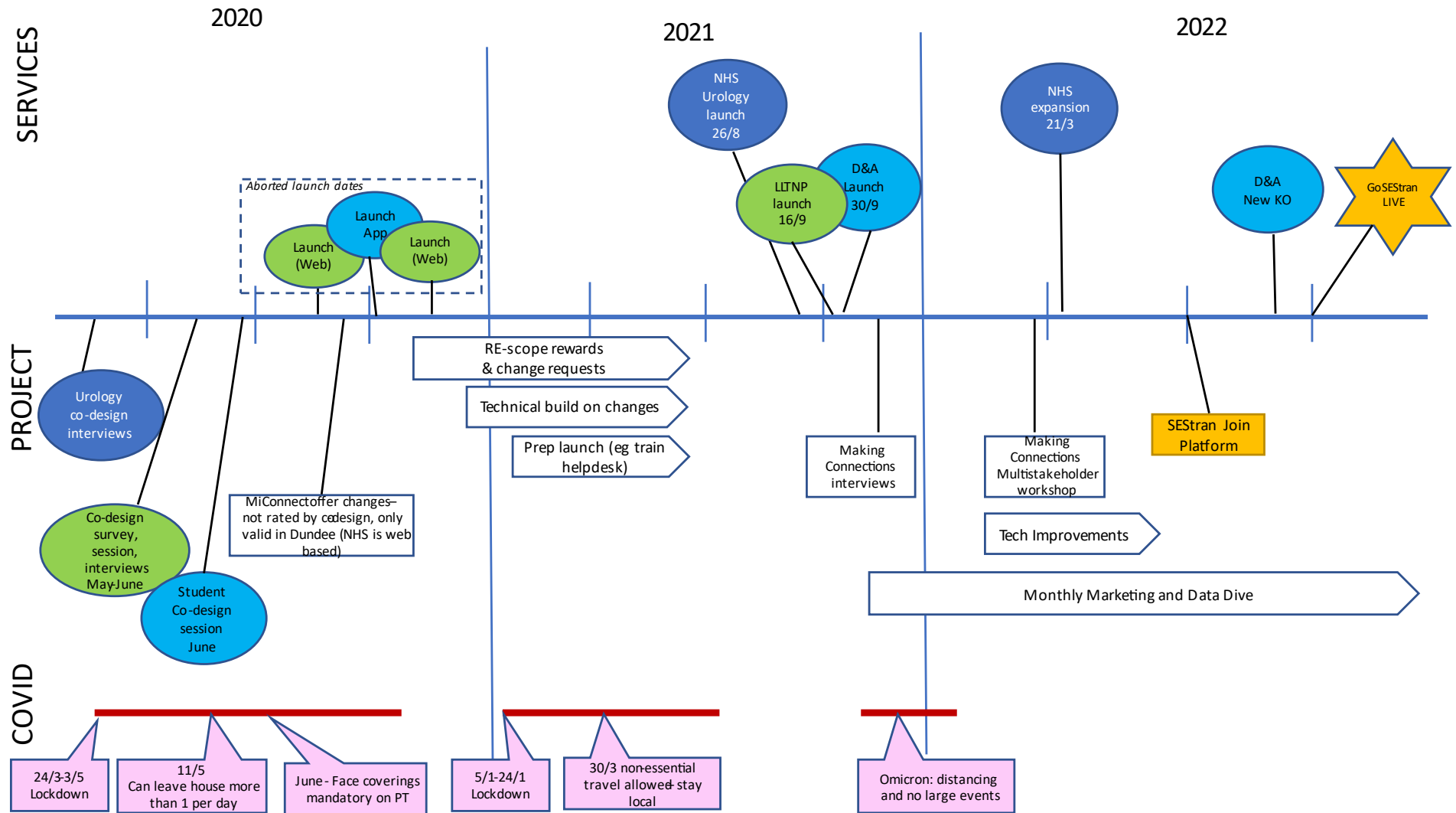


Start of joint Tactran and SEstrans MaaS programme

As a regional transport partnership, Tactran naturally works closely with its neighbouring RTPs. As a consequence of this and Sustrans's successful bid to the MaaS Investment Fund Round 2, Tactran and Sustrans have been working jointly on their respective MaaS programmes, sharing the MaaS platform and experience and learning. As a consequence of the mutual benefits of developing and promoting maas applications powered by a shared platform, this work has effectively become a shared MaaS programme between Tactran and Sustrans.

One direct consequence of the joint working with Sustrans and the sharing of platform costs was the ability to extend the live pilots from nine months to eighteen months.

Figure 2.2 The key milestones and evolution of the project



3. Results

3.1 The monitoring and evaluation programme

The monitoring and evaluation process was guided by an evaluation framework, which was prepared as part of the Monitoring and Evaluation Plan (see Appendix A). It provided an overarching framework to guide our assessment of the extent to which the project supported Transport Scotland’s strategic priorities. As such, it incorporated a Strategic Overview and identified key Performance Measures.

A number of factors, including cost, convenience and ease of use, influenced the final design of the research. Accordingly the following methods were used to gather insights:

- Dashboard data: analysis of transactional data generated by use of the ENABLE platform
- Surveys: to help build a picture of the outputs and outcomes generated by the pilot projects
- Interviews with key stakeholders: to learn more about the effectiveness of the processes used to deliver the project

Analysis of these research results allowed the research team to generate insights into key performance measures as highlighted in Table 3.1 below.

Table 3.1 Key Performance Measures

• No. of app downloads	• % of transactions where no journey plan viewed
• No. accounts activated / not activated	• How far in advance journeys transactions take place
• No. of registered users	• Origin / destination of planned journeys
• % of repeat users	• % of single vs return journey plans created
• Number of app transactions / journey plans	• No. / type tickets booked
• Final mode viewed / used	• Spend by mode
• No. interchanges	

The pilot surveys were intended to provide most of the data to allow a quantification of the potential economic benefits; namely:

- User benefits (cost and time savings, active travel health benefits etc).
- Non-user benefits (carbon reduction, air quality, accident reduction, de-congestion etc)
- Provider benefits (revenue to public transport operators and others).

However, a combination of factors, including the impact of the pandemic, meant that the surveys did not generate a robust enough data-set to enable us to quantify user, non-user and provider benefits in the format set out in our original M&E Plan.

With the prospect of being unable to derive the quantification for the planned set of metrics we instead looked at the responses to questions within the surveys and at the

outputs from the data dashboard to see what else we could identify about changes in travel behaviour which might assist with deriving an alternative understanding of the economic benefits.

Caveats and limitations

In what follows there are four significant caveats to bear in mind.

- Firstly, there is the assumption in the dashboard analysis from all three pilots that the last journey viewed by people planning journeys is the one that was actually undertaken. It may be a reasonable working assumption, but we cannot verify it.
- Secondly, we have no way of distinguishing cause and effect. With a multiplicity of journey origins and destinations (particularly in the Loch Lomond and the Trossachs National Park and across NHS Tayside) as well as unknowns about the availability and quality of existing transport provision for these journeys we can't tell if a user who plans to travel by a particular mode is doing so as a response to the information provided by the journey planning tool or because it is the only option available to them (or that they have a predilection towards using that mode).
- Thirdly, response-rates were small across all three surveys. Coupled with this, we have cross-tabulated certain question responses (i.e. to help answer questions like: "how many app users vs non-app users said 'y'?"). This process of cross-tabulation further dilutes the statistical validity. A low response rate can cause non-response bias⁴, with the risk that those who do not complete the survey may have significantly different characteristics to those who do.
- Finally, our approach to selecting survey participants was based on a 'convenience sample'⁵, which involves selecting respondents based only on their availability and willingness to participate. While this approach can be pragmatic and useful when used in pilot studies, such as the Tactran ENABLE project, it also increases the risk of sampling errors and the likelihood that the sample group will not be representative of a wider population.

As a result, while we can use the data from the surveys and data dashboard to identify evidence that might help support a particular argument about the outputs, outcomes and impact of the platform we are unable to be definitive about these, including (but not exclusively) in terms of quantifying the value for money benefits.

With these limitations noted we can go on to look at what evidence there might be to inform our understanding of the scale of the user, non-user and provider benefits.

⁴ More details about Non-Response Bias can be found here: https://en.wikipedia.org/wiki/Participation_bias

⁵ For more information about Convenience Sampling, see: https://en.wikipedia.org/wiki/Convenience_sampling

Sample sizes

There are three After Surveys in addition to the data dashboard⁶ to draw from. The sample sizes are:

Dundee & Angus College Pilot

- After Survey: 569 respondents including 36 platform users (24 students and 12 staff)
- Dashboard data: 625 journeys planned

Loch Lomond and the Trossachs National Park Pilot

- After Survey: 319 respondents including 69 platform users (although only 28 were usable for the journey mode and travel time questions)
- Dashboard data: 10,651 journeys planned.

NHS Tayside Pilot

- After Survey: 425 respondents including 88 platform users (of which 29 were usable for the journey mode and travel time questions)
- Dashboard data: 1,194 journeys planned.

The National Park dashboard is therefore, by some margin, the largest single data source available to us.

Appendix B provides full details of the Monitoring and Evaluation Surveys and results.

The following sections set out some of the key results generated by the dashboard data analysis, surveys and process interviews carried out in relation to the three pilot projects.

⁶ Please note the analysis in Section 3 Results was based on dashboard data up to end of December 2022. Elsewhere in the report, the data dashboard will reflect the numbers using the platform between August 2021 and February 2023.

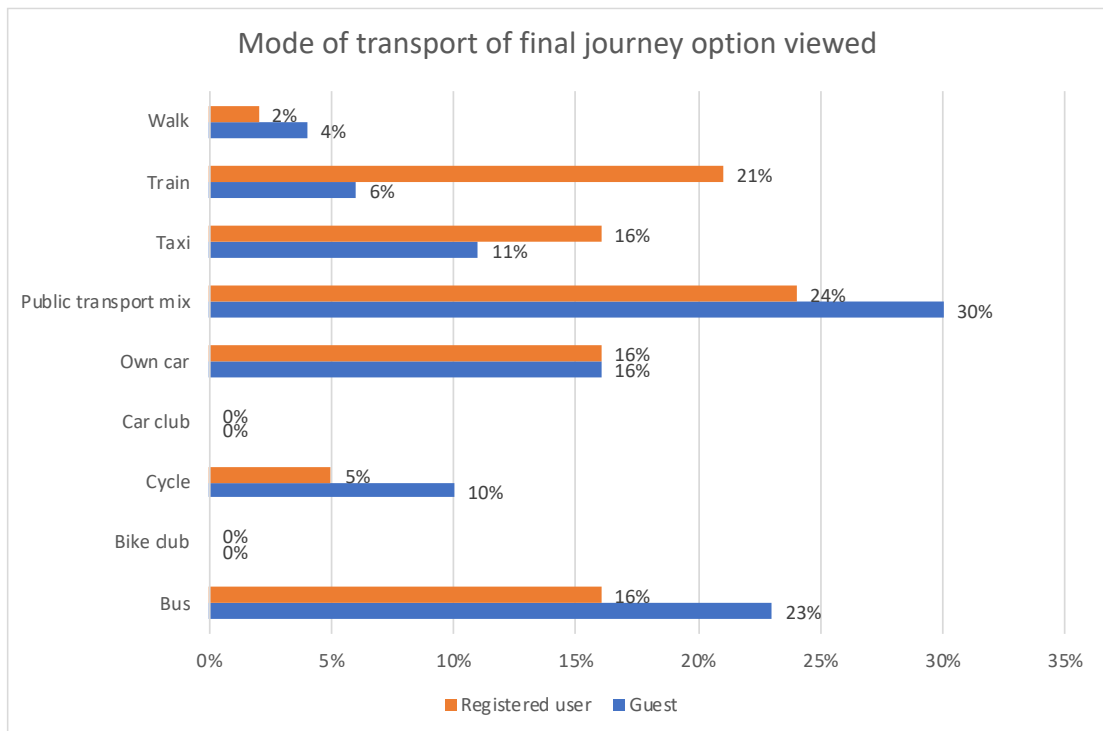
3.2 Key findings from data dashboard

National Park Journey Planner

Dashboard data was gathered and analysed for the National Park Journey Planner pilots. This data covered the period from the launch on 13th September 2021 through until 31st October 2022, which was the end date for the After survey.

- 10,651 journeys were planned during this period, with 278 individuals registering an account
- 94% of journeys (n=10,011) were planned through guest accounts
- 78% (n=8,310) of journeys were planned at least one day in advance
- Of those that viewed a journey option 29% (n=941) were public transport mix
- 84% of journey plans were for sustainable modes of travel

Figure3.2 :Mode of transport of final journey option viewed (Registered user n=336, Guest n=2,883)



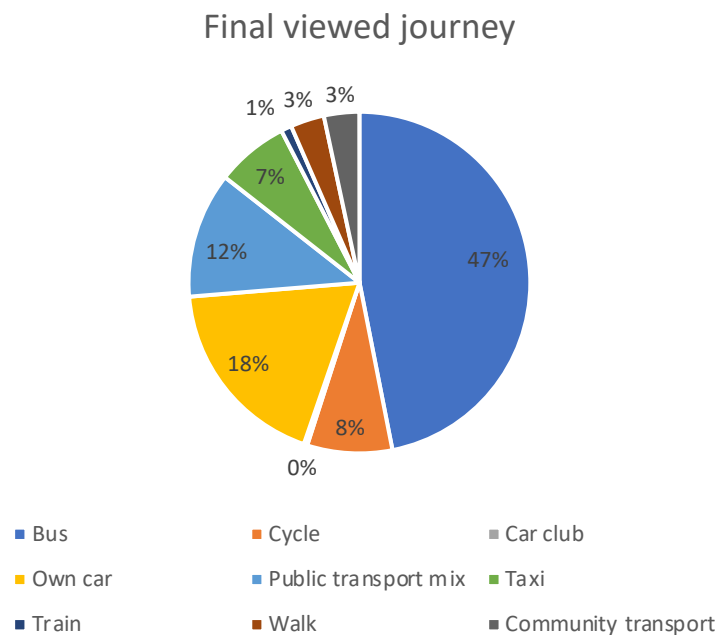
- 87% of users creating journey plans on the National Park Journey Planner viewed only one journey option

NHS Tayside

Dashboard data was gathered and analysed for the NHS Tayside pilot. This data covered the period from the launch across the whole of NHS Tayside, on 28th February 2022, through until 24th November 2022, which was the end date for the After survey. Prior to the 28th February 2022, the platform was only available to Urology outpatients at Perth Royal Infirmary (N.B. data from this period is not included in the following analysis).

- 1,194 journey plans were created between 28th February 2022 – 24th November 2022. All users of the platform were guest users as it was not possible to create a user account.
- 93% (n=1,110) of journeys were planned at least one day in advance.
- Based on an assumption that last journey option viewed by platform users reflected the mode of travel they undertook, journeys planned through the app tended to be sustainable journeys. 47% (n=289) had a bus option as the final journey option viewed.

Figure 3.3: Final journey option viewed (n=597)



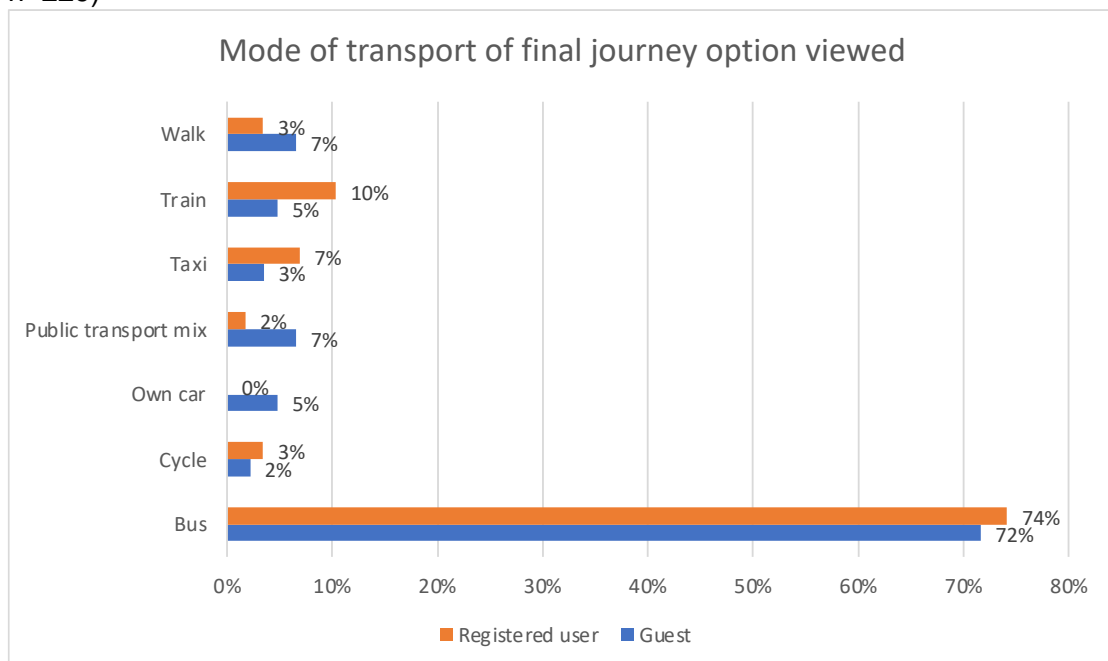
- 92% of journey plans made on Go NHS Tayside viewed only one journey option.

Dundee & Angus College:

Dashboard data was gathered and analysed for the My D&A Travel pilot. This data covered the period from the launch on 13th September 2021 through until 5th May 2022, which was the end date for the After survey.

- 558 journeys were planned during this period, with 65 individuals registering user accounts
- 83% (n=461) of journeys were planned through guest accounts
- 59% (n=328) of journeys were planned at least one day in advance
- 31% of journeys planned (n=172) involved a journey to or from one of the college campuses
- Based on an assumption that last journey option viewed by platform users reflected the mode of travel they undertook, 96% of journeys planned were sustainable journeys. In this light, bus journeys were the most common mode of transport, with 72% of final journeys viewed being bus journeys
- 80% of users creating journey plans on My D&A travel only viewed one journey option

Figure 3.4: Mode of transport of final journey viewed (Registered user n=58, Guest n=229)



3.3 Key findings from survey results

This section draws on survey results to provide a breakdown of journey planner users vs non-users across the three pilots.

3.3.1 Demographic profile users vs non-users

This section outlines how users of the Tactran ENABLE journey planning tools differ from non-users in terms of gender, age and disability. The results reported here are derived from surveys carried out in relation to each of the three pilots.

For context, the number of respondents to each question (users and non-users) is footnoted for each of the three pilots and it should be noted that the number of user responses is often low, meaning results may not be reflective of all platform users. Survey results submitted by Dundee and Angus College staff are not included as the response-rate from app users from this cohort were too low to justify their inclusion.

Gender

Survey results show there were marked differences between the gender of journey planner users versus non-users across the three pilots.⁷

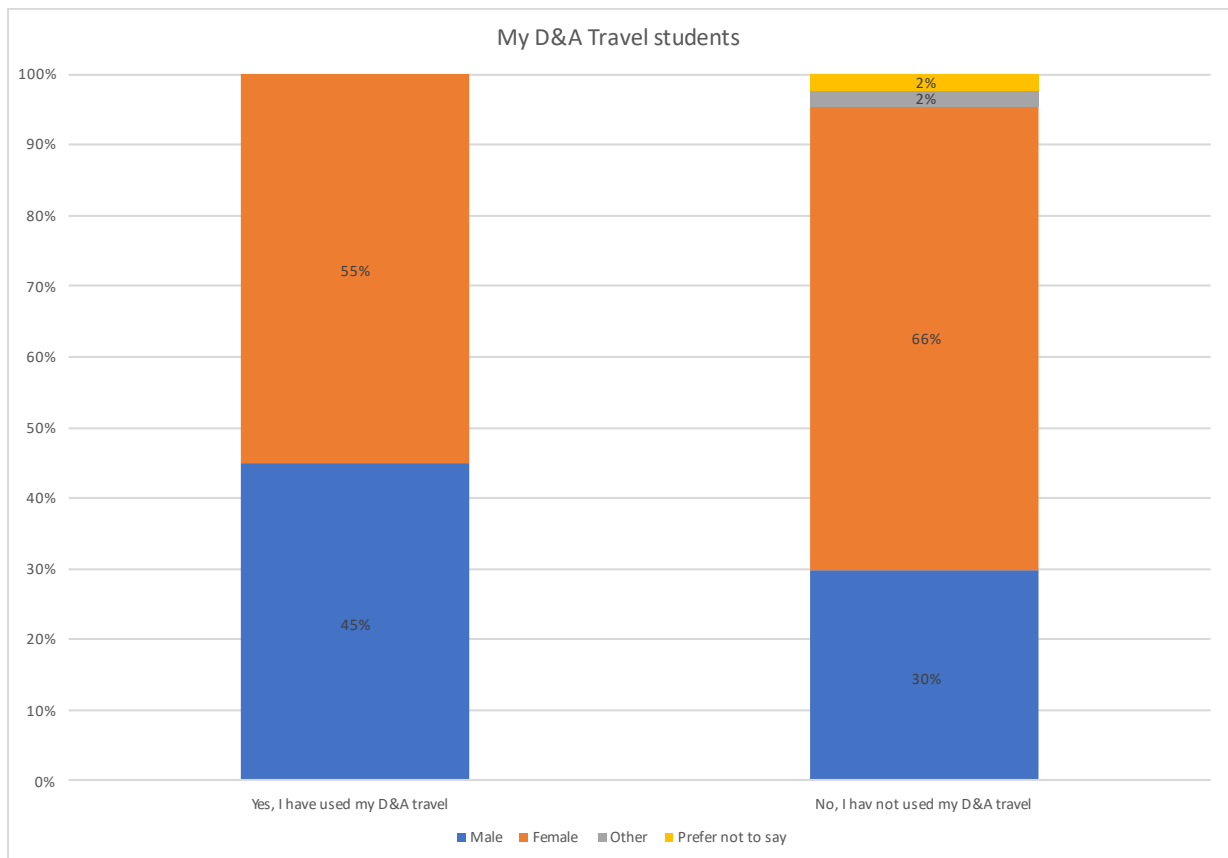
Across the three journey planners, there was a greater proportion of males who used the journey planners compared to non-users (*males are more likely to be attracted to use a gadget?*)

Nonetheless, there remained a greater proportion of female users compared to males as users of both the MyD&A and GoNHSTayside Journey Planners. This could be expected in relation to GoNHSTayside given the far greater proportion of female workers.

The National Park Journey Planner survey results indicate platform users are much more likely than non-users to be male.

This suggests that the journey planning tools were used by distinct audiences in terms of gender composition.

