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**MOBI** | PROMOTING  
SMART  
MOBILITY  
TO  
EMPLOYEES



Co-funded by the Intelligent Energy Europe  
Programme of the European Union

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# 1. Introduction to the MOBI project



# 1. INTRODUCTION TO THE MOBI PROJECT

**MOBI** 'Promoting Smart Mobility to Employees' is a project co-funded by the Intelligent Energy-Europe Programme granted by the Executive Agency for Small and Medium sized Enterprises (EASME). The project started in 2013 and ran till March 2016.

- The European project MOBI gathered six partners around one common goal: to change travel behaviour amongst employers and employees throughout Europe and decrease the number of single occupancy car trips by introducing a game environment (From5To4 / F5T4) and focusing on customer incentives. These customer incentives can be material but mainly are intrinsic driven like competition, freedom of choice and flow of the game.
- The aim of the F5T4 online game is to encourage employees to travel to work more smartly (e.g. walking, cycling, public transport and car sharing) as well as having fun whilst competing in teams against their friends and colleagues at the same time. It is a fun and simple game for people to play and record their journeys to work.
- Whilst playing as part of a team, employees can compete with other teams to see how many sustainable trips are made each week. In return, the website gives employees bespoke information about how much energy they have saved, calories burned as well as the opportunity to win prizes.
- F5T4, it's a simple formula: for every 5 workdays, 1 day smarter commuting. In addition to walking, cycling, public transport and car sharing, employees in the demonstration cities will also be incentivised to use e-modes (bikes, scooters and cars) or working from home.
- This approach offers opportunities for any organisation that experiences accessibility problems and is keen to help their employees make a positive difference in their local area. By participating in the MOBI project, employees will be informed about all the different travel to work options that are available and will be provided with suggestions about how to travel more smartly.

## 1.1 Project partners

The MOBI project was coordinated by DTV Consultants and supported by five other partners in Europe.

- DTV Consultants, Netherlands
- Mobiel 21, Belgium
- WYG (Environment Planning Transport) Ltd, United Kingdom
- TIS.PT Consultants in Transport, Innovations and Systems, Portugal
- Agency of Brașov for Energy Management and Environment Protection, Romania
- Energy Agency Plovdiv, Bulgaria

**ga·mi·fi·ca·tion** [gay-muh-fi-kay-shuhn]  
integrating game dynamics into your site,  
service, community, content or campaign,  
in order to drive participation.  
(see Bunchball)



## 1.2 Objectives

The overall aim of the MOBI project was to change the travel behaviour of employees and decrease the number of single occupancy car trips by introducing a game environment and focussing on intrinsic incentives. Four specific objectives were formulated to reach the overall aim:

- To inform employees of the benefits of using sustainable modes when making their commute, specifically via the From5To4 serious game, and encouraging them to do so;
- To make recommendations to policy makers as well as employers on further actions to increase energy efficiency in commuter travel based on the outcomes of F5T4;
- Involving at least 6 countries, 9 cities, 117 companies and 23.400 employees;
- Decreasing the use of car among employees during rush hour by 20%.

## 1.3 Why Mobi?

For employers MOBI appeals to several motivations to join as per example in raising awareness on sustainable mobility, cost and CO2 reduction, services (health related or personal freedom regarding time/place independent working) towards the employees and CSR goals which enhances the image of the company. These goals can be transferred to the employees.

For both employers and employees the MOBI campaign is also:

- A fun challenge or battle for individuals, teams, departments and companies;
- Awareness raising through transfer of knowledge during the game;
- A helping hand for picking up smart travelling and smart working;
- A structure for (playful) virtual or physical prizes or to support charity;
- Insight in the travel statistics and progress.

The tool is flexible, the starting position and possibilities to join existing initiatives are different in each country.



## 2. CONCEPT AND TARGET GROUP

**FROM5TO4**  
The mobility game

Nigel Clark  
PROGRESS 50%  
POINTS 104  
Level 2  
Sign out

Dashboard Leader board Stats My Mobi Team manager Help

Monday, April 18, 2016 - Game week 16

MO TU WE TH FR SA SU

Car Rush hour avoidance Car share Ferry Bus Tram/Metro  
Motorcycle Train Scooter Bicycle Walking Work from home

Week score - Game week 16

Mo	Tu	We	Th	Fr	Sa	Su
✓	✓	✓	✓	X		

Mobi

Tip from Mobi:  
Calculate with www.fietsen.123.nl  
your gasoline savings if you cycle to work.