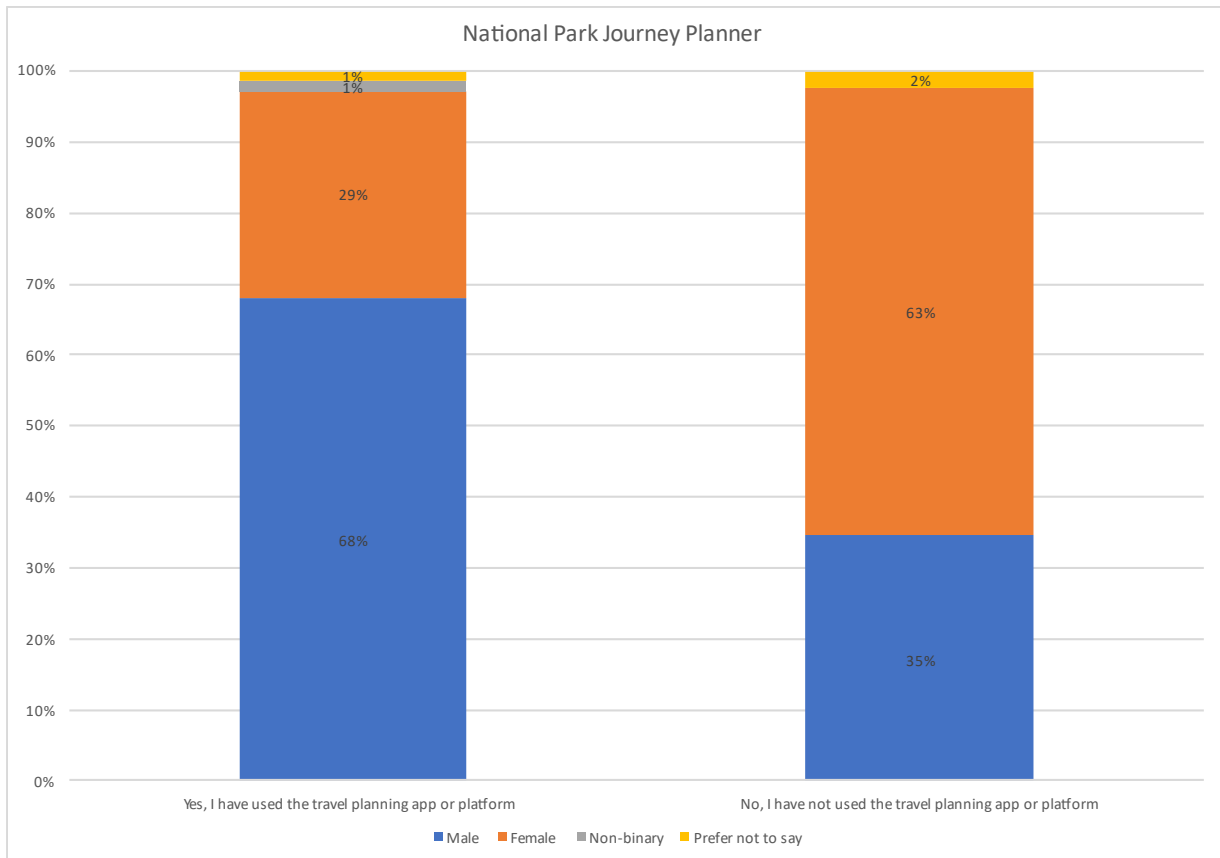
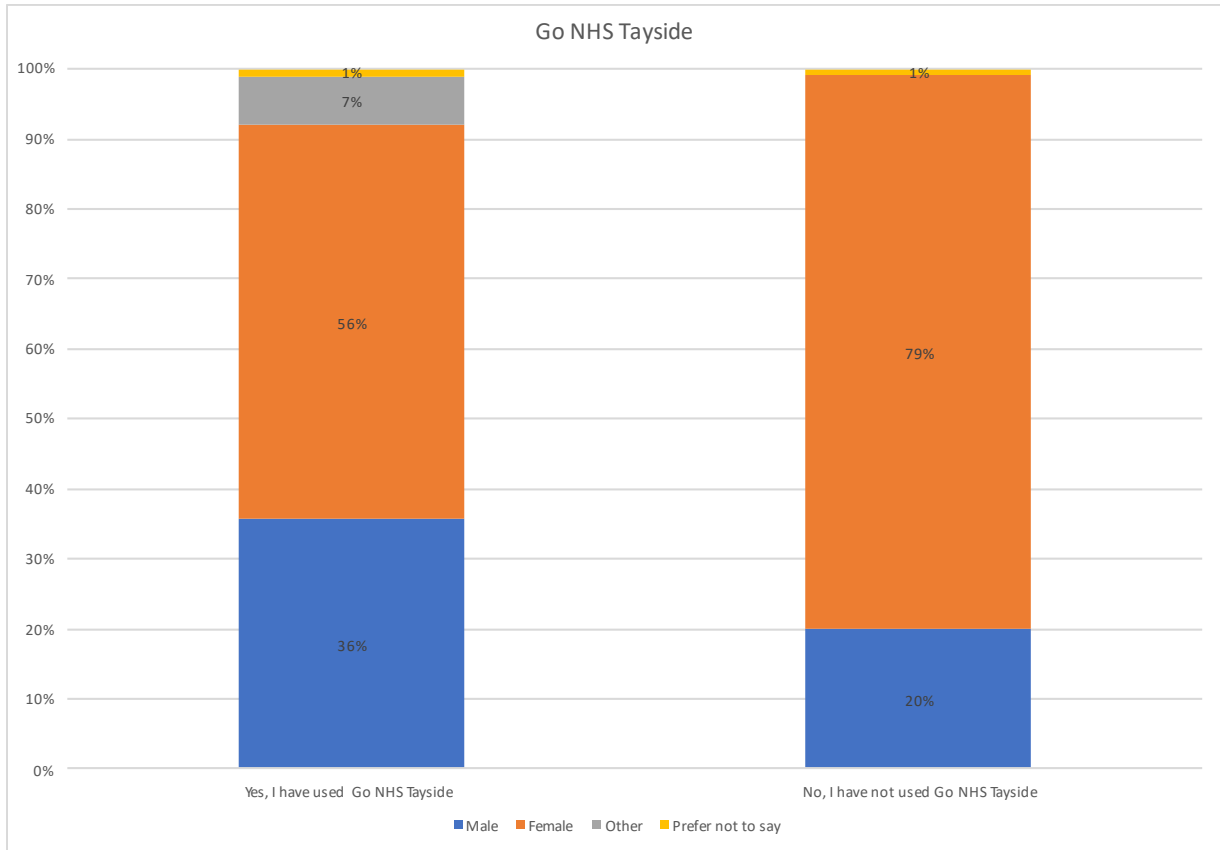
Figure 3.5. Gender split of platform users vs non-users.



⁷ My D&A Travel (students) - Users: N=29. Non-users: N=356.

Go NHS Tayside – Users: N=87. Non-users: N=336.

National Park Journey Planner – Users: N=69. Non-users: N=249



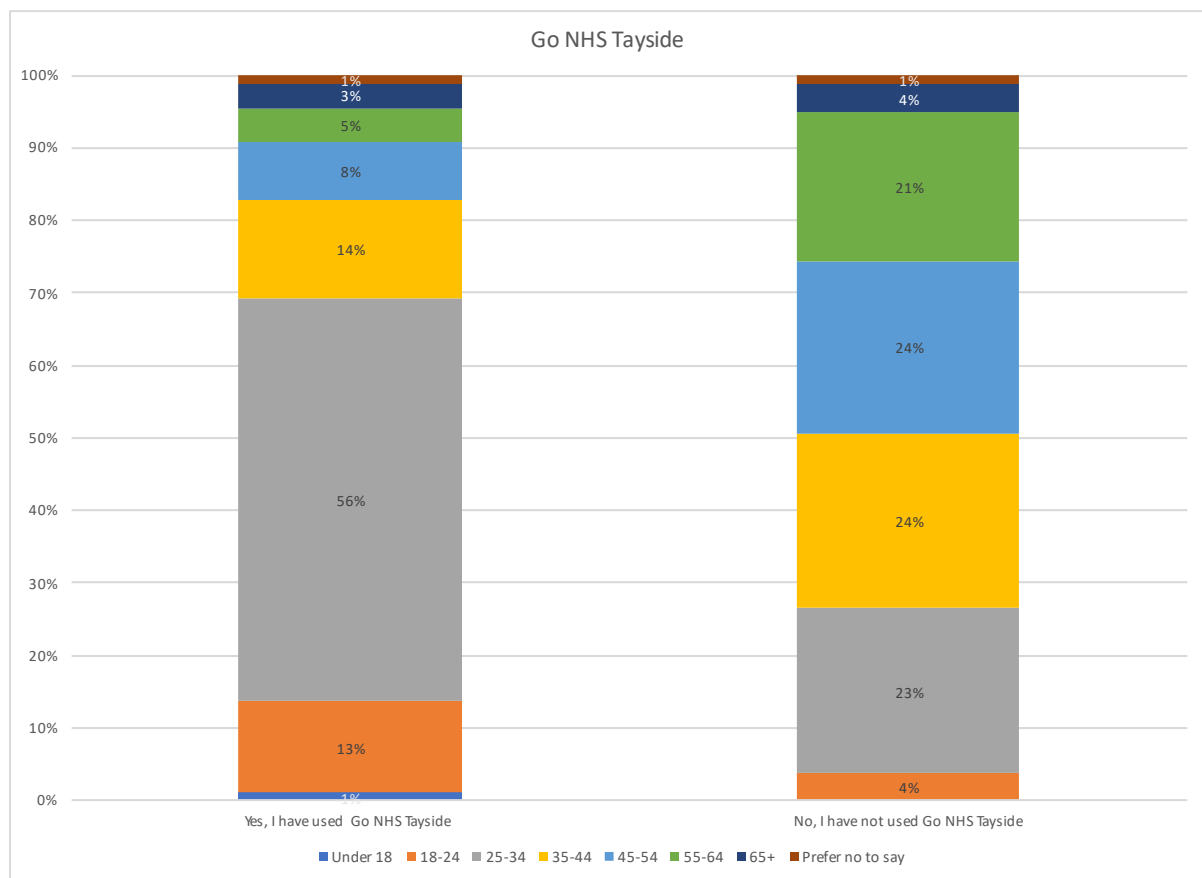
Age

In both the Go NHS Travel and National Park Journey Planner pilots, a much higher proportion of ENABLE platform users were aged 34 or under than non-platform users.

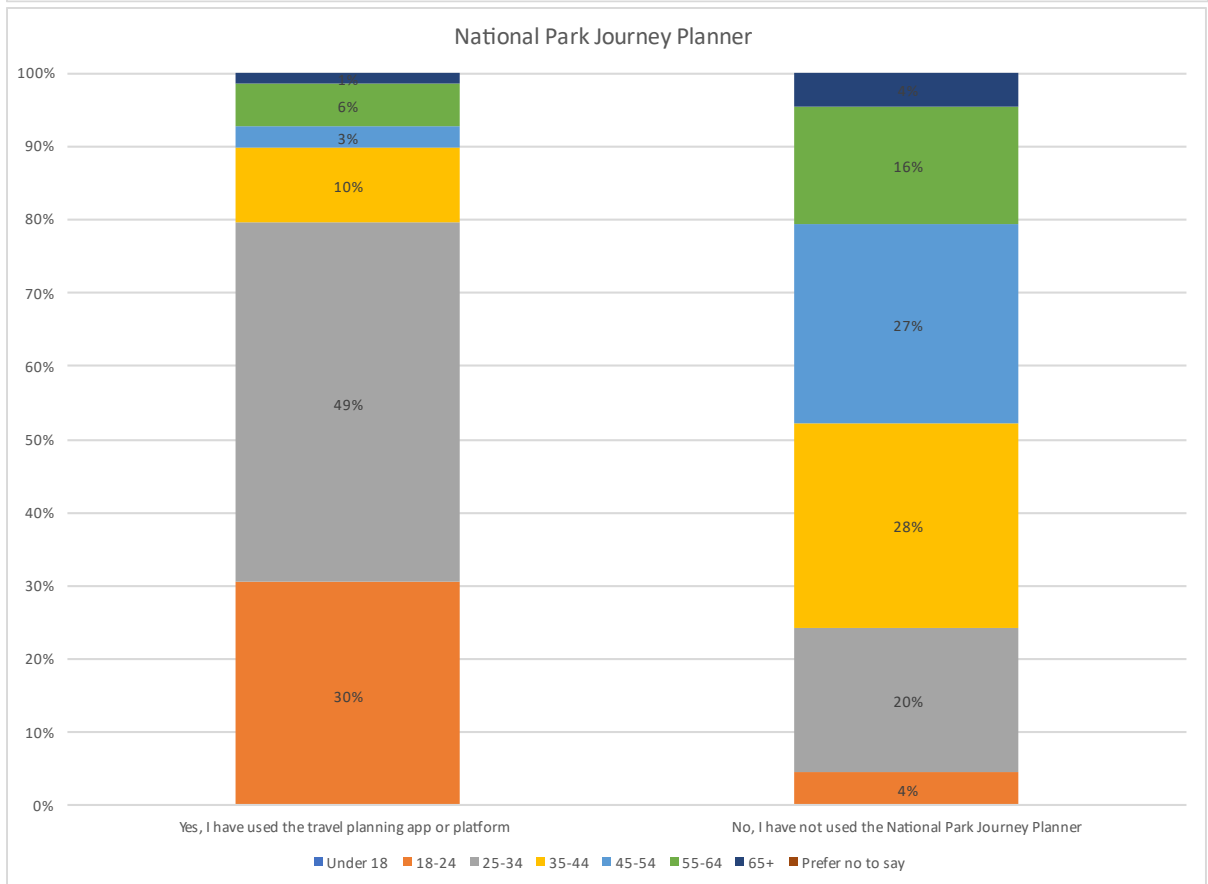
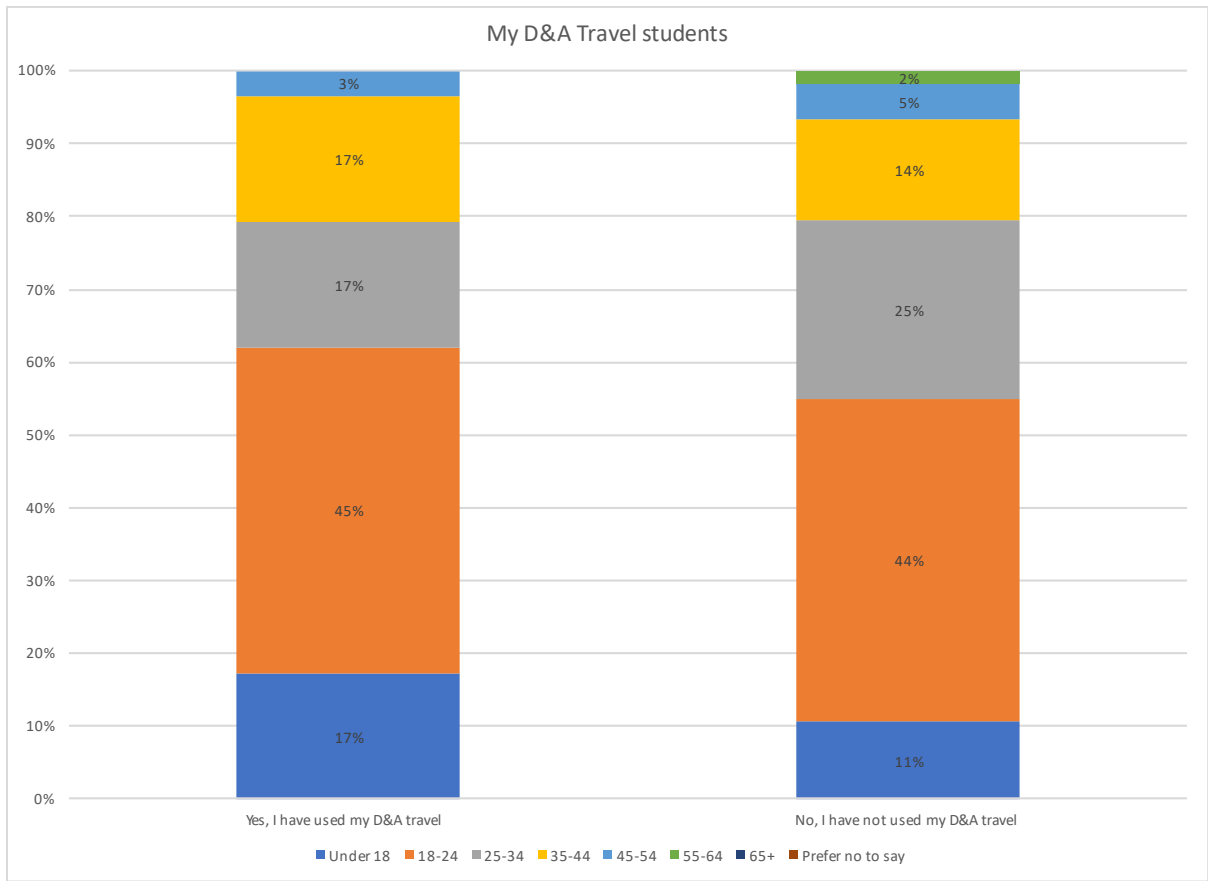
This difference was less pronounced in the My D&A Travel pilot, where the proportion of users who were under 18 years old was slightly higher than the proportion of non-users.

These data may imply that the ENABLE platform has – to varying degrees - been successful in helping younger audiences across the three pilots to reach their destinations.⁸

Figure 3.6. Age range of platform users vs non-users.



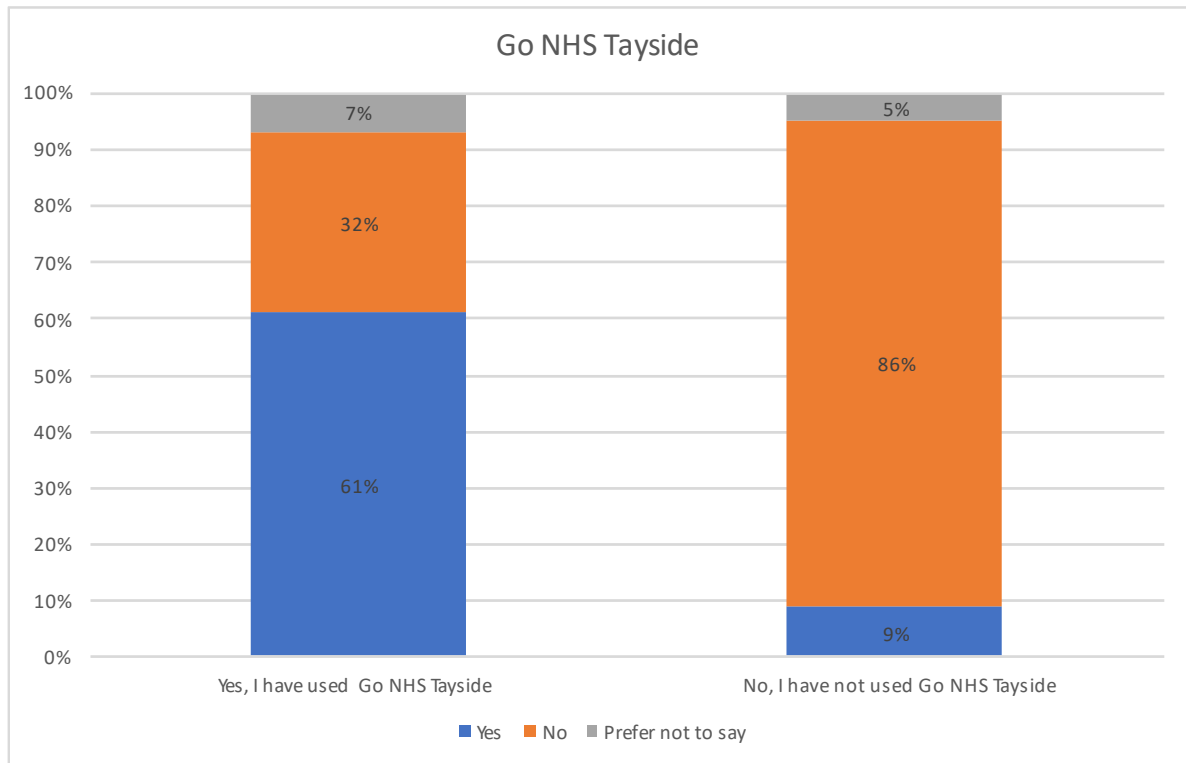
⁸ Go NHS Tayside – Users: N=88. Non-users: N=336.
National Park Journey Planner – Users: N=69. Non-users: N=247
My D&A Travel (students) - Users: N=29. Non-users: N=358.



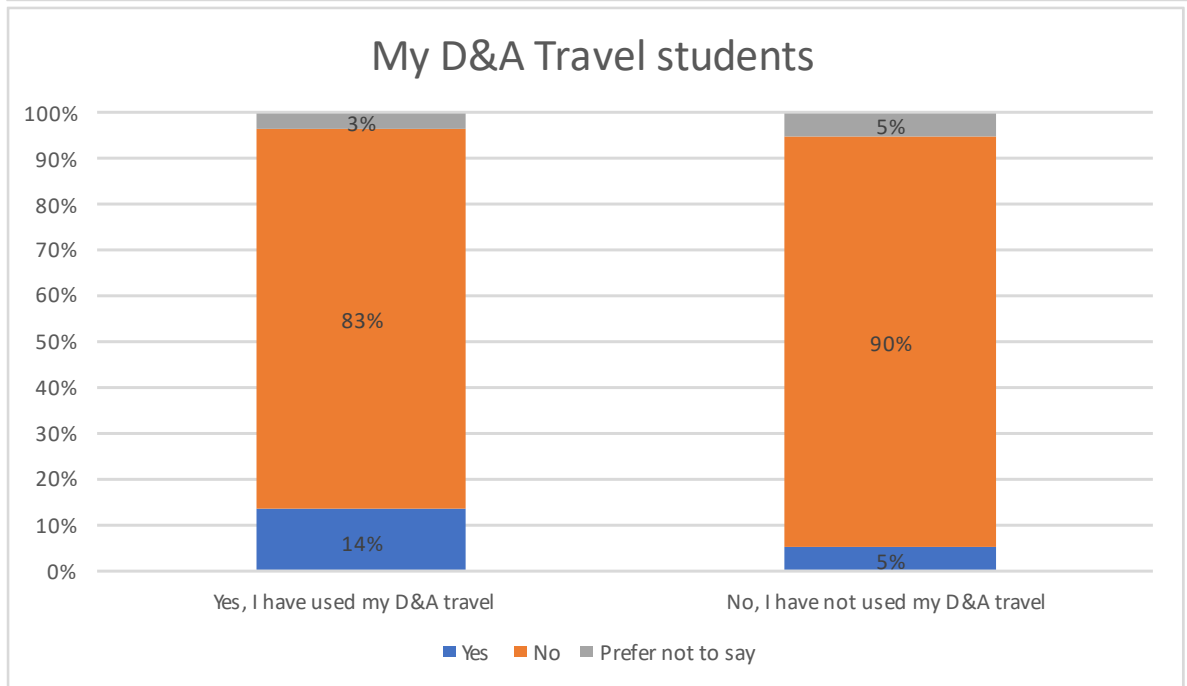
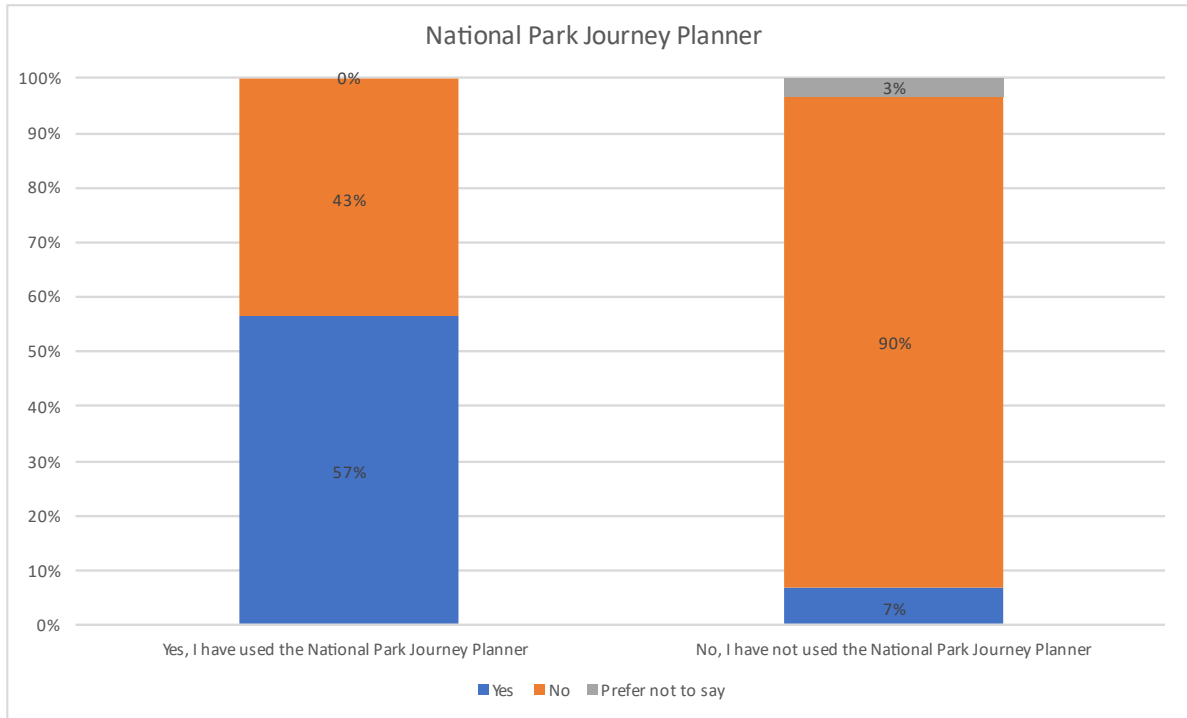
Disability

Across all three pilots, survey results⁹ indicate respondents who were platform users were more likely to have a disability which affects their travel arrangements than respondents who were non-users. This difference was less marked in the My D&A Travel pilot than the other two pilots, where the differences were substantial.

Figure 3.7. Users vs non-users who report having a disability which affects their travel arrangements.



⁹ Go NHS Tayside – Users: N=88. Non-users: N=336.
National Park Journey Planner – Users: N=69. Non-users: N=250
My D&A Travel (students) - Users: N=29. Non-users: N=357.



3.3.2 Travel constraints for users vs non-users

This section summarises a selection of survey results that compare and contrast the responses of platform users with responses offered by non-users.

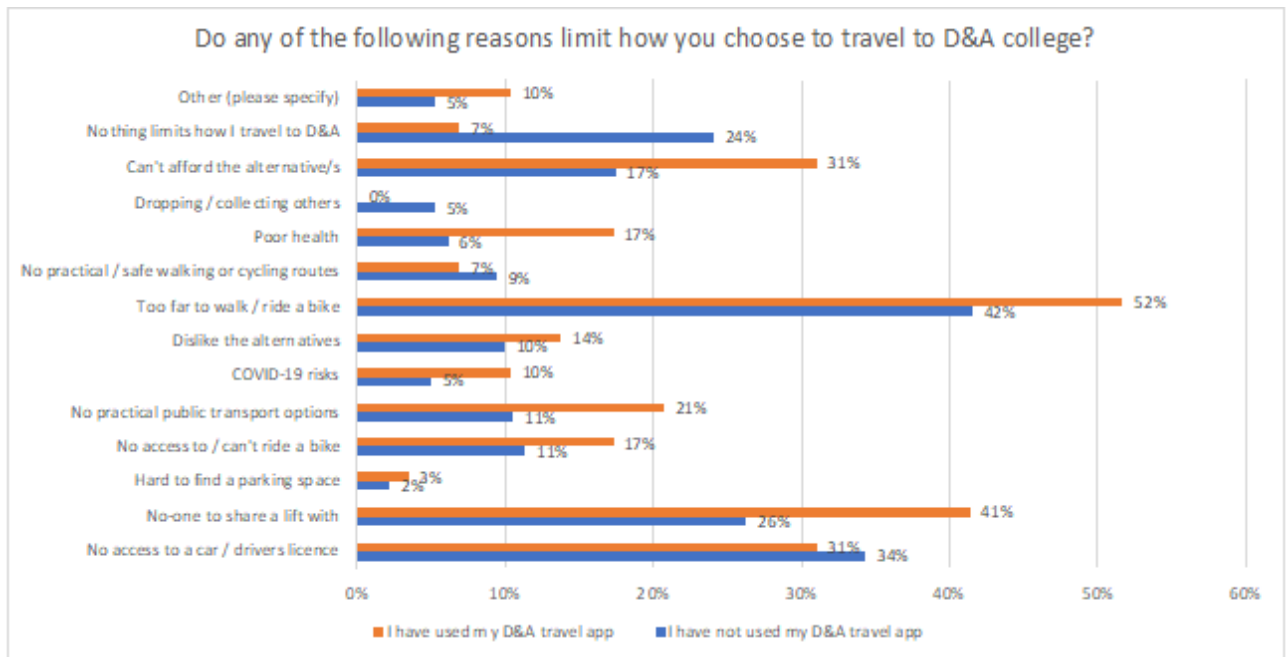
My D&A College

Dundee and Angus College Students:

Unless otherwise stated, the number of student survey respondents that had used my D&A Travel was 29 and the number of student survey respondents that had not used the app was 361.

Users were more likely than non-users to experience issues that limited how they travel: A low proportion (7%) of respondents that had used the app stated that 'nothing limits how I travel' compared with 24% of respondents that had not used the app, suggesting app users were more likely to experience constraints to how they travel

Fig 3.8 What reasons may limit how you travel to college?



Travel options

- 41% of app users stated they had 'no-one to share a lift with' whereas only 26% of respondents that have not used the app indicated this was a barrier for them
- App users may be more likely to travel further to attend college than non app users, with 52% of app users stated it is 'too far to walk or cycle' to college, compared with 42% of respondents who had not used the app

Health constraints

- Similarly, 17% of app users mentioned 'poor health' as a limiting factor to the way they travel to D&A College, but only 6% of respondents that have not used the app mentioned poor health as a limitation to travel.

Journey complexity or frequency

- 77% of respondents that had used the app (n=24) travelled to D&A College by more than one mode of transport, in comparison 49% of respondents that had not used the app (n=351)
- 66% of survey respondents that had used the My D&A Travel app (n=24) travelled to / from D&A College at least three times a week, whereas only 49% of respondents that had not used the app (n=351) did so

Journey experience

- 38% of respondents who had used the journey planner indicated they either 'disagreed' or 'strongly disagreed' that their journey was stress-free compared with 23% of respondents that had not used the journey planner. This could, for instance, be caused by a higher proportion of app users tending to undertake more complex (e.g. multi-modal) journeys than non-app users.

Cost of travel

- 48% of respondents who had used the app (n=29) took advantage of a travel discount, while 35% of non app users (n=359) did so.
- Survey results suggest responding app users may be more likely than responding non app users to travel by the cheapest mode of travel as a larger proportion of app users (31%) than non-app users (17%) indicated they could not afford the alternative modes of travel.

Survey responses suggest that the travel behaviour of both app users and non-app users may often be based on habitual choices. When asked 'Did any of the following reasons influence how you travel to D&A?' 55% of respondents that have used the app stated they '*always travel this way*' whilst 50% of respondents that have not used the app gave this response.

Dundee and Angus College Staff:

Unless otherwise stated, the number of staff respondents that had used my D&A travel was 12 and the number of survey respondents that had not used the app was 218.

App users self-reported having more barriers to how they travel than non app users. 8% of app users indicated 'nothing limits how I travel to D&A', compared to 17% of non-users of the app.

Travel options

- 25% of respondents that had used the app stated they had 'no-one to lift share with' whereas only 14% of non-users mention this as a barrier to their travel to D&A College.
- 33% of app users indicated they 'dislike the alternatives' compared with 11% of respondents that had not used My D&A Travel.
- 92% of survey respondents who have used the app drove a car or van alone, whilst 83% of non app users drove a car or van alone.

Journey complexity or frequency

- Survey results indicate app-users travel more regularly to D&A College than non-app users. 67% of respondents who have used the app travel to D&A five times a week or more, whereas 36% of respondents that have not used the app travel to D&A College five times a week or more.

Journey Experience

- Respondents that had used my D&A travel (n=12) felt more strongly that their journey to college was simple / easy compared with respondents that had not used the app (n=215). 67% of respondents that had used my D&A travel 'strongly agreed' their travel choices to college were simple and easy compared with 55% of respondents that had not used the app.
- Respondents that had used the app (n=12) felt more strongly than respondents that had not used the app (n=214) that their journey was time efficient. 100% of app users either 'strongly agree' or 'agree' that their journey to D&A College was time efficient whereas 92% of respondents that had not used the app either 'strongly agree' or 'agree' their journey was time efficient.
- Survey respondents who had used the app (n=12) felt more strongly than respondents that had not used the app (n=214) that their journey to college was reliable. 67% of respondents that had used the app 'strongly agree' their journey was reliable compared with 54% of respondents that had not used the app stating they 'strongly agree' their journey was reliable.
- Respondents that had used my D&A travel (n=12) felt more strongly than respondents that had not used the app (n=216) that their journey was stress-free. 92% of staff respondents that had used the app either 'strongly agree' or 'agree' that their journey was stress free compared with 79% of respondents that has not used the app.

Cost and journey time

- Respondents that had used my D&A travel (n=12) were more likely to disagree than respondents than had not used the app (n=213) that their journey was affordable. 33% of respondents that had used the app 'disagreed' that their journey was reliable whereas 15% of respondents that had not used the app 'disagree' their journey is affordable.

Results suggest My D&A Travel has not changed the travel behaviour of most staff, with 67% of app users stating they '*always travel this way*' and 47% of non app users giving the same response. This may be linked to app users experiencing more barriers to how they travel than non-app users.

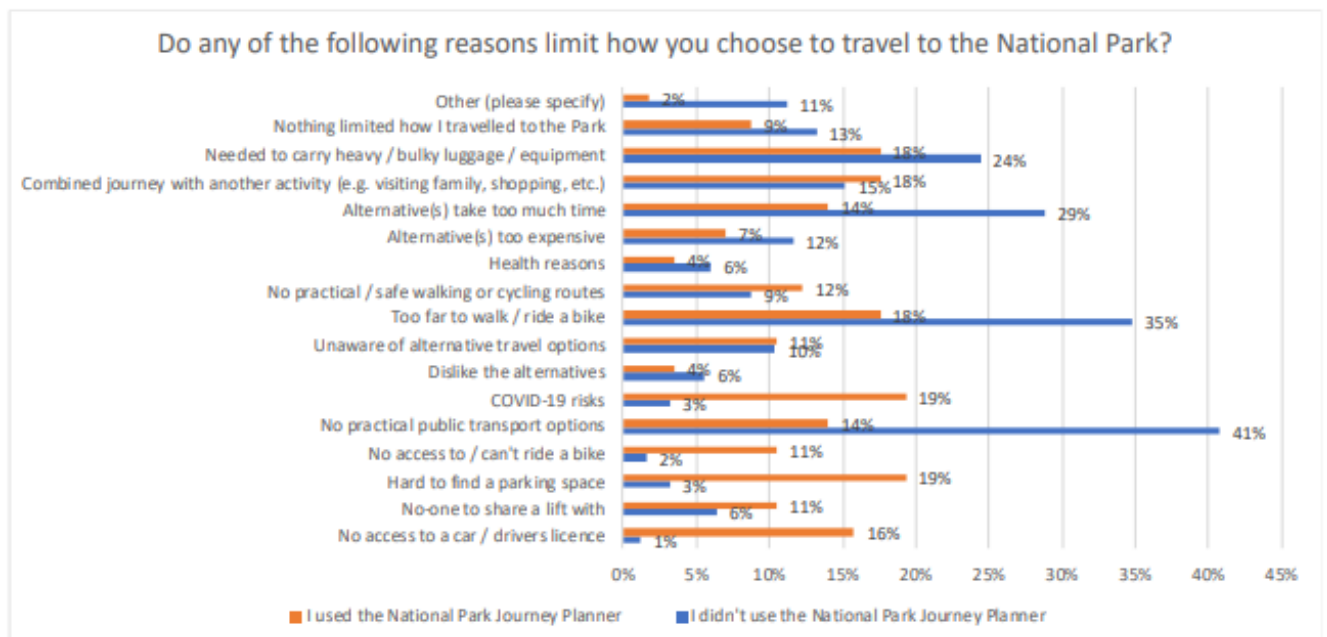
National Park Journey Planner

Unless otherwise stated, the number of survey respondents that had used the National Park Journey Planner was 57 and the number of survey respondents that had not used the journey planner was 250.

Travel options

- 16% of app users reported having ‘no access to a car or driving licence’ compared with 1% of non app users. This implies that the platform may be helping non-car owners to access green and blue space and leisure opportunities.
- Only 14% of respondents that had used the National Park Journey Planner felt that there were no practical public transport options to the National Park, compared with 41% of respondents that had not used the journey planner.
- Platform users were influenced by a range of different media when deciding how to travel to the National Park. 30% of respondents who had used the National Park Journey Planner were influenced by both National Park Communications and (separately) an Internet search, whereas only 1% of respondents that had not used the app were influenced by National Park Communications and 4% were influenced by an internet search.

Fig 3.9 What reasons may limit how you travel to the National Park?



Journey complexity or frequency

- 47% of respondents who had used the National Park Journey Planner (n=15) had more than one journey part for their most recent journey to the National Park, whereas only 24% of respondents that had not used the Journey Planner (n=206) had more than one journey part for their most recent journey to the Park. This suggests respondents who were platform users were more likely to

undertake multimodal journeys than non-platform users who responded to the survey.

- 19% of respondents that had used the app stated 'it's hard to finding a parking space' as a factor that limits how they chose to travel, whereas only 3% of respondents that had not used the journey planner gave the same response. This could, for instance, suggest that app users who completed the survey may be using the National Park Journey Planner to find alternative travel options to driving as they find it hard to find somewhere to park on arrival.

Journey Experience

- 40% of respondents who had used the journey planner were '*not so confident*' they would arrive without delays compared with 7% of respondents that had not used the journey planner. This may imply that app users who responded to the survey are more tolerant and accommodating of journey delays (or that they simply didn't have a choice) than non-app using respondents.
- 89% of respondents who had used the National Park Journey Planner allowed for extra time getting to the park compared with 46% of respondents that had not used the app. This may be one mechanism platform users employ in response to not feeling confident they would arrive without delays.
- Survey respondents who had used the National Park Journey Planner were more likely to disagree that their journey to the National Park was stress-free compared with respondents that had not used the journey planner. 27% of respondents that had used the journey planner either 'disagree' or 'strongly disagree' that their journey to the National Park was stress-free, in contrast only 5% of respondents that had not used the journey planner 'disagree' or 'strongly disagree' that their journey was stress free. This could, for example, simply reflect the nature, extent and/ or quality of the transport options taken by app users than of the impact of the app itself on users.

Cost and journey time

- 93% of survey respondents that had used the National Park Journey Planner compared the cost of different journey options whereas only 12% of survey respondents that had not used the journey planner did so. This may suggest that the National Park Journey Planner is helping users to compare the cost of different travel options, although conversely, users may simply be predisposed to doing so.
- 93% of survey respondents who had used the journey planner for their most recent visit to the park compared different journey times of different travel options compared with only 17% of respondents who had not used the Journey Planner.

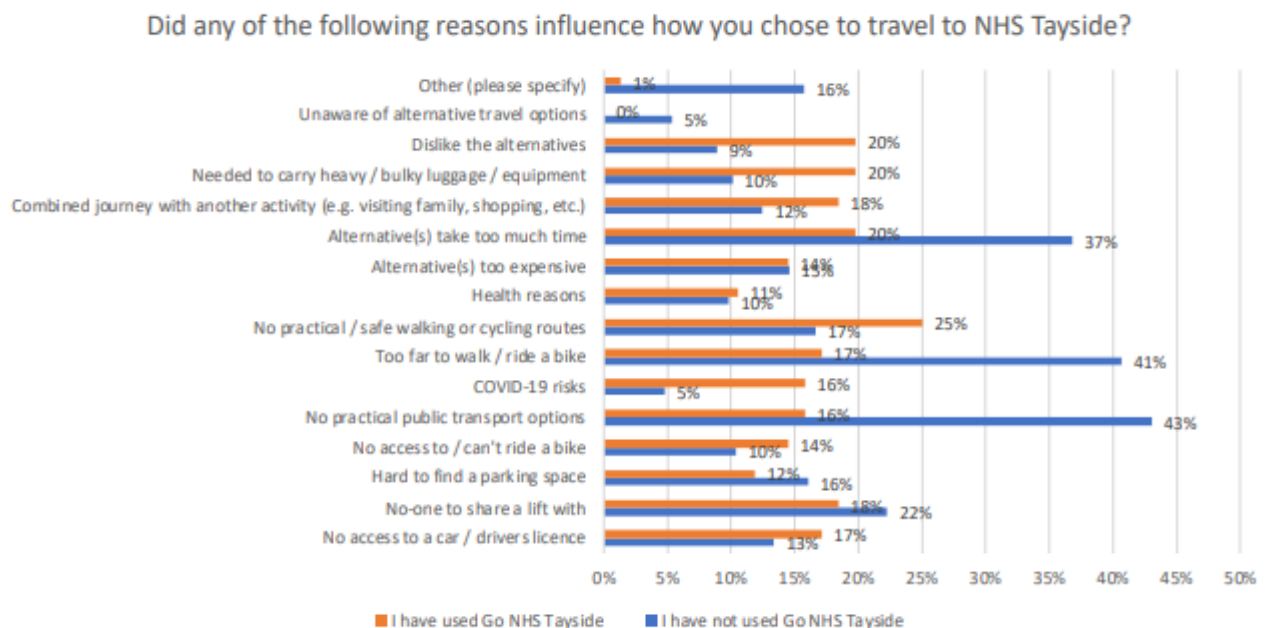
Go NHS Tayside

Unless otherwise stated the number of survey respondents that had used the Go NHS Tayside platform was 76 and the number of survey respondents that had not used the Go NHS Tayside platform was 337.

Travel options

- 17% of respondents that had used the platform stated that it was 'too far to walk / cycle', compared with 41% of respondents that have not used the platform. This suggests that platform users may have more opportunities for active travel than non-users.
- Platform users were influenced by different sources of travel information. 26% of respondents that had used Go NHS Tayside stated that their travel was influenced by an 'internet search' whereas only 4% of respondents that had not used the platform were influenced by an 'internet search'. 11% of platform users stated their travel arrangements to NHS Tayside was influenced by 'NHS Communications', but in contrast only 1% of respondents that had not used the platform were influenced by 'NHS Communications'. 50% of respondents that used the platform were influenced by travel 'suggestions from others', compared with 6% of respondents that had not used the platform.

Fig 3.10 What reasons may limit how you travel to NHS Tayside major sites?



Journey complexity or frequency

- 87% of respondents that had used Go NHS Tayside had more than one journey part for their most recent journey to an NHS Tayside site compared with 39% of respondents that had not used the platform using multi modal travel.

Journey Experience

- 69% of respondents that had used Go NHS Tayside indicated they were '*Extremely confident*' or '*Very confident*' they would arrive at their destination on time compared with 64% of respondents that had not used Go NHS Tayside. There is very little difference between user and non-user responses to this question, which may suggest confidence in arrival times is similarly important to both groups.
- Respondents that had used Go NHS Tayside felt that their journey to NHS Tayside was stress free. 69% of respondents that had used the platform either 'strongly agreed' or 'agreed' that their journey to NHS Tayside was stress-free compared with 58% of respondents that had not used the platform.
- Respondents that used Go NHS Tayside allowed more time for unexpected delays than respondents that did not use Go NHS Tayside. 93% of respondents that had used Go NHS Tayside allowed time for unexpected delays compared with 73% of respondents that had not used Go NHS Tayside

Cost and journey time

- 87% of respondents that had used the platform compared the cost of different journey options compared with 19% of respondents that had not used the platform.
- 91% of respondents that had used the platform compared the journey times of different travel options whereas only 31% of respondents that had not used the platform did so.

3.3.3 User satisfaction

A number of survey questions asked (both directly and indirectly) respondents about their experience of using the ENABLE platform, via one of the three pilot projects. Selected results are summarised below.

D&A College

D&A Students

A total of 29 Dundee and Angus College students who had used the My D&A Travel app responded to the survey. Selected survey results for this group are summarised below.

Satisfaction with journey planner

- 45% rated the app highly, indicating it is either 'very high quality' or 'high quality'.
- 24% of respondents use the app on a regular basis, stating they use the app 'about weekly' or 'about monthly'.

Achieved policy objectives?

- 34% of respondents indicated the app met their travel needs '*Extremely well*' or '*Very well*', with a further 41% of respondents replying '*somewhat well*' to the app meeting their travel needs.

59% of respondents indicated that the app had influenced how or when they chose to travel to and from college.

These results suggest a high proportion of survey respondents found value in using the My D&A Travel platform and that their travel behaviour was influenced by use of the journey planner.

D&A Staff

A total of 12 staff from Dundee and Angus College who had used the My D&A Travel app responded to the survey. Selected survey results for this group are summarised below.

Satisfaction with journey planner

- 58% of staff respondents selected '*high quality*' or '*very high quality*', when asked 'how they would rate the my D&A travel app'.
- 25% of respondents stated they were repeat users of the app.

Achieved policy objectives?

- 67% of staff stated, '*very well*' or '*somewhat well*' when asked 'how well does the my D&A travel app meets your needs?'
- 16% of staff who responded to the survey felt that the app had influenced how or when they travel to or from campus

While fewer staff than student respondents indicated their use of the app had influenced how or when they travelled to or from campus, even a 16% change in travel behaviour would be significant if achieved across a wider population. Other results imply that staff respondents are broadly happy with the app and what it delivers for them.

National Park Journey Planner

A total of 69 users of the National Park Journey Planner app / website responded to the survey. Selected survey results for this group are summarised below.

Satisfaction with journey planner

- Respondents mostly used the National Park Journey Planner to 'plan a journey' and 'choose a method of travel'. 38% responded they 'plan a journey' and 29% state they 'choose a method of travel'. Respondents did not rate other app functions as frequently.
- Respondents are using the National Park Journey Planner regularly. 52% of respondents are using the journey planner at least once a week.

Achieved policy objectives?

- 57% of respondents who had used the National Park Journey Planner either 'strongly agree' or 'agree' that their use of the platform made it more likely they would use public transport, walk or cycle instead of drive.

The high proportion of users who indicated they were more likely to use active and sustainable modes as a result of their interaction with the platform is of particular note as it hints at a possibility that the platform could potentially be an effective instrument for influencing travel behaviour¹⁰.

¹⁰ This question asked whether "the platform made it more likely they would use public transport, walk or cycle instead of drive". It should be noted that the platform data showed the tools were used to investigate public transport options rather than walking or cycling options.

Go NHS Tayside

A total of 88 users of the Go NHS Tayside platform responded to the survey. Selected survey results for this group are summarised below.

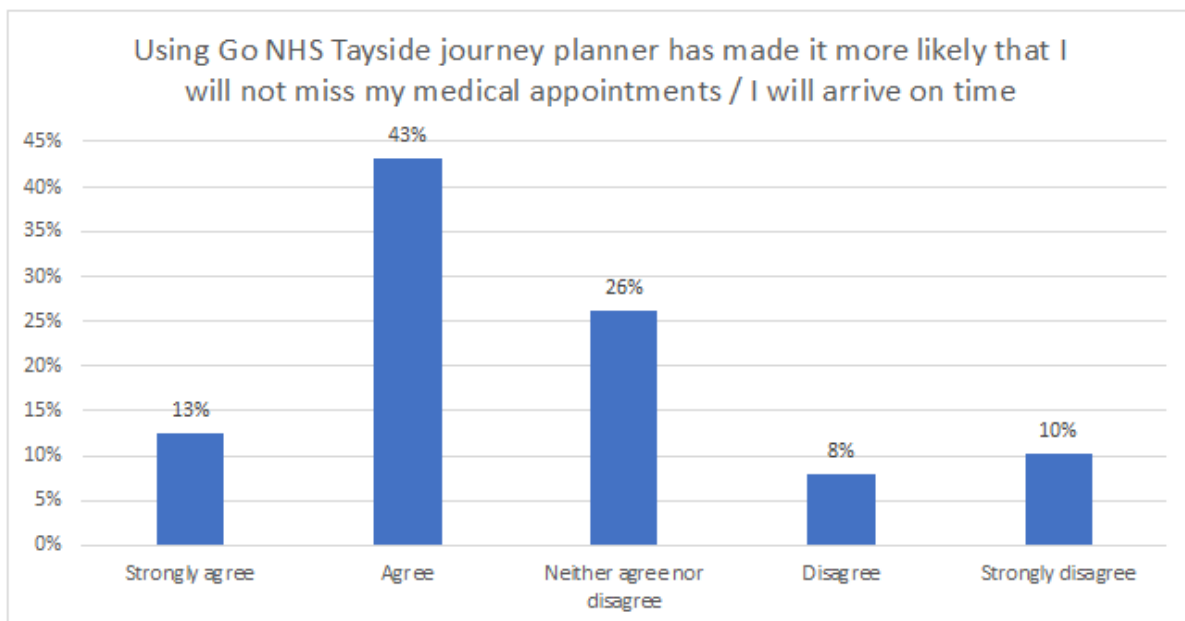
Satisfaction with journey planner

- Respondents mostly used the Go NHS Tayside platform to 'plan a journey' and 'sort a journey by duration, cost and wait time'. 49% responded they 'plan a journey' and 57% state they 'sort journey by duration, cost and wait time'. Respondents did not rate other app functions as frequently.
- Respondents are using Go NHS Tayside platform regularly. 55% of respondents are using the Go NHS Tayside at least 'weekly' with 16% of respondents using the platform 'every day'.

Achieved policy objectives?

- 56% of respondents (i.e. staff, patients and visitors) either 'strongly agreed' or 'agreed' that using Go NHS Tayside has made it more likely they would not miss their medical appointment or that they would arrive on time.
- 59% of respondents that had used Go NHS Tayside either 'strongly agree' or 'agree' that their use of the platform made it more likely they would use public transport, walk or cycle instead of drive.

Fig 3.11 Has the GoNHS Journey Planner made it more likely that users will arrive on time?



Results indicating respondents would be more likely to use active and sustainable modes of travel as a result of their interaction with the platform are noteworthy for the reasons given previously. Also of note is the fact that a high proportion of respondents felt the platform made it less likely that they would miss their medical appointments or arrive on time, as the cost of missed appointments can be a significant burden for the NHS¹¹.

¹¹ Approximately 10%-12% of appointments are missed across NHS Tayside's hospitals

3.3.4 Support for policy objectives

Selected dashboard data and survey results suggest the three ENABLE pilot projects generated broad support for several local, regional and / or national objectives. For instance, survey results imply that The ENABLE platform may – to varying degrees – have helped platform users to: access education, recreational opportunities, work and / or healthcare more easily. In addition, the results may suggest that the platform has:

Helped promote sustainable travel

- Made it more likely that users of the National Park Journey Planner and the Go NHS Tayside platform would use public transport, walk or cycle instead of drive.
- Influenced travel behaviour by changing how and / or when some College students and staff chose to travel.
- Provided users of all three pilot platforms with greater confidence that there were practical public transport options available to get them to and from their destinations.

Improve access to services for all

- Made it more likely users of the Go NHS Tayside platform would not miss or arrive late to their medical appointments.
- Helped students of Dundee and Angus College, including those who have more constrained and/ or complex transport choices, to access education.
- Made it easier for people without access to a car to access work, and / or green and blue spaces in Loch Lomond and The Trossachs National Park.
- Been successful across all three pilots in helping younger audiences and users with a disability to reach their destinations.
- Helped users of the National Park Journey Planner and the Go NHS Tayside platform compare the cost of different travel options, as well as the journey times of different travel options.
- Assisted users of the National Park Journey Planner and the Go NHS Tayside platform to make more complex, multi-modal journeys.

Table 3.1: Headlines from surveys

	Have the journey planners been effective?	Is there a need?
MyD&A students	<p>Liked: 75% of respondents indicated the app met their travel needs</p> <p>Promotes sustainable travel: 59% of respondents indicated that the app had influenced how or when they chose to travel to and from college</p> <p>96% of journeys planned were sustainable journeys. (72% bus; 6% train; 6% public transport mix; 4% taxi; 2% cycle; 6% walk)</p>	<p>More likely to have a disability: Users are more likely to have a disability which affects their travel arrangements (14% users vs 5% non-users)</p> <p>17% of users mentioned '<i>poor health</i>' as a limiting factor to the way they travel (6% for non-users)</p> <p>Journey Complexity: 77% that had used the app travelled by more than one mode of transport (49% for non-users)</p> <p>Sensitivity to Cost: 31% of users indicated they could not afford the alternative modes of travel (17% for non-users)</p> <p>Fewer travel options: 7% of users stated that '<i>nothing limits how I travel</i>' compared with 24% of non-users, suggesting 93% of users were more likely to experience constraints to how they travel than non-users (76%)</p> <p>41% of app users stated they had '<i>no-one to share a lift with</i>' (26% for non-users)</p> <p>31% of users do not have access to a car or driving licence</p> <p>Used for forward planning: 59% of journeys were planned at least one day in advance.</p>
GoNHS Tayside	<p>Promotes sustainable travel: 59% users say the webapp made it more likely they would use public transport, walk or cycle instead of drive</p> <p>Users were more aware of public transport options. Only 16% users felt there were no practical public transport options (42% for non-users)</p>	<p>More likely to have a disability: Users significantly more likely have a disability which affects their travel arrangements (61% users vs 9% non-users)</p> <p>Cost sensitive: 87% of users compared the cost of different journey options (19% for non-users)</p>

Table 3.1: Headlines from surveys

	Have the journey planners been effective?	Is there a need?
	<p>Journeys planned through the app tended to be sustainable journeys (bus 47%; public transport mix 12%; taxi 12%; train 1%; cycle 8%; walk 3%)</p> <p>Reduces did not attends: 56% of users say the webapp made it more likely they would not miss their medical appointment or that they would arrive on time</p> <p>Reduces anxiety: 69% users say that their journey to NHS Tayside was stress-free compared (58% for non-users)</p>	<p>Journey complexity: 87% of users had more than one journey part for their journey (39% for non-users)</p> <p>17% of user do not have access to a car (13% of non-users)</p> <p>Used for forward planning: 93% of journeys were planned at least one day in advance</p>
National Park Journey Planner	<p>Promotes sustainable travel 57% of users said that the platform made it more likely they would use public transport, walk or cycle instead of driving</p> <p>Users were more aware of public transport options. Only 14% of users felt that there were no practical public transport options to the National Park, (41% for non-users)</p> <p>84% of journey plans were for sustainable modes of travel (30% public transport mix; 23% bus; 6% rail; 11% taxi; 10% cycle; 4% walk)</p>	<p>More likely to have a disability: Users significantly more likely have a disability which affects their travel arrangements (57% users vs 7% non-users)</p> <p>Fewer travel options: 16% of app users reported having 'no access to a car or driving license' compared with 1% of non-users</p> <p>Cost sensitive: 93% of users compared the cost of different journey options (12% of non-users)</p> <p>Complexity of journey: 47% of users had more than one journey part for their journey (24% of non-users)</p> <p>Used for forward planning: 78% of journeys were planned at least one day in advance.</p>

3.3.5 Potential for growth

This section draws on survey results to provide a broad indication of the potential for the number of platform users to grow over time.

Willingness of users to promote the journey planners

This section summarises how willing users of the platform were to promote each of the ENABLE tools to friends or colleagues. Whilst user satisfaction with the journey planning tools was high (see *use and user experience* above)

- 21% of College students who had used the platform indicated they would promote the app to a friend or a colleague. 8% of College staff who had used the platform indicated they would promote the app to a friend or a colleague.
- 29% of survey respondents who had used the National Park Journey Planner indicated they would promote the platform to a friend or a colleague.
- 18% of survey respondents who had used the Go NHS Tayside platform indicated they would promote the platform to a friend or a colleague.

While these results suggest there is room for improvement, the frequency of platform use suggests that users were experiencing sufficient benefits from their use to encourage repeat use. This may imply that the platform generates sufficient user benefits to attract new and retain existing users over time, and that these results can be improved upon over time.

Non-User Awareness

This section summarises non-user respondents' awareness and use of the platform, as well as their attitudes towards a similar service to the ENABLE platform.

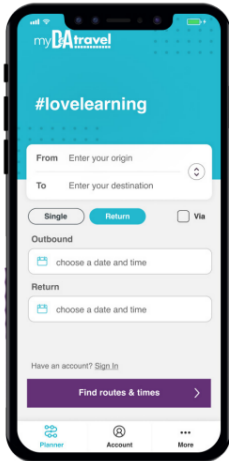
D&A College

D&A Students:

93% of students who responded to the survey had not used the *My D&A travel* app, of which 73% had never heard of the app.

63% of students who responded to the survey and had not used the My D&A Travel platform (n=361) indicated that a single digital platform where you could plan, book, and pay for journey would be either 'Extremely helpful' or 'very helpful'

This suggests that – with improved promotion and communications - there may be significant potential to increase awareness about the app, and the number of users within Dundee & Angus College's student population.



D&A Staff:

6% of all staff respondents (n=230) had used the My D&A travel app, of which 3% had a registered account. 95% of staff that responded to the survey had not used my D&A travel app, of which 54% had never heard of the app.

75% of staff who responded to the survey and had not used the My D&A Travel platform (n=218) indicated that a single digital platform where they could plan, book, and pay for journey would be 'extremely helpful'.

These figures again suggest there may be good potential to increase the number of app users from the staff population¹².

National Park Journey Planner

79% of all survey respondents had not used the National Park Journey Planner of which 61% of respondents had never heard of it.

Half of the respondents to the survey that had not used the National Park Journey Planner (n=250) indicated that a single digital platform where you can plan, book, and pay for travel would be either 'extremely helpful' or 'very helpful'. Most indicated they would find being able to 'plan a journey' (71%) and 'show a journey on a map' (62%) to be the most useful features.

Results once again suggest that use of the platform could be increased by ongoing and potentially improved promotion and communications.

Go NHS Tayside

21% of all survey respondents (n=425) had used the Go NHS Tayside platform. 79% of survey respondents had not used the platform, of which 55% had never heard of the platform. This again implies there may be strong potential to grow usership of the platform via improved promotion and communications.

80% of survey respondents who had not used the Go NHS Tayside platform (n=337) indicated that a single digital platform where they could plan, book and/ or pay for a journey would be either 'extremely helpful', 'very helpful' or 'somewhat helpful'. Most indicated they would find being able to 'plan a journey' (66%) and 'show journey stages on a map' (50%) to be the most useful features.

Potential for growth: summary

Even though the journey planning tools were distributed via the service provider (NHS Tayside, LLTNPA, D&A College) the survey results from all three pilots indicate:

- most respondents were not aware of the ENABLE platform
- a high proportion of respondents who had not used the app felt a platform like ENABLE would be either 'extremely helpful' or 'very helpful'.

This may suggest the potential to expand the number of users of each of the three pilot platforms is strong

¹² When considering the differences between staff and students responses regarding use of the app, it is perhaps worthwhile noting the difference in car ownership between these two groups and hence the need to seek information about travel choices.

3.4 Value for money assessment

As explained at the start of this section, it has not been possible for the evaluation process to gather a robust enough data set to quantify the user, non-user and provider benefits in the format set out in the original monitoring and evaluation proposal.

Specifically, the sample sizes were too small given the range of potential explanatory factors that can't be controlled for us to draw any meaningful conclusions. Few obvious patterns emerged from the answers to the key questions on travel mode and time/distance travelled that are essential to the quantification of the benefits and those that do are variable and inconsistent. We would not recommend attempting to use them to ascribe monetary values.

For this reason, a range of other evidence has been used to identify potential economic benefits.

3.4.1 Potential user benefits

While the traditional time and cost benefit/disbenefits can't be reliably estimated from the sample sizes available there are other elements of user benefits for platform users where the data does provide some indicators of their likely presence. These include:

- Users being better informed about their mode options, the potential journey times and costs of making the journey by a particular mode
- The health benefits that arise from more active travel (including use of public transport)
- Greater journey time certainty
- The ability to pre-plan journeys more accurately and to have more flexibility to change plans during the journey

Users being better informed about their mode options, the potential journey times and costs of making the journey by a particular mode

There is certainly some self-reported evidence that the platforms are influencing the choice of mode. For example, 27% of Dundee and Angus College student platform users stated that the platform had influenced (a great deal or a lot) how they chose to travel to campus. There would also seem to be some potential to increase this figure since 53% of all students who have not used the platform stated that they would find a platform extremely helpful or helpful. A similar figure (47%) was reported by college staff who had not used the platform.

The potential value from being able to make more informed travel decisions comes through from several of the data sources, whether in terms of journey times or cost. In the NHS Tayside pilot a much larger proportion (91%) of respondents that had used the platform had compared the journey times of different travel options. Only 31% of non-users did so. Similarly, 43% of non-platform users stated that there was no practical public transport option for their journey. This fell to 16% for platform users. Of course, this could be because the platform users live on routes with better existing public transport links or because information on journey time is more important to them because they do more complicated journeys, but it does illustrate that the platform provided easy access to this information.

Similarly, a larger proportion (87%) of survey respondents that used the platform compared the cost of different options to the NHS Tayside site they were visiting, in contrast to just 19% of respondents that had not used the platform. Perhaps as a consequence, some 17% of respondents that had not used the platform 'disagreed' or 'strongly disagreed' that their journey to NHS Tayside was affordable compared with only 5% of respondents that had used the platform.

The health benefits that arise from more active travel (including use of public transport)

The potential to encourage more active travel is also identifiable from the survey results. In the National Park pilot, 57% of users agreed/ strongly agreed that it would make them more likely to use public transport/ walk/ cycle¹³. There is a similar story from the NHS Tayside where 59% agreed/strongly agreed that it made them more likely to use more sustainable modes.

Greater journey time certainty/reliability

Another potential benefit is journey time certainty. In the NHS Tayside survey, 18% were not so/ at all confident they would arrive on time and 77% added extra time into their planned journeys (43% adding more than 10 mins). For platform users, only 4% were not so/ at all confident of arriving on time. As well as being a user benefit, this also has the potential to be a wider economic benefit if it helps in reducing missed/ late appointments (discussed later in this section).

The ability to pre-plan journeys more accurately and to have more flexibility to change plans during the journey

The ability to pre-plan and modify journeys is also a potential benefit to users. The Dundee and Angus College surveys showed that 60% of students at the college use an app or website to access travel information (although only 17% of staff, who mostly drove to work, did so). Students mainly use their smartphones to plan before their journey (55%), but the surveys recorded a significant amount of in-journey use, checking arrival times (31%) and re-planning a journey (25%).

Pre-planning can of course be relatively last minute. The Dundee and Angus College dashboard data showed that 36% of student journeys by platform users are planned within 15 minutes of the departure time. In contrast the National Park dashboard data shows that 78% of journeys were planned at least one day ahead, reflecting that there will be more people doing less familiar journeys than in the two other pilots. Nevertheless, of those National Park journeys planned on the day, most probably journeys that are taken once in the National Park, 42% are done so within 15 minutes of travel departure, suggesting again a high level of spontaneity/ flexibility perhaps being enabled by the platform.

There is ample evidence from all three pilots that digital data sources are commonly used to plan journeys (in advance and en-route), although the extent appears to vary by journey purpose and other sources, notably Google Maps, dominate. Some 53%

¹³ It should be noted that the proportion of walking and cycling trips planned was small compared to the proportion of public transport trips. However the MIF Investment Fund Guidance noted that "traditional modes of transport such as bus or rail are considered active as they have an element of walking involved to access".

of National Park survey respondents used a smartphone to plan, book or pay for travel, 29% used Wi-Fi on way and 23% took travel details on their phone. 71% used Google maps. In NHS Tayside some 32% used a smartphone to plan, book or pay for travel 20%, used WIFI on way and 10% took travel details on their phone. At D&AC, Google maps was the most commonly used app for journeys to college by students (38%) and the most common for other journeys (56%). This dominance of Google Maps does however sound a note of caution about the extent to which these convenience benefits can be confidently ascribed to the platform of course.

Nonetheless there is some evidence to suggest that there are likely to be benefits to platform users. Whether this is through the ability to make mode choices that best meet their needs in terms of journey times, costs and affordability, having greater certainty over journey and arrival times, greater confidence to plan and if needs be amend a journey plan at short notice, or simply the ability to choose modes that encourage active travel and to gain some health benefits from doing so.

3.4.2 Potential non-user benefits

Non-user benefits [carbon, air quality, road decongestion, accident reduction] will largely arise as a consequence of people switching to more sustainable modes and reducing their car use. There is some evidence from the data sets of:

- Platform users using more sustainable modes (primarily public transport) than non-platform users
- The platform (potentially) having influenced that choice
- The opportunity for these patterns to become embedded (through regular use of the platform)

Platform users using more sustainable modes (primarily public transport) than non-platform users

As noted under 'User benefits', there is some evidence from the Dundee and Angus College survey that the platform might be influencing the choice of mode, and this is supplemented by some supporting evidence from the dashboard. This shows that in 45% of the bus journeys 'made' (remembering that the last viewed mode is assumed to be the one taken) the option of using the car for that journey had also been viewed, suggesting that an element of choice had taken place. Overall, the dashboard data showed that bus was the 'chosen' mode for 74% of journeys by registered platform users (and for 68% of all journeys by guest accounts). Zero car journeys were planned by registered accounts.

Similarly, a larger proportion of survey respondents (85%) that had used GO NHS Tayside platform had made multi modal journeys compared with respondents that had not used the platform, of whom, 61% travelled by one mode of transport.

The platform (potentially) having influenced that choice

Some 26% of the Go NHS Tayside users stated they would have used the car if they hadn't had access to the platform. Dashboard data shows a relatively high proportion of public transport use with 47% of the final journeys viewed being by bus, 12% being a mix of public transport options and 18% being car. For Ninewells Hospital, the share of bus and a mix of public transport modes was 69%.

In the National Park pilot, the figures are a little lower with 13% of platform users stating that they would have used the car rather than the mode(s) they did if they hadn't had access to the platform. However, the dashboard data for the National Park does reinforce the suggestion that there are car owners choosing other modes in preference. Some 56% of registered account holders had access to a car. Car use (as the sole mode) accounted for only 16% of journeys planned by platform users, a much lower modal share than recorded in the After survey. Public transport use (at 29% overall) appears to be correspondingly higher.

The opportunity for these patterns to become embedded (through regular use of the platform)

There is some evidence that these positive patterns could become embedded – 52% of the National Park platform users are using it at least weekly – a similar proportion to those saying it would influence future choice of mode. Similar figures are seen in the NHS Tayside survey where 55% use the platform at least weekly.

Without an understanding of causality, we can't confidently ascribe this as a behavioural change benefit of the platform, although the stated responses do suggest that an element of positive choice in favour of sustainable modes has taken place and it is likely that platform users are contributing towards these non-user benefits as a consequence of their predominant use of public transport.

3.4.3 Potential provider benefits

If some of this public transport patronage is as a result of modal shift (and there are some small pieces of evidence to suggest that this is possible) this would result in more revenue to public transport operators.

With the generally modest scale of take-up of the journey planning tools in the three pilots this benefit is correspondingly modest and dispersed across a number of services in each pilot area, but of some benefit to operators, nonetheless.

3.4.4 Wider outcomes

Our proposed approach to the value for money assessment did not include the potential longer-term benefits [access to opportunities in further education and to leisure activities, reduction in missed medical appointments etc] for the service organisations involved in the pilot schemes on the grounds that they would be unlikely to be evidenced within the time frame of the pilots. However, in a similar manner to that which we have seen for the user, non-user and provider benefits, there are a few pieces of evidence from the surveys that provide pointers towards their likely existence. They include the potential for the platform to:

- **Enable students to access further education opportunities that they might otherwise miss out on:** For example, 23% of students and 23% of staff said that travel to/ from Dundee and Angus College played a role in their decision to study/ work there.
- **Make it less likely that patients will miss or have to cancel medical appointments:** 56% of survey respondents that have used the Go NHS Tayside platform “Strongly agree” or “Agree” that it made it more likely that they will not miss their medical appointments, arrive on time for work

or made it easier for them to visit and arrive on time. With missed medical appointments being valued at around £120 per appointment and the value of a further education place being estimated as being worth up to 2.75% of additional salary these could form part of the value for money case.

- **Enable people without access to a car to undertake leisure activities (Loch Lomond and the Trossachs National Park):** Whilst no similar question was asked of National Park Journey Planner users whether the app had helped the user access the Park, it is worth noting that 16% of app users reported having 'no access to a car or driving license' compared with 1% of non-users

3.4.5 Growing the markets

All of the pilot surveys contain some evidence to suggest that there is an openness to the idea of a multi-functional platform, with signs that those who had already started to use it were becoming regular users, while the (much larger) cohort of non-users were expressing support for the concept, even if they weren't using it yet.

There may be particular opportunities in the leisure market where people are less familiar with the journey and the opportunities open to them. There is some evidence from the National Park survey of this potential to grow the market. There is strong support from non-users for the idea of a platform - 50% stating that they would find it very or extremely helpful (rising to 83% if 'somewhat helpful' is also included). At the moment only a small proportion – 7% - of the actual mode choices made were influenced by National Park communications (with a further 8% by internet search) indicating that there is quite a large untapped market.

There is similar evidence of the potential to grow the market in the NHS Tayside survey. There is strong support from non-users for the idea of a single digital platform to plan/ pay/ book journeys, with 46% stating that it would be very or extremely helpful (rising to 79% if 'somewhat helpful' is also included). Again, only a small proportion, just 2% of the actual mode choices made were influenced by NHS Tayside communications with an equally modest number, 8%, by internet search.

Table 3.2 Summary of value for money assessment

User benefits

There is some evidence to suggest that there are likely to be benefits to platform users, whether this is through the ability to make mode choices that best meet their needs in terms of journey times, costs and affordability; having greater certainty over journey and arrival times; greater confidence to plan and if needs be amend a journey plan at short notice; or simply the ability to choose modes that encourage active travel and to gain some health benefits from doing so.

Non-user benefits

There is some evidence from the data sets of:

- Platform users using more sustainable modes (primarily public transport) than non-platform users
- The platform (potentially) having influenced that choice
- The opportunity for these patterns to become embedded (through regular use of the platform)

Without an understanding of causality, we can't confidently ascribe this as a behavioural change benefit of the platform, although the stated responses do suggest that an element of positive choice in favour of sustainable modes has taken place and it is likely that platform users are contributing towards these non-user benefits as a consequence of their predominant use of public transport.

Provider benefits

There are some small pieces of evidence to suggest that this public transport usage could include an element of modal switch, which if true would result in more revenue to public transport operators. With the generally modest scale of take-up of the platform in the three pilots, this benefit is likely to be correspondingly modest and dispersed across a number of services in each pilot area, but be of some value to operators, nonetheless.

Wider outcomes and potential to expand

Finally, there are a few pieces of evidence from the surveys that provide pointers towards the possibility of there being some wider positive outcomes beyond the direct transport-related benefits. They include the potential for the platform to:

- make it less likely that patients will miss or have to cancel appointments (NHS Tayside)
- enable students to access further education opportunities that they might otherwise have missed out on (Dundee and Angus College)

Scaling up

In addition, there is potential for all of the above to expand in scale: all of the pilot surveys contain evidence that suggests an openness to the idea of a multi-functional platform, with signs that those who had already started to use it were becoming regular users, while the (much larger) cohort of non-users expressed support for the concept, even if they weren't yet using it.

3.6 Making Connections Audit

The Tactran Enable programme included an audit by 24 people with a range of disabilities and access needs once the services had been live for a few months. The audit was undertaken by GoUpstream an organisation working with disabled people to explore the accessibility of transport services through hands on usage and exploration.

In late 2021, a series of workshops with disabled people and students to explore the use of the Tactran Enable platform and one of the services in particular - the GoNHS Tayside web app. Working with 24 people over the course of 5 workshops Go Upstream considered how GoNHS Tayside could support them and how it could be developed to provide further support.

Towards the end of the Making Connections work a workshop was held where participants in the Making Connections work outlined their experiences using the Enable services to key stakeholders (Councils and Transport Scotland).

Appendix C provides full details of the Making Connections Audit. Key findings from the audit include:

Content of the tools, and their ‘look and feel’

The Making Connections audit held workshops to look at improving the ‘look and feel’ of the GoNHS apps, and the different ways in which language and icons could be better used to help people navigate - both through the service and through the world. The work also identified information for all three Enable services that would provide reassurance and make it easier to navigate as far as the clinic reception desk, the park’s visitor centre or the lecture theatre. Participants suggested that good information about toilets, spaces to rest and shelter, safe crossings and clear routes would make journey plans more realistic and add more value to using the app.

Reducing complexity – all transport in one place

Participants stated that GoNHS Tayside helps to reduce the complexity of journey planning - it provides different transport options including some that you might not expect such as cycling and even community transport. By showing how the different operators can ‘fit together’ to make up a journey, people felt that the app could take the work out of looking in multiple places and stitching the information together ourselves.

This included investigating different modes for outward and return journeys. - such as taking the train to the destination and catching the bus back again. Participants felt the webapp reflected real life in that people don’t always use the same transport to get there and back.

Reassurance

Participants highlighted that good information can provide reassurance and really liked the fact that the app shows an entire return journey, broken down into its different elements. The ‘step-by-step guide’ allowed users to imagine the journey, a bit like trying it out without leaving our house.

Far Planning

The work also highlighted that the journey planning tools are used at different times, for different purposes:

- 'far planning' - information that we need days or weeks ahead when we plan our trip. Many people use this to consider a range of options in the future – not the immediate journey for today or tomorrow.
- 'Near planning' is information needed in the moment or on the journey itself. This includes service changes and updates.

Users commented that 'far planning' helped reduce anxiety of travelling, by giving confidence who each stage of the trip could be made, especially for hospital appointments and where there was a need to arrive on time.

The feature of far planning emerged strongly in our Making Connections work and in early co-design work with national park rangers. The user is asking what is feasible. There is an opportunity to further understand what other information would support this activity. The need to supplement far journey planning with other activity based information and 3rd party partnerships could be explored.

Actions arising from the audit

The key learnings for the Project Team from the above work were:

Design for simplicity - avoid taking people in too many digital directions, it's easy to get lost in a process. Consider when someone might need particular types of information and when they should be asked to input information.

Think beyond the transport - consider the journey context and its purpose not just the journey itself. Discover what type of non-transport information will support people to make a successful journey.

Consider what 'accessible' means - when we design with people we understand what their journey really looks like and discover the information that will support someone to travel confidently - then we can worry about the 'nuts and bolts' of accessibility (font size, colours, navigation buttons...). Incomplete information made 'more accessible' is still incomplete information.

Don't hold consultations, build relationships - co-design is a process not an event. Plan to involve people early and throughout your process. This is important in both continued improvement of the service but also in disseminating the service into appropriate networks to foster uptake and use.

The collaborative approach between project stakeholders, service leads, technical developers and most importantly the Making Connections Audit participants ensured that real insight was enabled with follow-up action. By undertaking the work, being participants in developing the learnings and then making specific changes, a strong relationship formed. Crucially, it was important that feedback on the changes made as a result of the work was fed back to participants – a valuable change process.

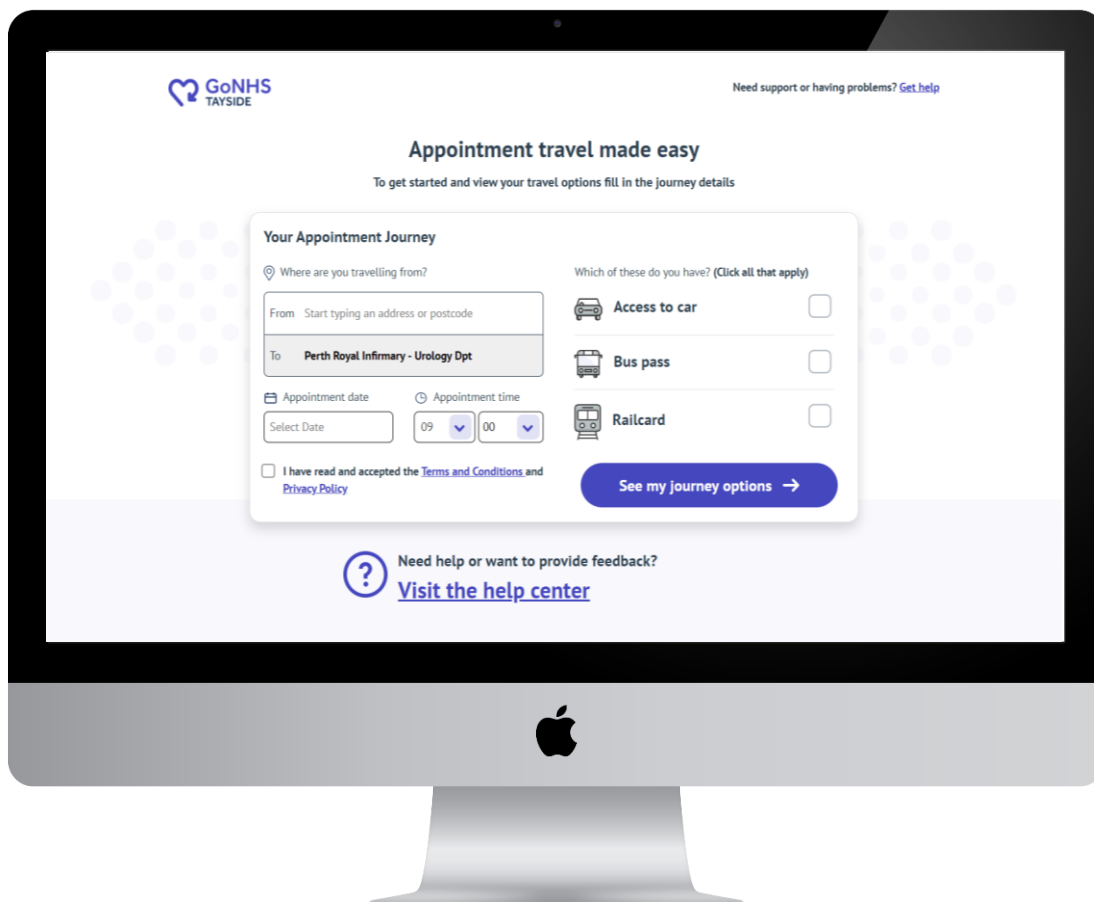
"It's great that the Go Upstream group's feedback, based on disabled users' experiences, has been acted upon: the NHS site is easier to use and is a giant leap forward for accessibility and easier access to health services in Tayside. Great job."

Hussein Patwa Making Connections participant and MACS Board Member.

Specific improvements

As a result of the audit work a number of specific improvements were made. These were as follows:

1. Changed the appointment date selection tool based on feedback for better screen reader compatibility.
2. Applied the recommended 'common sense' filtering to journey results (e.g. no more 4 hour walks/taxi journeys over £100 etc)
3. Various Go NHS Tayside user interface improvements including:
 - Consistent drop down menus
 - Reworked layouts to be simplified
 - Reworked the explanatory text to simplify and use symbols where appropriate
 - Removed the 'access to car' option on the homepage – car journeys are now always shown in the results
 - Removed the 'I accept terms and conditions' checkbox which was required to be ticked to progress
 - 'Need support or advice?' links at the bottom of the front page: the question mark symbol is now also a link and the link target area is larger
 - Made link hover state styles consistent



3.7 Lessons learnt from the operational model

The Tactran Enable model has yielded a large number of insights. It has been unique amongst MIF projects in deploying three separate services and employing a collaborative approach across all partners in the programme. The following section highlights the key learnings from deploying this model as well as any cross-service lessons that can be discerned. These lessons focus:

- What users want and need
- Technology
- Marketing
- Collaborative approach
- Monitoring and evaluation

3.7.1 Lessons learnt - What users want and need

Keep it simple

Engagement with users in the co-design process and through service feedback emphasised the key insights into user requirements highlighted through the user surveys, data dashboard and Making Connections audit i.e.

- **Users wanted information to help them plan their trip. Wanting tools to allow them to book the trip were not rated as highly.** Figures 3.12 – 3.13 suggest the features that would be of most benefit to users (NB this question was only asked as part of the National Park and NHS Tayside Surveys). Figures 3.14 – 3.15 highlight the features used by on-line functions by students and staff of Dundee and Angus College.

Fig 3.12 Which of the following functions would you find useful on a single digital platform? National Park Survey

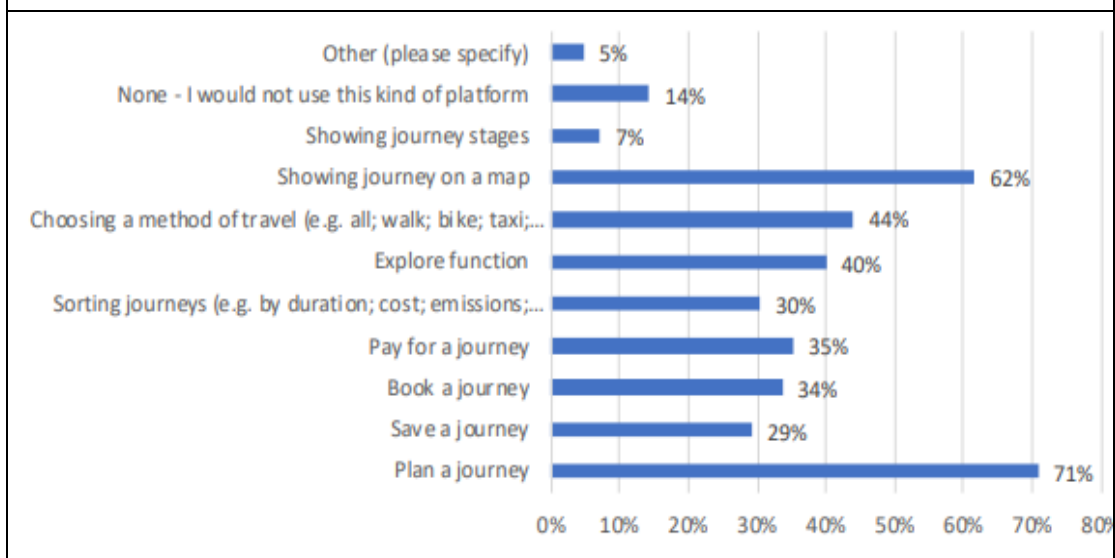


Fig 3.13 Which of the following functions would you find useful on a single digital platform? NHS Tayside Survey

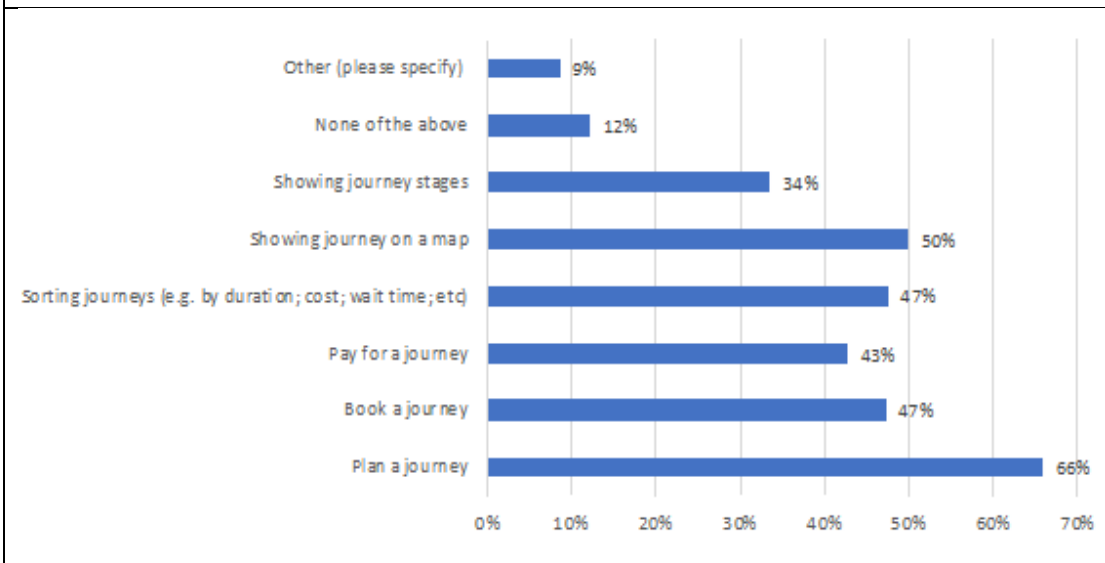


Fig 3.14 As part of your journey to / from D&A have you used a smartphone to do the following? Students

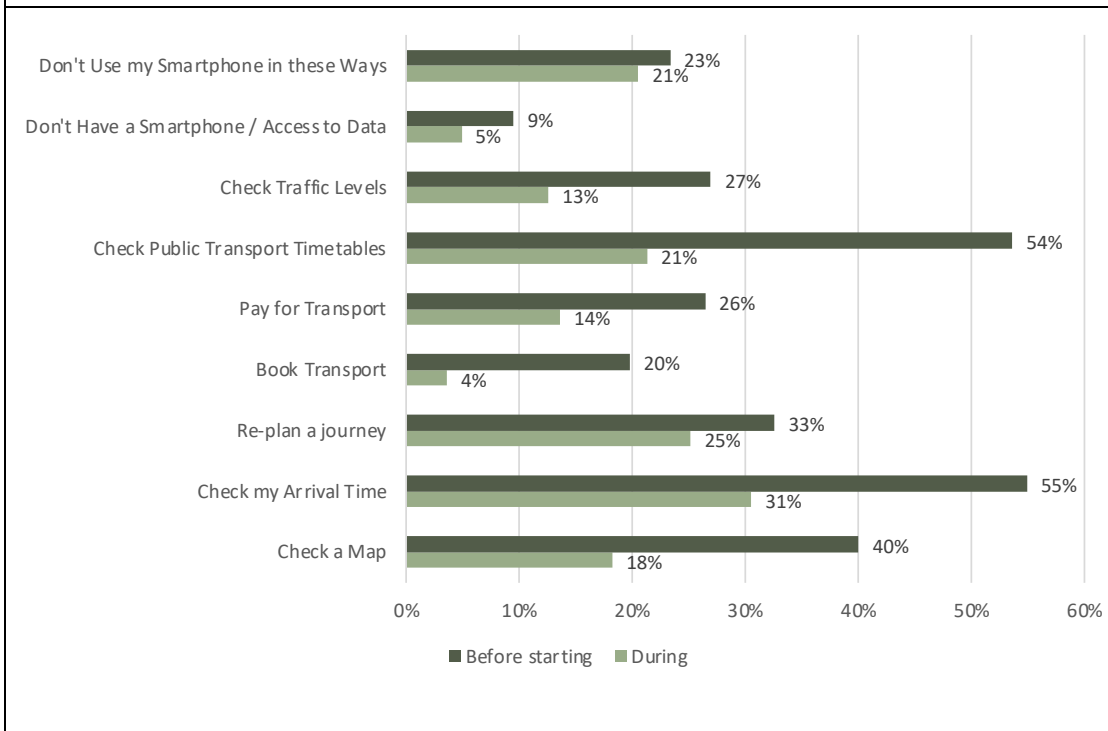
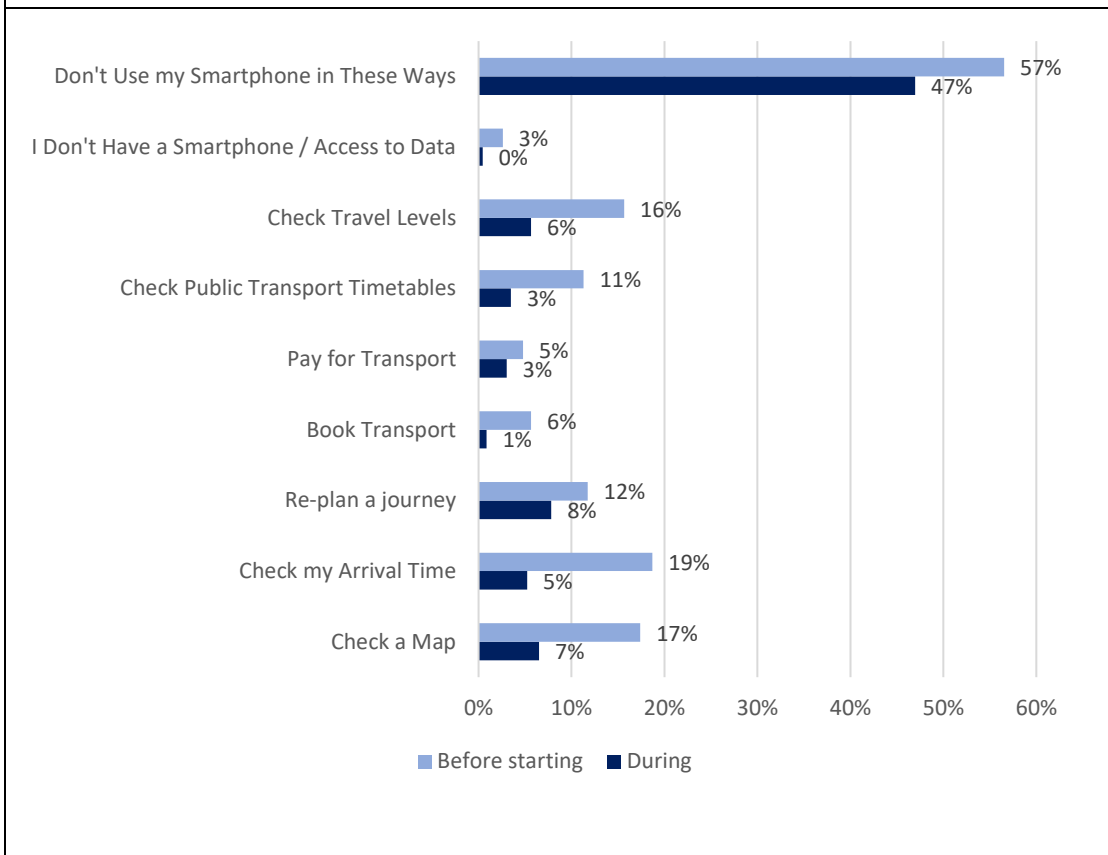


Fig 3.15 As part of your journey to / from D&A have you used your smartphone to do the following? Staff



Figures 3.12 and 3.13 suggest that the features people accessing National Park and NHS Tayside would find most useful are 'Planning a journey' and 'Showing a journey on a map'. Booking and paying for a journey fall into a group of secondary preferences. It is also perhaps useful to recognise the differences in this second set of preferences between the two groups, perhaps reflecting the different requirements between different user groups.

Figure 3.14 highlights that students use their smartphones to principally to check public transport timetables and check arrival times. Booking and paying for transport are only the 6th and 7th uses on the list. It is worth noting that where booking and paying in advance is useful/necessary this tends to be available via operator apps/websites. But it also should be noted that booking in advance is not necessary for the majority of bus trips. Figure 3.15 highlights that staff don't use their smartphones for such purposes as much as students. But it suggests that those do use their smartphone for checking or replanning their journey. Only a very small % use their phones to book or pay for travel.

Across the two different questions, and across the different sample cohorts, the greatest demand and use of journey planning apps appears to be for planning, understanding and checking a journey. The desire or requirement to book or pay for a journey is not rated as highly as the planning and checking functions.

This data is not suggesting that booking and paying for trips is not a desirable function, but it does suggest that when considering the functions for MaaS journey planning tools the importance given to incorporating these functions should be kept in proportion with other potential functions. Indeed, perhaps further work is required to evidence their need.

In addition, from the data dashboard, we can see that many users undertook the first level journey query and received a range of options. However, a significant minority do not then click into further details on the journey plan – i.e. into a specific option. Reason for this could include: because the journey plans (i) confirmed details of a choice they already had in their minds; (ii) showed up that there is no viable option available; (iii) were being used for ‘far planning’ – evaluating high level options for travel much further in the future.

- **users wanted to access relevant information as simply as possible.** The inclusion of features and information sources, which may be useful to others for planning, but not to themselves would increase the complexity of the journey planning tool
- **Users did not want gimmicks such as rewards:** during the co-design process, the user groups were asked to rate the features they wanted. Rewards were not rated by any of the groups.

How do we best include users in ongoing development? One message that came out of the Making Connections work, is: *Don't hold consultations, build relationships.* We were pleased that participants felt we were doing this in the project. The collaborative governance structure of Enable has fostered that approach amongst service leads and Enable partners. Each has their own user engagement and governance activities.

Digital Inclusivity

The success of digital journey planning tools will be constrained by:

- Those that have access to digital tools (smartphones / tablets / computers)
- Those that have the skills and confidence to use digital tools
- Those that have good internet connections

It is self-evident that many of those that need the most support, including understanding how to make the most of our transport networks, are more likely to experience one or more of these problems.

It is recommended that:

- Connections are made between public sector led MaaS projects and local and national digital inclusivity programmes to help identify complimentary activities
- Tools are kept as simple as possible for less confident users
- MaaS providers are mindful of the smartphone/tablet/computer requirements to operate their tools, squeezing too many features into a tool may make it unusable in all but the newest devices.

Mobile data usage of the Tactran ENABLE interfaces: Example involved planning a journey departing in 10 minutes, viewing the journey options presented, then viewing a journey (loading the map, pricing breakdown and step-by-step instructions).

NHS Tayside

Webapp in 'mobile' view on chrome – 2.2mb average

National Park Journey Planner

App – 1.41 mb on average

Webapp in 'mobile' view on chrome – 2.4mb average

My D&A Travel

App – 0.57mb on average

3.7.2 Lessons learnt – technology

Integrations with MaaS journey planning tools are wider than just technology led opportunities for booking and paying. The Tactran ENABLE tools sought to provide users with the fullest list of transport options that were available for the trip (*essential if we are to help people in rural areas access services*). Some of these transport options would not have any on-line planning, booking or paying option.

The approach was to minimise the disruption to third party (e.g. bus companies) business processes and the cost to the project while at the same time maximising the value to the user (and the third party).

Key lessons in relation to integrations include:

- **Use aggregators where possible:** Enable integrated booking and payment for rail and taxi via a relationship with third party aggregators. RailEasy had already amalgamated all of the rail booking and payment requirements of all UK Train Operating Companies (TOCs) and were accredited by the Rail Delivery Group as a third-party rail ticket retailer. Integrating with RailEasy allowed the project to relatively quickly and cheaply enable the functionality of UK rail booking, ticketing and payment without having to start from scratch and enter into the lengthy and extensive process of completing a separate RDG accreditation. In the case of Karhoo, this company already had agreements with 20 million taxis and private hire vehicles globally and had a ready to use connection, with a commission sharing model, for the MaaS platform to utilise. This negated the need to set up new commercial contracts with multiple taxi and private hire firms, had a 'plug and play' a PCI compliant payment gateway and covered customer support for any taxi booking issues which might arise.
- **Make non tech integrations work:** Community transport services are unlikely to have any digital interface, and yet, provide a valuable transport option for some of our most vulnerable citizens. Community transport operators were identified, with the support of Perth and Kinross Council, and their booking processes and eligibility criteria reflected in a database module within the Platform. This allowed journeys which originated in their catchment area, and for people who met their eligibility criteria, to be presented with community transport as a viable choice. Users were then signposted in a simple clear way to the community transport operator and their contact details.

This simple integration worked well for the following features:

- Community Transport
 - Local taxi operator database
 - Carbon calculator
 - Data dashboard Data – worked with partners to organically grow bespoke functionality as they learned about the data they wanted
- **Data sharing requirements needed for that information required to promote PUBLIC and shared transport services:** Although local authorities and transport operators have information and data available for their own systems (such as Variable Message Signs at bus stops, or within their own

proprietary apps), this does not necessarily mean that the data can easily be shared under the same technology structure or licence agreement. Some examples from the ENABLE project included:

- Local Authority Real Time Passenger Information systems not having suitable APIs to connect to the ENABLE platform or licence agreements to allow for the ENABLE platform to use the RTPI system as a third party app.
 - Discussions took place with Explore Dundee but their real time data was not available for external publication
- Bus operators not having a technical means, without costly additional development, of sharing their own fleet's real time location with other apps, even though their own apps have this data
- Not allowing for the sharing of licences for existing paid for systems as was the case with Stirling Council's Demand Responsive Transport system provided by Trapeze. Connection with that same system in the same area required additional software development and the purchase and maintenance of an additional licence which was commercially prohibitive.
 - A configurable Local DRT Database Model was developed for the platform which allowed users to see when a DRT was available for their trip and understand the booking procedure needed.

To avoid this in future, where possible, procurement of such systems (Real Time Passenger Information, fleet tracking etc) and services (such as bike hire schemes, car clubs) should include requirements for sharing of data with third party journey planning apps in those procured contracts. Or at least set out the terms under which such an integration would occur.

- **Poor data sources will affect the users perception of the journey planning tool:** Quality of information presented to the user is always dependent on the quality of the input data provided. It is important that the processes to derive and deliver that data are robust (e.g. process and adherence of updating Traveline by operators).
- **Confidence of third party promoters:** A third party website widget was developed for the National Park Journey Planner. This widget could be placed in third party websites (e.g. hotel or restaurant) to enable visitors to plan their journey via the National Park journey planner. Marketing material was prepared with instructions for loading. However, this functionality was not launched because of concerns that the functionality would not be supported if the pilot closed. This would be an issue of many organisations embedded the widget.
- **Leverage the unique trusted position of local authorities:** The Project Team found that often quoted barriers in other MaaS projects did not emerge within the Tactran ENABLE Programme. The local authorities and the Regional Transport Partnership were trusted parties able to lead support for the service integrations. For example the Community Transport Database Module and

Local Taxi Database were made possible via the local authorities and RTP being the face of the platform and being the initial point of contact.

- **Prioritising enhancements:** Many opportunities and ideas emerged for enhancing the journey planning tools during the project. Prioritising enhancements should be guided by how the opportunity addresses project objectives, which need to reflect what the user needs (and making sure this works for the user); what the service needs....and balancing options against budget to ensure that any enhancement provides best value.
 - For example, the original Enable project plan envisaged a stored account payment tool being incorporated into the platform. This had a very low rating within co-design from potential users. Investigation into detailed costs showed that this functionality would be expensive. Thus the budget was reallocated to other higher rated enhancements. This was also the case for integrated bus ticketing. Potential users noted the use of concessionary cards and contactless payment as by far the most used ticketing option. The main user 'pain' was in knowing if the services accepted contactless and the exact price (with or without concession). Costs quoted by third party bus operator to integrate with m-tickets was seen to outweigh the value of this functionality.
 - As dissemination of the tool by the respective services was essential to the project, giving ownership to the services for all stages of the project was vital. This included the decision on enhancements relating to their particular journey planning tools. Decisions to launch functionalities were taken with service leads: it was their decision, that determined the go- no-go decision. Those functionalities which were seen as valuable but not currently a priority, were noted for potential future delivery.

Central to many of the above themes is understanding what users need, and prioritising these above that which transport planners or tech providers assume (*who's thinking is often led by the possible, rather than an objective led process*). The closer a project can get to its users the better you will be informed by what they need and what enhancements will be most effective.

3.7.3 Lessons learnt - marketing

Each service worked within the project to agree launch times and marketing activities. The respective journey planning tools were launched in late August/early September 21. At this time:

- The peak season for visitors to the National Park was coming to an end
- Dundee and Angus College was not at full capacity
- the NHS Tayside pilot was focussed only on the Urology Unit

The following section highlights lessons learnt from the marketing exercises for each service as well as trends in usage throughout the pilot period (see Appendix C for detailed marketing activities and media examples).

MyD&A

Fig 3.14 New and returning user usage for myD&A travel

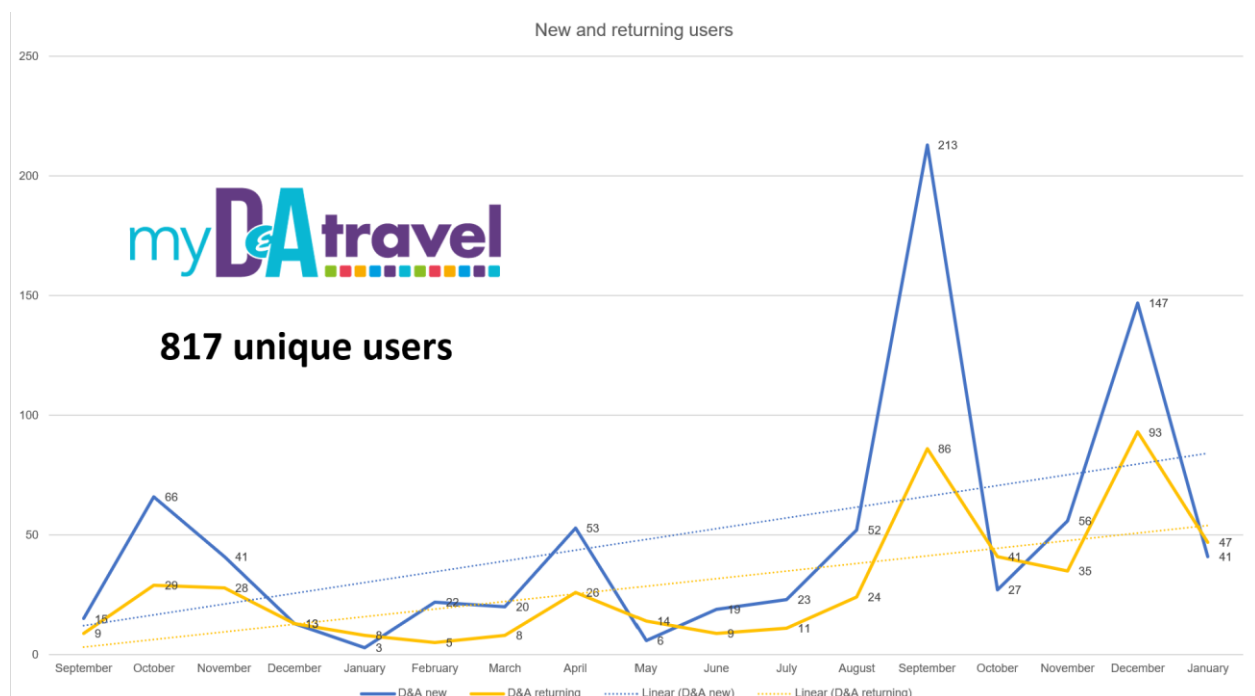


Fig 3.10 above demonstrates:

- The peaks at the start of term in August/September which would be expected due to the communications with new and returning students. Only when students returned to full-time college attendance in 2022 (hybrid learning was still in place in 2021/2022) did usage increase significantly.
- A usage/registration notification to existing users and student portal message to non-users boosted usage pre-Christmas 2022. It is important to note that this was linked to a free prize draw (£100 Amazon vouchers)
- The peak in April 2022 was not as a result of any direct myD&A travel promotion, but as a consequence of the GoNHS Tayside press release and coverage at that time which promoted take up of both the tools in the Tayside area.

Other lessons learnt:

- The student portal is a key touchpoint for messaging but prompts about the tool itself via the portal were not reflected by increased uptake, except when related to other activities (e.g. fresher's welcome)

GoNHS

Fig 3.15 New and returning user usage for GoNHS Tayside

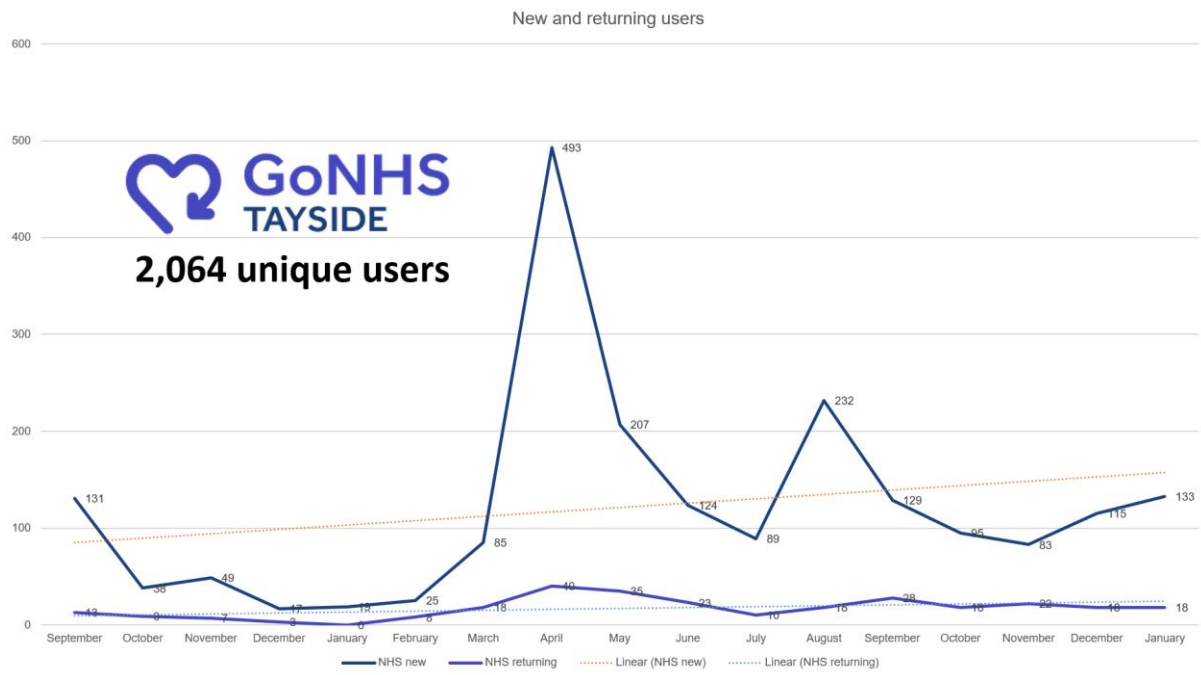


Figure 3.11 above demonstrates:

- There was significant uptake of the tool when it was expanded across all major NHS Tayside sites in April 2022. As well as using internal channels, this expansion was also promoted via a press release from NHS Tayside, which also resulted in radio coverage which increased awareness amongst a larger audience. At that time all appointment letters also started to carry a link to GoNHS (as opposed to just appointment letters for the Urology unit).
- The peak in August 2022 was created by another travel promotion being conducted. The GetGoDundee project promoted sustainable travel at Ninewells during August 2022. During this period (to avoid confusion) direct promotion of GoNHSTayside was paused. Nonetheless, the effect of a related promotion causing an update in Tactran ENABLE tools can clearly be seen (see *also the impact of NHS Tayside press release on uptake of my D&A travel*)

Other lessons learnt:

- Social media was not used due to the volume and range of messaging by a NHS Board (e.g. public health; jobs vacancies) which compete for 'air time'
- Having the support of senior management was essential in making GoNHS successful, for example, ensuring that appointment letters were changed.

National Park Journey Planner

Fig 3.16 New and returning user usage for the National Park Journey Planner

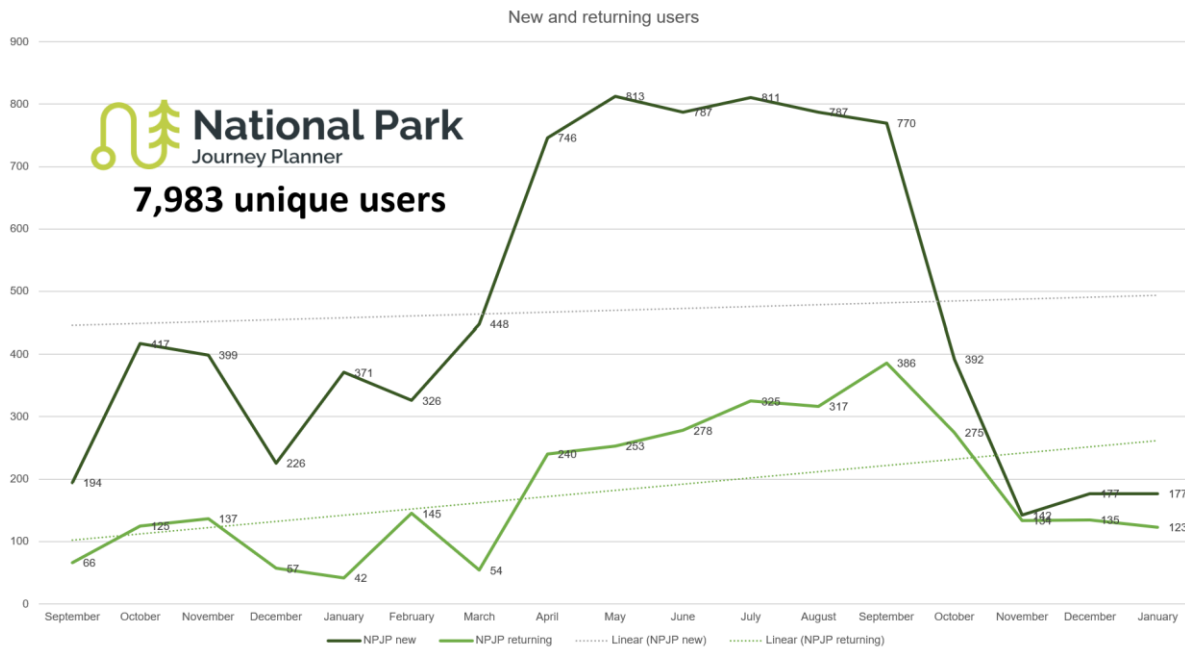


Figure 3.12 above demonstrates:

- Usage is most strongly associated with the National Park’s peak visitor season between spring and autumn each year
- Outside of the expected peaks associated with the launch and the main visitor season, there is also a peak in activity for returning users in Feb 2022. At this time there was a promotion of the new explore/days out feature which had been introduced to the app. This promotion will only have gone to existing users.
- Why there was a dip in new users at this, or that returning users were did not pick up in January, as happened with new users, is unclear

Other lessons learnt:

- The National Park has a strong digital marketing team with specific sustainability objectives and corporate buy-in. This ensured that a range of opportunities (e.g.large events within the National Park) were exploited to promote use of the journey planner
- The existing touchpoint of ‘Getting to the Park’ on the National Park’s website was key to obtaining users. For a short period, the National Park Journey planner was not linked into this part of the website and during this short period new users dipped.
- Linking social media messaging to use the journey planner to events had short term impacts in usage. This message appeared to have a stronger impact if the message noted that there would be congestion (i.e. a “push” to use the journey planner) at the time
- A graphics pack was produced to help businesses promote the app
- The use of a paid social media influencer had a short-term impact on new users.

Summary

- **Services existing touchpoints are powerful means of contact with the audience:** to help promote the journey planning tools (eg student portal, “Getting to the Park”). Conversely it is difficult to make the most of existing touchpoints with regular engagement. Nonetheless...
- **Services will have other priorities for promotion:** The apps are only part of what the services’ offer. While Tactran Enable may want a large social media push on the MaaS service for that organisation at a certain time, the organisation may have other priorities at certain times.
- **Corporate commitment is important to effective deployment.** This is particularly powerful if transportation is a recognised¹⁴ tool to achieving corporate objectives, (e.g. National Park priorities)
- **Understand and exploit the natural rhythm of the service:** Each service has its own cycle and rhythms: the colleges revolve around term times, in particular new intakes; the National Park has a peak summer season (spring to autumn); NHS is largely constant though has spikes in critical needs in winter months (which means resources and focus are on emergency care). The Enable project used a ‘gazetteer’ year planner to map these cycles and also key events within the services which could be exploited.
- **Establish opportunities for cross-fertilization:** a monthly meeting between all partners to review the previous month’s usage data and establish marketing plans for the upcoming month, were an essential part of the Tactran Enable project. The meetings allowed cross-fertilisation of ideas and collaborative problem solving about mobility, approach from different policy angles, was productive. Again, these discussions benefited both the services and the pilot, whether that be approaches to engaging with users or identifying what additional data would be valuable in the data dashboard

In addition to the summaries from the service pilots, a general issue relating to communications is the low proportion of people who registered an account. **There is more scope to influence behaviour of users if they register their personal details.** This means we can personalise the information presented and target notifications. Understanding how to encourage more people to register could greatly assist marketing and communication options (i.e. opportunity to provide different messaging to encourage registration to see what increases registration rates).

¹⁴ Clearly transport is important to the ability of the users of any services to access that service. It is also understandable that services focus their attention on the core service they deliver.

3.7.4 Lessons learnt – collaborative approach

The collaborative working between services (and their communications and management teams), Tactran and technical partners was a feature of the Enable project. The work helped emphasise that having a journey planning tool is only half the task, the other half is having an effective model to get those tools to the users. The main lessons learnt are presented below.

- **Ownership by the services is essential:** A journey planning tool that the services were involved in developing and branded with their organisation gave ownership to the services. This is assumed to be a factor in the services being actively engaged with promoting the journey planning tools. Involving the services in key decisions such as enhancements to the journey planning tools is also assumed to have assisted the sense of ownership by the services.
- **The model builds relationships essential to meeting the needs of the public:** The monthly data sharing sessions with the services continued to build relationships between the partners. These sessions will have helped partners discuss and understand what the data was showing, for the benefit of both the pilot and also the service (in terms of understanding its users).
- **Cross fertilisation is valuable:** Although each service had their own priorities and interests, the presence of other services and cross-fertilisation of ideas and collaborative problem solving about mobility, approach from different policy angles, was productive.
- **Platform and knowledge sharing:** The addition of SEStran to the Enable Platform took place in mid 2022. This allowed for shared costs. However, the collaborative discussions which took place to include SEStran led to mutual support regarding marketing and project management. This has continued throughout the pilot period.

3.7.5 Lesson learnt - monitoring

The types of user groups targeted, the delays caused by the pandemic, the budget available and the evolution of the programme all influenced the monitoring of users and non-users.

A more robust monitoring programme could have been established if the primary focus of the pilot projects was on evaluation, rather than on delivering and testing a MaaS journey planner programme (e.g. treating the project as a research project rather than monitoring a tech project).

This could, for instance, have involved designing the pilot projects to accommodate the use of either a randomised controlled trial or quasi-experimental design, either of which would most likely have generated more rigorous and generalisable insights into the effects the MaaS platform had on people's everyday travel choices. However, it should be noted that - despite the obvious strengths of approaches like these - key trade-offs include the fact that they tend to be more expensive and complicated to deliver.

Alongside this, although quantitative studies can allow associations between interventions and travel behaviours to be found, qualitative data can provide additional value. Qualitative data (collected through survey comments, interviews, or focus groups, for example) can provide a greater depth of understanding about participants' experiences, for instance, regarding why and how they are using a MaaS app, or what is acting as barriers to them using it. While qualitative research was included in the original monitoring and evaluation plan, subsequent budgetary constraints, largely linked to delays caused by the pandemic, meant that this element was dropped.

Ultimately, the ENABLE project team focused on delivering a MaaS product and collecting as much information as possible through the data dashboard and user/non-user surveys, as well as interviews with key stakeholders.

The approach to selecting survey participants was based on a "convenience sample" (a type of non-probability sampling), which involved selecting respondents based only on their availability and willingness to participate. While this approach was pragmatic and useful in relation to the ENABLE project, it also dramatically increased the risk of sampling errors and the likelihood that the sample group would not be representative of a wider population (i.e. the generalisability of the results).

As a result, while we were able to use the data from the surveys and dashboards to identify evidence that might help support a particular argument about the outputs, outcomes and impact of the platform, we were unable to be definitive about these.

The use of a 'convenience' sample also meant we were not able to control for variables. Amongst other things, this means we had no way of distinguishing cause and effect. With a multiplicity of journey origins and destinations (particularly Loch Lomond and NHS Tayside) as well as unknowns about the availability and quality of existing transport provision for these journeys we were not able to tell if a platform user who planned to travel by a particular mode was doing so as a response to the information provided by the platform or because it was the only option available to them (or that they had a predilection towards using that mode).

Coupled with the inherent errors and biases associated with using non-probability samples, response-rates were also small across the surveys that were conducted. In addition to this, we cross-tabulated certain question responses (i.e. to help answer questions like: “how many app users vs non-app users said ‘y’?”). The process of cross-tabulation further diluted the response-rates. Low response rates can cause non-response bias, with the risk that those who did not complete the survey may have significantly different characteristics to those who did.

Furthermore within the constraints of the approach adopted, the nature of the pilots, covid and the evolution of the project affected the ability to compare before and after surveys:

- Because of the nature of National Park users, it was determined it would be difficult to identify and track a cohort of respondents for before and after surveys without the before survey being of a considerable size. It was determined to just undertake an after survey of Park users
- A before survey was conducted at Dundee and Angus College, however the delays in introducing MyD&Atravel as a consequence of the pandemic meant that the after survey was unable to targeted at the same cohort.
- A before survey was undertaken with the Urology patients of Perth Royal Infirmary, however the expansion of the NHS pilot meant that more useful information would be available from the after survey of the whole of NHS Tayside, than would have been from the comparison of before and after data from the patients of the Urology Unit.

Nonetheless, it should be noted that the pandemic itself would have made surveys on attitudes and issues in relation to travel ‘fluid’ across the survey period.

Whilst the responses from each of the three pilots do not allow any statistical valid conclusions to be drawn, they do suggest reasonable trends. Combining the data across the three pilots to improve statistical validity is however not possible due to the different timescales that the surveys were conducted over, and the different cohorts involved in the three pilots. Insights into the different user groups would also be lost, which is vital to this project.

Summary

- **There were significant trade-offs involved in designing and delivering the monitoring and evaluation plan for the ENABLE project:** while more rigorous research methods were identified, a pragmatic approach was taken that responded to challenges like the pandemic, the available budget and the evolving nature and extent of the pilot.
- **Despite drawbacks, the research methods used allowed tentative conclusions to be identified:** whilst the survey results were not robust enough to be generalised, we have been able to source valuable insights and draw tentative conclusions about the existence and scale of the user, non-user and provider benefits of the pilots.
- **Future MaaS projects should consider making monitoring and evaluation a more central part of the overall project design:** doing so can help secure more robust, generalisable insights.

3.7 Key findings from process review

A core goal of the Tactran ENABLE project evaluation was to help demonstrate the benefits MaaS can deliver for a variety of stakeholders and the users they represent. This section presents views of the services involved and the project team of processes used to deliver this project. In particular, it focuses views about the:

- Strengths and weaknesses of the pilot projects, including reflections on the roles played by different stakeholders in facilitating the successful delivery of the pilots, and the degree to which the pilots fulfilled the goals and objectives of different stakeholders.
- Associated challenges and opportunities, including (but not limited to) the impact of external factors, such as the pandemic, on the delivery of the project.

It should be noted that the principal officers involved in the set-up, launch and delivery of the project in NHS Tayside had left their posts by the time of the stakeholder interviews. Hence NHS Tayside comments are limited. Full results from the process review can be found in Appendix B.

Strengths

Tactran

Tactran suggests its good networks and strong working relationships across the region underpinned the success of the ENABLE pilots.

For example, Tactran used its well-known and trusted brand to help speed up the engagement process and offered a formal way for suppliers and others to engage and discuss how best to deliver the pilots. In addition, they sought ideas, information, and support from a much wider group of stakeholders.

While Tactran noted that more resources would have allowed more to be delivered, interviewees still felt they managed to successfully meet their objectives.

“we did manage to deliver what we intended to deliver with the resources that were available....we have definitely found a model that works. You can have a tool giving you every last integration that is possible, but it’s no good if it doesn’t actually get to people.”

While they acknowledged MaaS is still a ‘young’ subject, Tactran indicated the MaaS model it has delivered, which involves providing a bespoke tool for each service context, appears to have worked well. They put this down in part to having a strong, effective and committed delivery team that has been willing to learn and be flexible.

Fuse

The model used by Fuse for delivering MaaS services is different to most other providers:

“Rather than having a MaaS provider coming in and doing a ‘top-down’ implementation, Fuse has more of a collaborative approach.”

As a supplier, Fuse had a ‘shovel-ready’ MaaS platform and an innovative delivery model to offer Tactran:

“This project was a good test of the design of the model, which is based around the idea of one platform, tailored to the needs of multiple services, as it was three pilots in one. Also, the MaaS Investment Fund objectives were quite varied, and this enabled the pilots to test different aspects of these objectives in different contexts.”

“The ENABLE platform piggy-backs on existing service-lead brands, which speeds up adoption and makes it easier to promote the platform via existing channels used by service lead organisations.”

Fuse also recognised a number of strengths offered by Tactran as a client, including Tactran’s strong, existing network of partners and stakeholders. Following on from this, Fuse acknowledged the value of ongoing engagement with partner organisations, especially via the monthly Service-Lead meetings, which seems to have worked well.

Fuse acknowledged the importance of the expert guidance and support they provided to Tactran about MaaS. There was also a sense that the value adding services offered by Fuse, such as co-tailoring and data integrations, were important, and Fuse acknowledged that the *“culture of the people around the table”* was a very positive aspect of the project.

Dundee & Angus College

Dundee and Angus College started out with a clear idea of how their participation in the ENABLE project could benefit the College.

“We were interested in getting involved because of the travel issues our students face, like having to travel to different campuses for different things and us only having limited parking. It was an opportunity to help make students more aware of the travel choices they have and to try and get them to use public transport.”

The College indicated there were sufficient resources available to deliver the project, but delivery was significantly hindered by the pandemic. Despite the challenges created by COVID, the College indicated it felt the pilot project had been a success.

Loch Lomond and the Trossachs National Park Authority

The National Park Authority (NPA) also started out with a clear sense of what it wanted to get from its pilot project:

“Our vision was for the platform to facilitate the creation of multi-modal journey plans to make it easier for people to travel without the car.... We were [also] interested to learn more about the scale of interest in public transport, as well as finding out more about journey origins, popular journey destinations, awareness of existing public transport options; and so on.”

The NPA noted the importance of the bespoke, additional features that were added to the *National Park Journey Planner*, such as the carbon calculator and itineraries. They also acknowledged that the origin and destination maps generated from dashboard data was a valued output of the project as it provided insights into how well current public transport routes met potential demand.

They also acknowledged some of the valuable contributions the NPA was able to make to the project:

“Internally, we are good at marketing and the comms team is really very strong, which was an asset. The National Park brand is also well known and trusted, which also helped.”

More specifically, the communications and marketing team saw the pilot project as an opportunity to engage in a different way with key target audiences.

The NPA recognised the value of the strong partnership it had with Tactran and Fuse and acknowledged that the project had delivered improved working relationships with internal and external stakeholders.

The NPA indicated it was pleased with several of the project outputs, such as the origin-destination mapping, as well as the overall number of users.

“A very important theme for us is having something tangible that we can not only talk about, but also encourage the public to interact with. We’ve gone from simply promoting our car park update service to being able to promote the journey planner alongside this. So if you’re coming by car, look at this, but you might want to look at this journey planning platform as well. It’s getting people thinking about journeys and what they are doing in a car and what they could do differently.”

NHS Tayside

NHS Tayside also commenced the pilot project with a clear idea of what it hoped to achieve.

“...it was to help provide information to patients on what transport options were available to them to help make their journey to hospital easier and more accessible.”

While there were challenges, NHS Tayside was able to provide strong support to the pilot project by offering effective communications and engagement to help promote the *Go NHS Tayside* platform.

NHS Tayside acknowledged the importance of support provided by Tactran and its partners and noted the impact of associated communications.

Weaknesses

Tactran

Tactran suggested a number of weaknesses in relation to the ENABLE project.

The onset of the pandemic caused considerable uncertainty about how best to deliver the project. This led to significant challenges and made it very difficult to forward plan with any confidence:

“The pandemic was an evolving process for everybody.... The rules were changing on a weekly basis at the start. We kept rolling forward, expecting normal service to be resumed sooner rather than later, when in hindsight, we should have paused delivery. Not doing this did eat up a lot of the finances.”

While Tactran acknowledged the strength of its working relationships with key partners and stakeholders, these were not without challenges. For instance, it was initially difficult to get effective ‘buy-in’ from some partners. And the service pressures of, for example the College and the Health Board, would naturally take priority over directing time to deliver a journey planning pilot.

The impact of the pandemic on the numbers and confidence of people travelling is expected to have affected the take up of tools that would help people travel. This was latterly compounded by fuel price increases that meant that many marginal services were withdrawn, further denting confidence in bus travel.

Dundee and Angus college were fully committed to the project at the outset and had sufficient resource to support its delivery (with regards to project management and communications). However, the Covid pandemic reduced the “need” for the use of the app and ultimately affected take up, despite good efforts from communications.

Tactran mentioned that there was originally an intention to embed staff into service lead organisations to lead on the MaaS pilots. However, finances did not allow such. Indeed, whilst service partners did struggle from time to time with supporting the project (due to service priorities), it is not clear whether a short term, part-time resource would have addressed this issue.

Tactran suggested a weakness in the timing of communication and promotion trails:

“It was a pilot, we’ll try this, and we’ll try that.... And I think that could have started earlier.”

The leads at Dundee and Angus College felt that the reduced public transport provision during the pandemic affected how many students used the myD&A app. There was then a relatively short window to promote it again when general life and services were resuming to a more normal reality. Additional features such as real time or cancellation of services would have been really beneficial at this time.

Tactran felt Transport Scotland could have benefited from a longer-term plan with regard to how MaaS could be taken forward beyond the pilots, in particular what would happen to the established pilots whilst Transport Scotland undertook a review of The MIF programme.

Tactran felt that the MaaS Investment Fund programme as a whole could have benefited more from sharing and learning across the various pilot projects. Whilst opportunities were provided by Transport Scotland and MaaS Scotland for different pilot project stakeholders to engage with each other around topics like technology

improvements and how to reach target audiences, little was shared by the respective pilot projects themselves.

Tactran felt that the risks to the confidence in the likely results as a result of the monitoring process should have been made clear early on. There was, and remains, no guide to the response rate which would have increased confidence in the results.

Fuse

Fuse identified several weaknesses associated with the early stages of the project:

“The original bid was overly ambitious. However, we broadly stuck to that specification and approach, although certain elements were dropped along the way for pragmatic reasons.”

Some of these early-stage weaknesses led to compromises in relation to project delivery. For instance, the need to launch the services quickly influenced the extent to which service offers were co-tailored rather than co-designed.

Fuse also acknowledged that it was difficult to get good engagement from the service lead organisations at the start of the project.

As the Enable project was a pilot, Fuse recognised the need to experiment and try out new ideas. However, these did not always go to plan and the process could perhaps have been streamlined:

“There was a fair amount of abortive work, such as time spent working on integrations with a rewards platform and setting up the dashboard. In hindsight, less money could have been spent on these elements. Sometimes there is a gap between what is assumed may be possible about integrations versus what is technically possible. A better and more pragmatic MIF change request process should account for this eventually, so options like spending more money or de-scoping become more straightforward.”

The proposed governance arrangements within the Tactran Enable project sought to involve interested parties in an Advisory Board to help shape the project and a Project Board to make decisions as and when required. With hindsight, Fuse felt that internal project governance arrangements were not as successful as they perhaps could have been.

They also argued that MIF programme governance arrangements could have been improved:

“There should have been a Programme Board co-ordinated by Transport Scotland. There was a lack of consistency, leadership and transparency at this level. There was no standard change request process to follow non consistent processes to follow for other aspects of the programme. This has led to a situation whereby it is hard to know what ‘good’ is.”

For example, Fuse felt there was pressure from Transport Scotland to continue trying to integrate a rewards scheme, despite insights from users indicating they would not value this feature.

Dundee & Angus College

Understandably, Dundee and Angus College felt that the pandemic and the nature and extent of local bus services had a negative impact in the success of the *My D&A Travel* pilot:

“At this moment in time, I probably say no, the pilot didn’t address our goals, but it’s got nothing to do with the project itself. I think it’s more to do with the very bad public transport that we have in the area and the impact of the pandemic. Also, this was just a short-term pilot, so its impacts were always only going to be relatively small.”

Alongside this, the College reported that selected system improvements could have led to better results:

“It is obviously good app, but it could do with a few more features, like support for real time information about passenger numbers on specific bus services, or ‘live’ information about cancellations.”

They also noted how users did not appear to understand the benefits of registering an account:

“I guess we’ve not really shown the difference between non-registered and registered users. What do you get if you have an account that makes it worthwhile; what’s in it for the user?”

The College acknowledged its frustration with the impact of the pandemic on the pilot:

“I think it’s just been disappointing in terms of the timing and what was going on in the world, because I think it was such a great initiative and I think all partners have played a really good role in coming together on this. So I think it was really unfortunate that we didn’t get what we all hoped out of it.”

Loch Lomond and the Trossachs National Park Authority

The NPA indicated it did not always have realistic expectations about the ENABLE platform:

“At the start, it would have been helpful to understand more about future growth opportunities for and to set realistic expectations about the platform, and generally, to have known what kind of framework we were working within, given technical constraints.”

The NPA expressed frustration around not being able to act on certain user insights for technical reasons:

“Some of the ‘computer says no’ aspects of the project were really frustrating, especially after having sourced some really good insights and ideas from community representatives and staff.”

However, the NPA noted that some of the frustrations it highlighted were caused by third-parties:

“We learned a lot about the constraints of Google and other big platform partners.”

The NPA also acknowledged that more insights about users would have helped to create a more tailored and effective platform:

“In short, more up-front assessment of individual travel needs or preferences would help. ... We could deliver better outcomes if we knew more about users from the start. Giving users the option to add detailed journey preferences would allow the platform to give much more personalised information. For example, users could note in the preferences that they are unable to walk more than four minutes, or that they like longer walks.”

There was a sense of disappointment that payment options were not available for all journey options:

“Not being able to get consistent pricing and payment options for all journey legs was a barrier. Without this, it [the platform] essentially becomes just a journey planner. ... We would like to have some kind of payment option available, and a way to help us understand how many journeys were actually undertaken.”

It was apparent that the NPA would have liked the ENABLE platform to offer a much higher level of personalisation and multi-modal ticketing options. The NPA also felt the functionality of the platform could perhaps have been more tailored to their core objectives. For instance, as the Park is a very popular destination for walking trips, the NPA suggested the *National Park Journey Planner* platform would benefit from different parameters around walking being set, so longer walking journeys are included in search results.

Opportunities

Tactran

Tactran suggested the ENABLE platform can be readily adapted for use by other services across the Tactran region and further afield. Tactran also noted that – because they were tailored to the particular needs of different service lead organisations - the pilot projects successfully helped tackle a range of key policy goals.

They also highlighted the potential for future projects to put stronger systems of governance in place:

“We established an advisory board, but as the project got strung out (COVID), it became difficult to make meetings meaningful”

On a related note, Tactran also saw future potential to set up more formal working arrangements with partner organisations:

“(if) a formal agreement was put in place with partner organisations. This would have been useful at the start as it may have increased their commitment levels.”

In addition to the above, Tactran suggested future MaaS pilot projects allow for trial and error, alongside more conventional project management methods. This would support a process of ongoing learning and improvement.

Working with Loch Lomond and Trossachs National Park allowed us to trial a NTS2 vision to promote modal shift from cars. Conich Hill is a popular tourist location and with that brings a significant number of cars, causing congestion and on occasion,

blocking A roads to the point of dangerous (emergency vehicles would not be able to approach if required). The result is the closure of car parks and actively discouraging car use. The app allowed them to support this with the “carrot” of offering the journey planner as an informative alternative. And it worked.

Fuse

Fuse pointed out it already had a viable MaaS platform and suggested this is a good basis from which to continue building on the success of the ENABLE pilots.

Fuse also made the following suggestions, which offer the opportunity for others to learn from their experience of delivering the ENABLE pilots:

- *“Connect what’s there first, so if someone else has already aggregated bus services, use that, rather than reinventing the wheel.”*
- *“Getting the balance right between enough and too much information [for users] is crucial.”*
- *“Think about the whole customer journey in transport. Don’t just fixate on plan book and pay.”*
- *“Make it clear what you expect from other stakeholders and find a way to get their buy-in.”*
- *“Traditional procurement pathways are not necessarily the best approach for this kind of project.”*
- *“Programme management is really important. Be willing to share some of your core results. This is what you are going to be judged on.”*
- *“Existing funding streams should include an option to use MaaS as a delivery system.”*

Dundee & Angus College

The College recognised an opportunity to do things better in the future. For example:

“We would time.... launch(es) for the start of the academic year, when existing staff and students, as well as the new starts and new faces, haven’t yet established their travel routines and habits. We’d have a big physical presence at freshers’ events and try to get people understanding the benefits of the app, so it becomes kind of normal, as the year goes on, to use it.”

They also indicated that – in different circumstances – they would have taken the opportunity to gather user insights:

“if there had beenmore people using the app, then it would have been good to incorporate some face-to-face user feedback. It would be helpful to chat to users to get a better understanding of how they’re using the app. The results would hopefully help with ongoing development of the app.”

The College expressed an active interest in participating in a continuation of the ENABLE project if the opportunity arose and went on to suggest a wider roll-out might be desirable:

“Why not roll out to all colleges and make it something for all college students in Scotland?”

Loch Lomond and The Trossachs National Park Authority

The NPA saw an opportunity for the pilot projects to be continued, to help demonstrate the potential benefits that MaaS can generate for other similar organisations.

“Hopefully Transport Scotland and other parties nationally with bigger budgets will come to us on the back of this to explore our feedback further and discuss how this can work, because what will work here, will work in the Cairngorms National Park; it’ll work in high volume visitor destinations; it’ll work in the outskirt(s) of Edinburgh; in Fife; and so on.”

When asked what advice it would give about MaaS to other national parks, the NPA had this to say:

“My advice to other national parks would genuinely be ‘hold off implementing MaaS and let’s discuss it more widely’, as I think there are now enough pilots, and we need to collate all of the findings and decide what we’re all going to do. I would not want public money to be used to repeat the same thing elsewhere. If funders wanted to just tweak around the edges to try small improvements, we could do that here where we already have that base to build off.”

NHS Tayside

When asked what advice they would give to other NHS Boards considering involvement in a MaaS project, NHS Tayside suggested that good communications are key to future success.

“I would advise that the team works closely with any organisation’s communications team from the start of the project to plan and manage expectations of what can be achieved.”

Threats & Challenges

Tactran

Tactran noted that Mobility as a Service is a relatively new field, meaning information and expertise about the topic is constrained. This made the initial scoping and procurement processes more challenging than usual.

Day to day project management of the project was initially outsourced, but funding for this resource ran out due to the impact of the pandemic, meaning project management support needed to be provided by internal resources.

The scale at which the project operated at, it was felt that social inclusion objectives were the principal project objectives being supported. Promotion of sustainable transport for climate change or air quality reasons would depend on the ability of the tool to be able to be used at a mass scale.

An understandably dominant theme was the impact of the pandemic on the project.

“The obvious thing to say is we were trying to develop a journey planner to help people travel at a time when, fundamentally, everybody was told not to travel. ... Different organisations relaxed travel restrictions at different times in different ways, which made it even more difficult to deliver the project. ...”

The pilots are short and in order to try different ways of promotion, tech etc, a longer window would have been better.

NHS Tayside had some challenges in that data protection around surveying required a detailed Data Protection Impact Assessment. This process slowed down some of the research element of the evaluation by six months.

Crucially, after reflecting on the pilot projects it delivered, Tactran was of the view that provision of ongoing MaaS services is likely to require ongoing subsidy.

“Whilst there will be some degree of income streams from ticketing and advertising, it's not going to be anywhere near close enough to covering the costs of a project. But like most forms of promoting sustainable travel, we've got to also consider what the cost of not doing it would be.”

Tactran pointed out that there is a need to consider the costs of not continuing to fund MaaS in the Tactran region, and argued there is a strong case for continuing investment into a service that helps people make better, more sustainable use of existing transport options.

When asked to think about the future of MaaS in the region, Tactran suggested that, without funding to fill the gap between the pilots ending and Transport Scotland advising on a preferred way forward for MaaS in Scotland:

- There is a risk of reputational damage, as well as damage to the good working relationships that have been established with the three service lead organisations. Having a break in project delivery would erode trust and confidence with these organisations and may cause a reluctance to take on large projects as the risk of them not going anywhere.
- There are likely to be additional procurement costs and delays.

It must be noted that while the strength of the project is the ability of service partners to own and disseminate the journey planning tools directly to their users. This strength

could be a weakness/ if service partner resources are directed to the priorities of that service (be it provision of health care or education).

Fuse

Fuse also noted the negative impacts of COVID on the pilots.

“COVID hit before the services launched and no-one knew when it would end. Because of the nature of the organisations we were working with, there were other constraints to consider too, such as peak season for the National Park and term time for Dundee and Angus College.”

The pandemic clearly had a substantial impact on how the project could be delivered, with Fuse being nimble enough to take many of their development and delivery processes online. On reflection, Fuse felt the challenge of COVID also held an opportunity, in that it created more time to allow Fuse to carry out additional co-tailoring.

The Fuse service delivery model involves (amongst other things) providing bespoke MaaS services that target particular user groups. This approach is designed to create multiple user benefits. However, Fuse acknowledged some shortcomings of this approach:

“The model of multiple services on one platform creates a risk of ‘bloating’ the platform as service leads keep asking for new add-ons. The process of platform development needs to be led by end-user insights.”

They also noted the ‘double-edged sword’ of wanting service lead organisations to launch MaaS services with their stakeholders, but then having to rely on them to deliver the launch and ongoing promotion of the platform in a timely and effective way. In recognition of this, Fuse suggested:

“There’s a need to qualify service leads more before they come onto the platform. This could involve them signing up to certain terms and conditions and potentially paying to get involved. There could be a contractual arrangement that details what is expected from each party.”

Differing perceptions about what constitutes success were also raised by Fuse as challenges:

“It’s important to have a user-centric approach to designing MaaS services. What is a good integration from a user perspective? For example, Fuse delivered an integration to enable taxi bookings. On the surface, this could be seen as a success. However, no one booked a taxi via this system, which could be seen as a failure.”¹⁵

A fundamental challenge associated with delivering MaaS services is sourcing certain data and carrying out desirable platform integrations:

¹⁵ It is worth noting that the taxi booking serve was not promoted via the interface which was most likely to generate taxi trips, i.e. GoNHSTayside. This is a consequence of improvements requested by one service not necessarily being applied across all services. Not picking up on this is a fault of both the provider and project management.

“There are structural issues with transport data. For example, Scotrail ticketing cannot currently be integrated because their e-tickets are proprietary. For this reason, Fuse would much prefer to integrate aggregated data - like Traveline Scotland’s data - rather than deal directly with transport operators. ...

[For instance,] “...during COVID, users were saying some bus companies were providing crowding details about services. However, these data were not available to third parties like us. So expectations like these need to be managed.”

A structural challenge relates to the nature, extent and quality of existing travel options:

“The quality and availability of transport services is variable, and this is an entrenched barrier to the success of MaaS. However, deploying MaaS alongside service improvements is likely to reduce the impact of this barrier.”

Fuse also noted a challenge with selling the concept of MaaS products due to existing popular journey planners (such as Google Maps).

Dundee & Angus College

When asked about the potential to continue the My D&A Travel project beyond its pilot phase, the College had a number of questions, such as:

“If the app is going to be maintained, how often are there going to be updates? You know yourself, there are always updates to operating systems. But without these, then apps don’t work properly. If this happened, people might think: ‘Oh no, this isn’t worth it’, and then they just completely stop using it.

“If the app stopped working, users might think: ‘why did the college waste time and money on this’, without knowing the full story.”

Loch Lomond and The Trossachs National Park Authority

The NPA was keen to see the pilot project mainstreamed without delay:

“I think it would be a step backwards in terms of messaging around sustainable transport if project funding isn’t continued. We would be able to regroup, but it would feel like a loss of momentum, which would be experienced by the general public, who would lose the ability to plan journeys in the same way. It would also impact on staff who use the platform.”

The NPA expressed a view that platforms like ENABLE will always require core funding. However, it acknowledged that budgets are very tight across the board. While the NPA may be able to contribute small budget lines to support a continuation of the service, full funding would not be possible. While the NPA could also provide in-kind expertise and support, it would need core funding from external sources.

Summary of findings from process review

The evaluation of the project and those who were part of the project team is vast; however there are some significant learnings that have been highlighted and considered in a SWOT analysis.

Fig 3.17 Summary of the process review

Strengths of the process

Tactran ENABLE model – a bespoke tool for different user groups - successfully gets the journey planning tools to the public

Tactran's good networks and strong relationships with organisations across the region underpinned the success of the ENABLE pilots. Through, having these strong connections, there was confidence that partners would be dedicated to the project and deliver. These partners, beyond the Project Team, themselves strengthened the project with their experience and knowledge.

Fuse Mobility's collaborative approach to development has enabled the success of the project, both in terms of working alongside Tactran and other partners not only with technological elements, but with marketing and project planning.

The Loch Lomond and Trossachs National Park Authority has a particularly strong marketing and comms department to support the platform promotion as well as a significant social media following. This expertise and well-planned approach to communications resulted in strong and very markable increases in users.

Weaknesses of the process

The pandemic impacted on the project through:

- The evolving and extended travel restrictions, and the impacts they had on the service delivery of the National Park Authority, NHS Tayside and Dundee & Angus College, affected both launch dates, and the need and willingness of people to travel (especially by public transport)
- The evolving restrictions made it difficult to plan. The optimism that 'normal service would be resumed 'soon enough' was misplaced, and in hindsight, elements of the project could have been put on hold to conserve resources.

Greater opportunities to gather, and use, user insights in the co-tailoring process desired

The service pressures of, for example the College and the Health Board, would naturally take priority over directing time to deliver a journey planning pilot

Response rates to the user / non-user monitoring and by extension, an earlier understanding of the processes required to provide statistically valid results.

It was difficult to generate and main interest in an Advisory Board established to guide the long-term shape of the project.

Fig 3.17 Summary of the process review

The MaaS Investment Fund programme could have benefited more from sharing and learning across the MIF projects. Whilst opportunities were provided, little was shared by the respective pilot projects themselves

Opportunities for the process

The model, and platform can be readily adopted to supported public sector objectives across the region and further afield. Reducing costs to the public sector in doing so.

Both the National Park Authority and Dundee & Angus College felt that what works for them would also work for other national parks and colleges.

As a pilot, there is a fair degree of trial and error (*promotions / investigating integrations etc*). In hindsight, these are regarded as weaknesses as the resources could have been directed elsewhere. However, within the scope of a pilot, they should perhaps be regarded as opportunities to learn rather than weaknesses.

The co-tailoring process for individual groups allows bespoke features (e.g. National Park 'explore' function) enabling the tools to offer more than e.g. google maps or Traveline, which is essential if they are to be successful.

MaaS tools make the most of the transport services we have. Existing funding streams could include an option to use MaaS as a delivery system. There is a need to consider the costs of not continuing to fund MaaS in the Tactran region, and there is a strong case for continuing investment into a service that helps people make better, more sustainable use of existing transport options

Threats & challenges to the process

The pilots were short and in order to try different ways of promotion, tech etc, a longer window would have been better.

The nature, extent and quality of existing travel options will determine the options that a maas tool can offer the user

A fundamental challenge associated with delivering MaaS services is sourcing data and carrying out platform integrations:

The lack of a longer-term plan from Transport Scotland to keep alive the MIF pilot projects, until the MIF programme had been evaluated presents a significant risk to being able to take those pilots forward if the programme evaluation determined it was beneficial to do so.

Working with some partners and convincing them to come on board and work jointly was more challenging with some than others. It is frequently determined by the person involved and their own personal commitment or interest in the project.

While the strength of the project is the ability of service partners to own and disseminate the journey planning tools directly to their users. This strength will be a weakness if service partner resources are directed to the priorities of that service (be it provision of health care or education).

Fig 3.17 Summary of the process review

Presumptions about what users want and need was a challenge during the process, and may be a threat to the development of such tools. It is easy to get led by the capabilities of technology and what “can be done” as opposed to what users *need*. The Making Connections Audit highlighted this to the project team, particularly that users wanted simpler, cleaner information in order to obtain the information they wanted and needed. User-led development is the way forward; however, this takes time, and this should be factored into future projects.

Results from the process review provide strong support for the suggestion that the ENABLE project has successfully helped to demonstrate the benefits MaaS can deliver for a variety of stakeholders and the users they represent. For instance, not only did all service-lead organisations indicate a broad satisfaction with the processes used during and outputs generated by the pilots; there are also indications that they all have an interest in continuing and potentially expanding the provision of MaaS services in the future.

Alongside this, both Tactran and Fuse indicated their broad satisfaction with the way the project was delivered, while at the same time, acknowledging a number of areas where improvements could be made. In addition, they made a strong case for continuing the projects into the future, citing both the value generated by the pilot projects, as well as the risks to establishing such projects in the region again if the programme was stopped, in their rationale.

4. Taking MaaS Forward

4.1 The need for MaaS solutions

In order to achieve pressing policy objectives there is a need to promote sustainable travel options. To do this there is a need to connect with people: make them aware of what the travel options they have and promote their usage.

This is delivered to a certain degree by some providers. Google Maps is a private sector solution and but cannot be directly managed by the public sector to achieve goals. It also promotes organisations with which it has commercial relationships (e.g. certain taxi companies) and does not include very local transport features and operators such as local transport hubs and community transport or DRT. Traveline provides a public transport operator and government led solution and has been available for a number of years. While this is a useful tool, it has not led to a step change in transport awareness and uptake and only provides information on certain modes (bus (not all), ferry) and again does not include local features and services.

The results of the Tactran Enable programme also suggests that people that have constraints to how they travel are more likely to require and use travel planning support.

4.2 Financial sustainability of MaaS

There are two main income streams which could drive the top line revenue of an operational MaaS system: advertising income and booking commission. However, each has limitations and potential negative impacts and, due to low margins, require huge user numbers to become significant for the business case around MaaS.

Advertising income

Adverts could appear in a MaaS app or website in a variety of forms. Banner ads (rectangular ads that are usually displayed at the top or bottom of a mobile app's screen), interstitial ads (full-screen ads that appear between different screens or actions), native ads (designed to blend in with the look and feel of the mobile app), and video ads (skippable or non-skippable videos displayed before, during, or after a screen or action in the app) are all different types of mobile app advertising formats. Each format has its own strengths and weaknesses, income generation potential and the effectiveness of each format can depend on the context in which it's displayed.

However, the revenue potential of including adverts is very limited. For example, a native ad may pay as little as £0.08 for 1000 views by app users in the UK and only £0.07 per click. To put this in the context of the ENABLE project, June 2022 was one of the busiest months for app usage and journey plans on the National Park Journey Planner (the most used service in the project). If the National Park Journey Planner had every type of ad possible in it (Banner ads, interstitial ads, native ads and video ads) for the month of June, the revenue generated would have only been £24.40.

There are also downsides to having ads in an app. When ads are poorly placed or overly intrusive, they can negatively impact the user experience of an app. There is little control over what is advertised to each user. For example, a new petrol car may be advertised in a sustainable journey planner. Seeing the same ads repeatedly can lead to ad fatigue, which can make users less likely to engage with the ads, take the desired action or continue to use the app. Some users may have concerns about the

data that's collected by mobile app advertising, such as their location or browsing history. This can lead to a lack of trust in the app and the businesses that are advertising in it. If an ad is perceived as annoying, offensive, or irrelevant, it can negatively impact the brand that's advertising in the app and the app brand itself.

Booking income

There are two main ways to generate booking income in MaaS: commission provided by a transport operator for taking care of a transaction on their behalf and/or the addition of a booking fee to a journey transaction made on the MaaS app. Private sector led apps may focus on generating income from a particular mode or operator if they have a strong commercial relationship with that operator and will actively promote that operator.

In the Tactran ENABLE project there were no commercial agreements and promotion in place with a specific operator. This was a key part of generating trust built on impartiality. However, there were commission agreements in place for both taxi and rail transactions made in app. There were also mandatory booking fees (shared with the retailer) applied to rail transactions to cover the unavoidable cost of retailing small transaction value rail tickets. However, any commission system or booking fee model is absolutely reliant on users choosing to book and pay for their journey in app. The Enable project found that although users saw a lot of worth in the journey comparison function of the MaaS apps, if booking and paying was useful/necessary in advance it is assumed that they transacted with the transport operator directly. Albeit, booking and paying in advance is not necessary for the majority of trips, especially bus trips.

In terms of the project objectives - to enable users to make the most of their transport system, travel more sustainably and to find out about and consider less known forms of transport such as Community Transport, Car Club and Demand Responsive Transport – those can be achieved whether the user books and pays for their transport in app or directly with the transport operator.

There are of course, down sides to retailing transport in-app: the often large cost of the initial integration with a transport operator to allow booking and payment in app, the burden of servicing a customer relationship where a payment has been made (refund, booking issues etc), and the challenge of making the booking and payment user experience as seamless as, if not better than, a dedicated transport operator who does not have to including information on all the alternative modes of transport.

Finally, the income value of transacting on public transport tickets is very small due to the already tight margins afforded to public transport operators. As an example, a £20 rail ticket in Scotland would cost a user £21.50 in a MaaS app with a mandatory booking fee, and only provide the MaaS app a net income of £0.51. The Enable services were focussed primarily on local and regional travel. However, larger commission payments are generated from long distance travel. Although it was possible to book long distance rail in the Enable services this was not within the services' use case and it was not actively promoted in the pilot.

4.3 MaaS in Scotland - Potential scenarios

In a recently completed MBA research project¹⁶ a number of potential scenarios were identified for MaaS. These scenarios were developed through workshops and interviews with key stakeholders in the MaaS sector.

The work concluded that the biggest determinants of future MaaS scenarios were (i) the levels of profitability derived from MaaS products; (ii) the levels of public sector policy relevance of MaaS. Four scenarios were discerned for Scotland, as presented in Figure 4.1 and described below.

Fig 4.1 What scenarios are likely for MaaS in Scotland

Scenario Matrix

	High MaaS profitability	Low MaaS Profitability
High policy benefit/ public sector support for MaaS	"Everyone wants a piece"	"Not for profit"
Low policy benefit/ public sector support for MaaS	"Battle for monopoly"	"Fizzle out"

Evidence from Tactran Enable shows that MaaS is not financially self-sustaining, at least not in the geographies that cover most of Scotland. Booking through the platform is negligible (and thus no commission is generated). Additional revenue from in app advertising was evaluated to generate little revenue and disrupt the user experience (see above). Other relationships could be explored, such as commission from the promotion of specific options (e.g. car hire) though any form of promotion was seen to compromise trust in the platform.

Hence, unless MaaS can generate significant public sector support by demonstrating policy benefits, there is a risk that the tool will fizzle out in all but those areas where mass transport provision and integration occur (i.e. Greater Glasgow).

¹⁶ D.R.Smith (2021) Scenario Planning for the UK MaaS Market: Opportunities and how to capture them. Unpublish MBA Thesis

4.4 Learnings from the project and beyond

The Tactran Enable project has generated learnings which can help understand the role of MaaS in Scotland. These come not only directly from the project, but sharing and learning with others in the MaaS community during the period of the project.

Recognising limits of MaaS journey planning tools

Recent research into MaaS funded by Department for Transport entitled Future of Transport - Deliberative Research¹⁷ recognised that encouraging the uptake of more sustainable modes of transport through a MaaS app “is a big ask”. The strategic findings from Tactran Enable also highlights that MaaS is only part of the solution to delivering sustainable integrated mobility.

The users experience of using a journey planning tool will be influenced by

- the availability and reliability of information
- the availability and reliability of transport options

Accordingly, to make integrated mobility work, promoted and enabled by MaaS journey planning tools, we need

- sufficient and reliable transport services, ideally that integrate
- digital access to planning, booking and paying for these services, including real-time information for public transport services

As the provision of transport services is disparate (public, commercial and voluntary) we also need means of bringing everyone to the table.

The effectiveness of journey planning tools to support people – with or without access to a car – accessing destinations by sustainable modes can only be realised when the transport eco-system provides realistic integrated transport options.

The Enable model was to integrate services where they were available and provide booking and payment were practical. In many areas a viable non-car based alternative is not readily available. The Deliberative Research highlighted that “having transport infrastructure and services in place, particularly in rural areas, is seen as a fundamental first step”. And if the objective is to encourage a modal shift from car to other modes, making driving less easy or attractive is also required. It is of note that the largest modal use of the three MaaS services was bus where booking is not a viable option and contactless payment is now widely available.

Transport data access

Ensuring that transport data is readily available both technically (via API links) and commercially (at zero cost to the public sector). This can be achieved through the public sector requiring data access in any technology tenders in the mobility field.

¹⁷ Future of Transport - Deliberative Research - Research report, March 2021

<https://www.gov.uk/government/publications/future-of-transport-deliberative-research>.

The aims of the research were to understand: perceptions of CAV safety; the role of MaaS in encouraging sustainable travel; perceptions of shared mobility services; and attitudes towards data sharing. The research involved the establishment of an online community and online focus groups with 207 UK adults drawn from the general public, a simpler programme with 28 young people aged 11-17 and a large-scale quantitative survey of 2,842 UK adults.

Low cost adoption and joint learning

Allowing new partners (local authorities, RTPs, third party organisations) to join a platform (via licensing arrangement, such as the Tactran ENABLE model) and benefit from, and ultimately contribute to, joint learning.

Interoperability guidance

Protocols and guidelines to ensure that local and regional MaaS services which are developed can be utilised seamlessly and effectively by different users between and within areas without confusion and reduced customer experience.

Collaborative public sector led working

Collaborative public sector led working through MaaS can be a real force to creating and improving the mobility system beyond the car. The mobility system can be seen as a number of layers - layers which must be aligned to create a fully integrated system where behavioural change is possible (see figure 4.2) . MaaS can be seen to cover Informational, transactional and governance layers. Without the lower layers of the pyramid being in place the full impacts of this MaaS layer cannot be realised. However, with effective MaaS governance, as highlighted above, the right stakeholders can use the MaaS service to highlight and enact improvements at the lower layers.

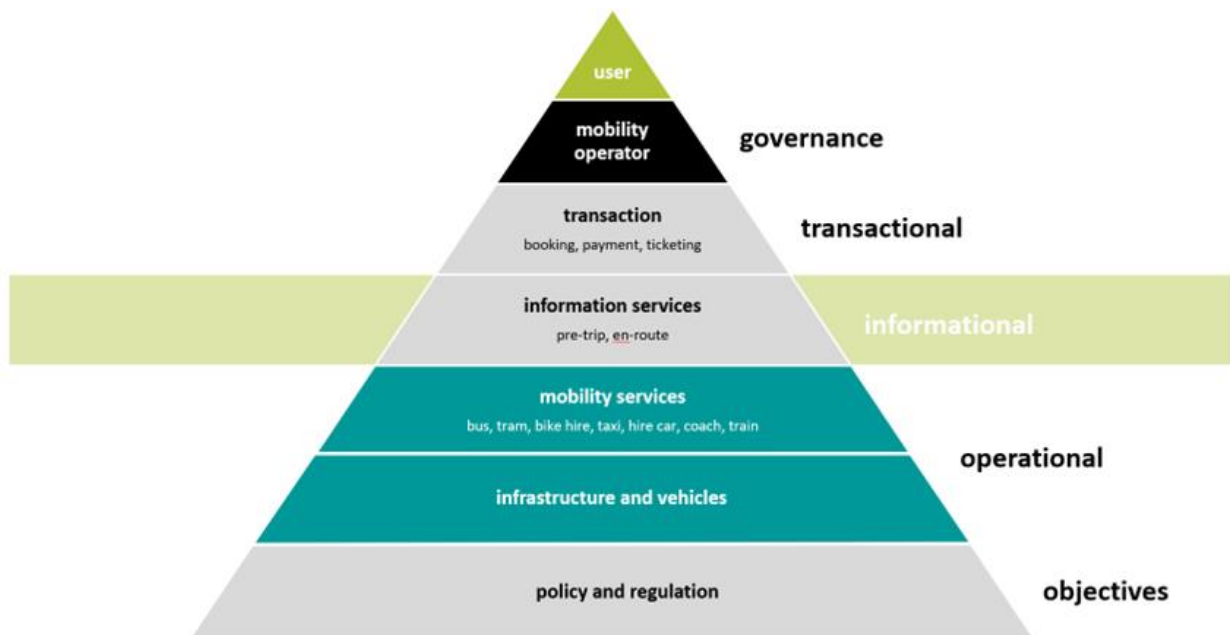


Figure 4.2: Hierarchy of Mobility

User Trust

The Deliberative Research showed that people do not trust private MaaS providers to provide unbiased options. Trust is seen to be essential to uptake and use: trust that there is no conflict interest in the MaaS organisation and trust that information is correct. Respondents noted the key role of the public sector in promoting this trust. In addition, the research suggested that MaaS apps should be free at the point of download and simple and easy to use. These were considered necessary pre-conditions for increased usage and behavioural change.

4.5 Tactran ENABLE model: development potential

The Tactran Enable model of multiple MaaS services on one platform, managed by a public sector (such as a RTP) and promoted by a public sector agency). is supportive of the user requirements emerging from the Deliberative Research.

By using third parties as the face of the MaaS services (NHS, National Park Authority and College) the Tactran Enable model not only linked directly into the travel destination and activity but also exploited the organisations' corporate profile and trust. This ensures there is no confusion as to the brand and the ownership of the journey planner.

The Tactran Enable model of working with a third-party organisation also widens the breadth of policy objectives for the project. As has been noted above, through the Tactran Enable Project: NHS Tayside aimed to enhance equitable sustainable access to health; Dundee and Angus College wanted to improve inclusive access to education; Loch Lomond and Trossachs National Park Authority aimed to enhance inclusive sustainable access to the Park for visitors. Each service was using transport to achieve their objectives in related areas.

Users of public services therefore have similar, but different journey planning needs. Public sector organisations are best placed to design and promote MaaS services for their service users and want to see data on how 'their' MaaS service is being used. We have seen that different user groups respond well to using a brand they already trust, and a brand that feels like it's the right tool for the job.

The Tactran ENABLE model highlights the specific benefits distinctly branded MaaS services bring to the end users and the public sector services which 'own' them. And if these services are powered by a single platform then this can reduce costs for all.

The Tactran ENABLE MaaS model reinforces trust and widens the policy achievement potential of MaaS. Thus, the potential of this model, and hence that of other MaaS journey planning tools, needs to also appreciate (and hence measure) how MaaS, by supporting broader policy objectives, can help the tools promote their fundamental aim of helping people access destinations by an alternative to the car. The user's journey does not start with "where do I catch a bus", it starts with "I want to go to college". By recognising the context of the journey and working with the destination (rather than externalising transport), we stand a better chance of understanding what the user needs, when, and how to get that information to the user.

4.6 Next steps: The Integrated Mobility Partnership

Whether or not the joint Tactran ENABLE and GoSEStrans MaaS programme continues in the long term will be a decision taken by the respective Partnership Boards based on:

- Tactran ENABLE and GoSEStran MIF Project Evaluation Reports
- Transport Scotland MIF Programme Evaluation Report



The combined project team will however continue to work on the joint programme to inform this decision by continuing to better understand if/how the programme can be a sustainable tool for public sector services. Based on the principles of collaboration and sharing upon which the programme has been built, we will promote the programme to interested parties under the umbrella of the Integrated Mobility Partnership.

Under this umbrella we intend to:

- Maintain the MaaS Platform as an option for promoting sustainable access. Pausing the programme until a fully informed decision can be made will place a considerable risk on being able to restart the programme due to the loss of confidence in the tool by users and service partners. In maintaining the platform we will continue to trial and understand
 - What users need
 - What enhancements / promotions / marketing attract and retain users
 - The business case for achieving a sustainable tool (including understanding the market for any longer-term delivery post 2023/24)
- Promoting learnings from GoSEStran and Tactran ENABLE MIF pilots to the widest possible audience in Scotland to promote MaaS journey planning tools and to help agencies that may be considering journey planning tools understand what may and may not work
- Work with potential partners to understand their MaaS requirements to inform future procurement and governance arrangements that will enable Tactran, SEStran and any other interested parties to continue (or start) their MaaS journey if it is determined worthwhile doing so and funding to support the programme can be found.

Enhanced delivery will be achieved for members by providing easy access to technology and commercial agreements developed within Enable. Members will have access to the Enable platform, front end (apps, webapps and the range of features developed). Commercially these will be accessed by framework prices and template contracts. Importantly, any new development from additional MaaS services will be made available to other members.

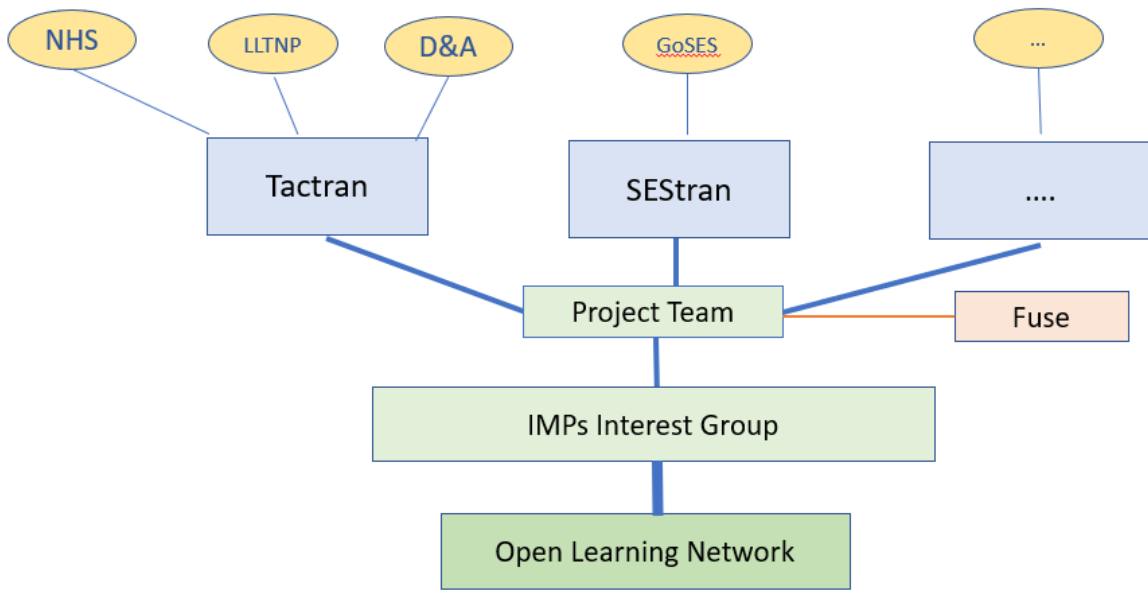


Fig 4.3 The Integrated Mobility Partnership

5. Conclusions

5.1 Tactran ENABLE Programme

The Tactran ENABLE project piloted journey planner interfaces (apps/websites) with three service providers (LLTNPA, NHS Tayside and Dundee & Angus College). These interfaces are powered by a single MaaS Platform.

The project sought to understand the advantages and disadvantages of building a MaaS eco-system which featured interfaces designed with and for user groups, rather than a generic tool targeted at a whole population.

In seeking to test the above, the Tactran ENABLE team believe that we have built a model which:

- Ensures that journey planning tools are effectively distributed to those that need them
- Is user centric (as per the principles of MaaS) and enables us to understand and respond to what different users need, and ensure that this is provided in a clear and simple manner
- Supports the policy objectives of all partners involved, whether that be helping increase the use of sustainable modes or reducing anxiety for people attending hospital appointments
- Provides best value for the public sector collaborative working and sharing costs and experiences, which is scale-able to cover any number of services and/or geographic areas

5.2 Project Team Observations

During the timescales of the project, which included learning not just from Tactran ENABLE programme, but also through discussion with other MaaS partners through MaaS Scotland, discussions with parties interested in the programme, the Project Team would offer the following observations which we would recommend are considered alongside the findings of the project set out below:

- Feedback from the MIF programme during the pilots appeared to prioritise MaaS as tool for promoting modal shift. We would strongly recommend that it is also seen as a tool for promoting social inclusion by helping people access services such as employment, education and healthcare. Indeed, MaaS journey planning tools will only support the former through mass adoption, whilst they will support the later at all scales of adoption
- The MIF programme has been conducted independently from any programmes to promote digital inclusivity. If any public sector digital resource is to be rolled out, it should be considered alongside the broader subject of digital inclusivity to help understand whether and how the tool is available for those likely to benefit most from it

5.3 How the project has addressed the MaaS Investment Fund themes

Table 5.1 below summarises how the project has addressed the policy themes sought by the MaaS Investment Fund.

Table 5.1: MaaS Investment Fund themes	
<i>MIF themes by NTS2 priorities</i>	<i>How has the Tactran ENABLE project addressed these themes</i>
<p>To reduce inequalities</p> <ul style="list-style-type: none"> • Access for rural, islands and communities • Tackling inequalities, accessibility and mobility barriers • Will be affordable for all 	<ul style="list-style-type: none"> • For rural (and urban) communities the interfaces pull together in one place all transport services available enabling users to make the most of whatever limited transport services available, and how these might be integrated to enable a journey to be made • The Making Connections audit has enabled us to design simple and easy to use interfaces. This goal is supported by the focus on interfaces for particular groups enabling just the information they require. The more people and functions you try and serve, the more complicated the interface will get (including data usage) • Apps targeted at users of e.g., further education and health facilities help reduce inequalities by assisting attendance at those services • The interfaces provide cost information and help users identify affordable options • User/non-user surveys indicated that the users of the journey planning tools were more likely to have fewer transport options, make more complicated journeys and be sensitive to cost and have a disability
<p>To take climate action</p> <ul style="list-style-type: none"> • Modal shift to sustainable public transport alternatives, reducing carbon emissions 	<ul style="list-style-type: none"> • The responses to the user / non-user surveys indicate that the journey planning tools have made it more likely that users will choose to use active and sustainable modes of travel • The journeys planned on the tools evidence that most planned journeys are public transport journeys
<p>To help deliver inclusive, sustainable growth</p> <ul style="list-style-type: none"> • Enabling sustainable tourism 	<ul style="list-style-type: none"> • The National Park Journey Planner has provided the LLTNPA with an additional tool to help promote sustainable tourism, allowing visitors to the Park to easily explore the options for travel to and in the Park that don't involve driving

Table 5.1: MaaS Investment Fund themes

<i>MIF themes by NTS2 priorities</i>	<i>How has the Tactran ENABLE project addressed these themes</i>
<ul style="list-style-type: none"> Supporting digital innovation within Scotland, specifically relating to public transport 	<ul style="list-style-type: none"> The pilot has resulted in a MaaS Platform covering two regional transport partnership areas, with the potential to host a number of interfaces to support public sector objectives The pilot has tested the application of features within the context of a journey planning tool The use of Scottish based providers has expanded their knowledge base and experience
<p>To promote health and wellbeing</p> <ul style="list-style-type: none"> Promoting healthier lifestyle by promoting active travel (including bus and rail as they have an element of walking involved) Will help make our communities great places to live 	<ul style="list-style-type: none"> Whilst users have said that the tools make it more likely that they will make their trip by sustainable modes, the data on journeys planned demonstrates that this is likely to be by public transport modes rather than walking or cycling. People may need to know where to walk or cycle as part of a multi-modal journey, but they may not need a journey planning tool to make most short trips within their communities. The tools which are part of a package of measures which seek to reduce <ul style="list-style-type: none"> car traffic in the national park which will help reduce the impact of visitor traffic on the Park's communities traffic heading to hospitals in Dundee and Perth which will both support air quality objectives as well as reducing the impact of traffic on neighbouring communities

5.4 Learnings

- **There is a need:** The survey results suggest that users of the journey planning tools are more likely to experience travel difficulties resulting from the availability of options, costs, complexity (number of stages) of public transport journey etc. It was also evident that the travel difficulties were different between the different groups of users, i.e. the problem we are trying to solve does vary between different user groups.

It is clear that if we want to promote alternatives to the car (either for those that have access to a car or those that don't) we need tools that can provide users with information about the whole journey....the alternative to the car is not a bus or a train....it is the walk / cycle / DRT to a bus or train, and then the walk or cycle to the destination.

- **Users have found the tool useful:** the high % of returning users for the National Park Journey Planner and myD&A travel interfaces suggest that users found the tools useful (NB hopefully a person will only visit the hospital on an occasional basis). In addition the majority of users suggested that the app met their journey planning needs.
- **Where does the customer journey start?** Most of the MaaS conversations the Project Team participated in parallel to the Tactran ENABLE project were concerned with technical integrations and what the tools could do rather than what the user needed. The Tactran ENABLE project highlights. It is equally, if not more, important to have a model that gets the information to greatest number of users that most need it.

Developing interfaces for users of a specific service, and branding and disseminating the tool via that service has resulted in many more users than the other MaaS pilots. The customer journey does not start with “what bus do I catch”, it starts with “I want to go to college”

- **Service branded tools:** designing, branding and distributing a journey planning tool for, with and through the service that the user is trying to access appears to be a successful model for getting a journey planning tool to users. This may be because:
 - The tool is as convenient and user friendly as possible for each client group, making it as easy for them to access the information they need. Conversely the more features that you try and squeeze into a journey planner (to meet the demands of a wider audience) the more inaccessible the tool becomes
 - Being seen as a tool provided by the end service provides the user with trust
 - Being promoted by the service's communication channels allows the tool to be promoted to exactly who it needs to go to, with almost 100% coverage of clients

However, this is dependent on the commitment of the promoter service in terms of time to help design the tool, and establish distribution through communication channels. Whatever model of used for developing journey planning tools, transport bodies can only do so much without the input of the destinations themselves.

- **What does the user need:** It is important to be able to present users with features that they need, but we must be led by the user

Clear and simple: The continual user feedback loop, and especially the audit of the tool by people with disabilities and early onset dementia, emphasised that what people want are simple and clear tools. The design of many MaaS tools is based on making the most of the technology. Is this what the user needs or wants? It is near impossible to present an app which is both simple and does everything.

Ability to plan and check a journey: We should be mindful of the scale of problems that people face when travelling. User and non-user surveys showed that what people wanted was the ability to plan and check a journey. Of interest were the study findings that:

- The ability to book and pay for that journey was rated far less important. (*It should be noted that the booking of that ticket is unlikely to be cheaper through a 3rd party app, than directly via the transport provider.*)
- Very few users planned active travel trips. Whilst active travel is (an essential) part of a multi-modal journey, people were not using the tools to plan active travel journeys. As most active travel journeys (which are not part of a multi-modal journey) are likely to be within the user's neighbourhood, is there really any need to provide journey planning tools to support such? People require more assistance to plan a bus journey than how to walk or cycle to a local facility.

- **Is a public MaaS tool self sustaining?** It is unlikely that booking and advertising income is likely to enable a public sector tool to be sustainable. In addition, maximising advertising opportunities would make navigation difficult.

In addition, the costs of providing a public sector MaaS platform are likely to be prohibitive for most services on their own

Private sector tools, which can make a profit from selling a product (*and are therefore regarded as product promotion costs*), may be sustainable, but may not be designed to support policy objectives where there is not a mass audience, such as in rural areas or for the most vulnerable groups in society¹⁸.

- **What is the value to the public purse?** However, the costs of not supporting tools which promote sustainable travel for those with and without a car are likely to result in greater mitigation costs for addressing social inclusion and climate change. There is a need to both provide and promote alternatives to the car.
- **If public funding required, where should this come from?** Agencies externalise costs and benefits which are not part of their core business. This gets worse as budgets tighten (*ironically at a time when they would benefit more from working together*). NHS Boards concentrate on healthcare, colleges focus on education, DWP concentrate on getting people to interviews. All agencies recognise the vital

¹⁸ Furthermore, particularly in our remote areas, the transport services available may include any combination of shared transport services. Being aware of this information and keeping it up to date is more likely to be practical for the local government sector agencies, rather than a national or international commercial company.

role that getting people to their services play, however almost all struggle to prioritise spend/resources outwith their core remit.

It takes Government to either:

- Fund measures for the societal good that agencies externalise OR
- Require agencies to not externalise these costs

- **Taking MaaS forward in Scotland:**

- The goal of any MaaS journey planner is to be able to present the user with all the relevant options that are available. There continue to be issues of integrating information that exists. Any requirements for data sources that could be useful for journey planning tools to be able to be enable shared would be invaluable
- A good proportion of most MaaS platforms will be seeking to include the same information (national bus, coach and rail timetables; real time information; and cost and booking information). It cannot be good value for the public purse to support too many such platforms.
- There is potential for growth: All of the pilot surveys contain evidence to suggest that there is an openness to the idea of a multi-functional platform, which indicates that those who had already started to use it were becoming regular users, while the (much larger) cohort of non-users were expressing support for the concept, even if they weren't using it yet.
- The pilot MaaS projects which were enabled by the MaaS Investment Fund remain in their early stages, and there remains much to discuss in terms of the shape of MaaS in Scotland (*which we hope this report will help with*). However, there is also an urgency to making the most of our existing transport services if national aspirations, such as both the Climate Change and Child Poverty targets (and in particular the 2030 interim targets applying to both) are to be achieved. Given the urgency it is suggested that we must both continue to make the most of what we've got while we seek to understand the best long-term solutions for helping promote and enable sustainable transport both for those with and without access to a car.