Time left

000 00 00

CO2 emissions saved

You	Team
16.49kg	61.84%

Progression

Your most used means of transport

Your awards

Screenshot of Mobi's dashboard page

## 2. CONCEPT AND TARGET GROUP

### 2.1 Concept

**The MOBI project uses the award winning 'From5To4' commuter challenge tool to encourage travel behaviour change. Its overall aim is to reduce traffic by 20% in the peak hours by encouraging employees to travel more smartly, for example by walking, cycling, public transport, car sharing or working from home.**

- MOBI seeks to combine travel behaviour change with game elements in order to encourage active participation and a willingness to achieve quality results. This in turn leads to more participation and a bigger chance of achieving pre-defined goals.
- Participants are encouraged to change their travel behaviour by playing the game as an individual, a team member and as part of the company. On all three levels (the same) targets are set, a 20% reduction against the baseline.
- Points are allocated to individual participants based on how they travel to work as well as other opportunities to gain additional points from completing ad hoc tasks (i.e. short questionnaire surveys, supporting other team members) throughout the game.
- At various stages of the game there will be an opportunity for participants to convert their points into virtual prizes and rewards for their personalised MOBI avatar.
- The results of the points per participant and team are ranked and available for other participants to view. Organisations and individual participants can decide what level of access they would like other people to have regarding the results – i.e. 'open' access to all participating organisations and individuals to enable benchmarking across Europe to take place.
- Alternatively, organisations and individual participants may prefer 'closed' access and restrictions will be placed on their accounts to enable them to decide who can view their results (i.e. only those within their own organisation, neighbouring organisations within the same local area etc.).
- Ideally, the MOBI game is played continuously over a 6 month period to encourage players to establish habitual travel behaviour patterns. Participating in the game is simple; it only takes 1 minute a day to add information to the F5T4 tool, or couple of minutes every Friday when participants receive a reminder mail.
- The more intelligently employees travel and work, the more points and prizes they can earn for themselves and their team. An important side-effect of playing the game is that the employees and their teams will be contributing to the reduction of carbon gasses.

## 2.2 Target group and their motivations

The key target groups for From5To4 are employers and their employees, cities, public transport and electric vehicle providers. The primary target group are the employees because we are trying to encourage them to change their commuting behaviour.

### Motivations for the target group to play the game

Organisations that experience accessibility problems, want to pursue sustainable management or help their employees make a positive difference in their local area can benefit from F5T4. Organisations are encouraged to participate in the game by outlining the benefits it could bring to themselves and their employees. From5To4 can be used as part of a broader toolkit of mobility management measures to encourage people to change their travel behaviour. The game shares common objectives with Sustainable Urban Mobility Plans (SUMPs) and other travel demand measures, and may most likely positively reinforce each other's performance. It's a communication tool with all participants.

Local authorities (such as Spijkenisse in the Netherlands; Sofia in Bulgaria; Lisbon and Braga, in Portugal; Bristita and Brasov in Romania; Oxford and Nottingham in the UK) used the game as a good opportunity to raise awareness of mobility issues, set a good example and improve the quality of life in their local area.

Some companies have used the game to get to know their employees' mobility habits so that they could further develop their mobility plan. Others used the game to boost other mobility measures taken by the company, such as setting a carpooling scheme.

***Identifying the hook to engage the organisation is essential. Once their initial need has been identified, additional communications and engagement messages can be designed around it. The main motivations will vary wildly according to the type of organisation and the people responsible for communications and decision making. The main advantages to an organisation of From5To4 include:***

- ***Retrieving employee mobility data***
- ***Boosting other measures to promote sustainable mobility***
- ***Reducing parking scarcity/costs and other mobility related costs***
- ***Increasing the satisfaction, health and productivity of employees***
- ***Promoting social interactions amongst employees***
- ***Improving the corporate image and setting a good example for others to follow***
- ***Developing the social responsibility program***
- ***Commercial or research interests***

## 2.3 The role of a From5To4 Champion

A 'From5To4 Champion' needs to be identified within each participating organisation. They will be responsible for co-ordinating the game and acting as the point of contact for employees and the From5To4 promoter. The From5To4 Champion will need to be someone who is charismatic and enthusiastic who can motivate people to participate and maintain their interest in the game. In most cases this role is in line with their role within the organisation, communicate about travel options and arrangements. The From5To4 Champion should produce a

communications, engagement and marketing plan to highlight the key activities that will be taken to publicise the game and encourage employees to participate.

To reach employees and inform them about the game, several strategies may be followed. Examples include publishing the game on the organisation's website, newsletters and Facebook pages. Posters and flyers in elevators, coffee corners and cafeteria have also shown to work well. Word of mouth promotion by employees is essential to encourage new players to sign up and compete against other teams, departments, offices, companies and cities. All the base materials for this are available.

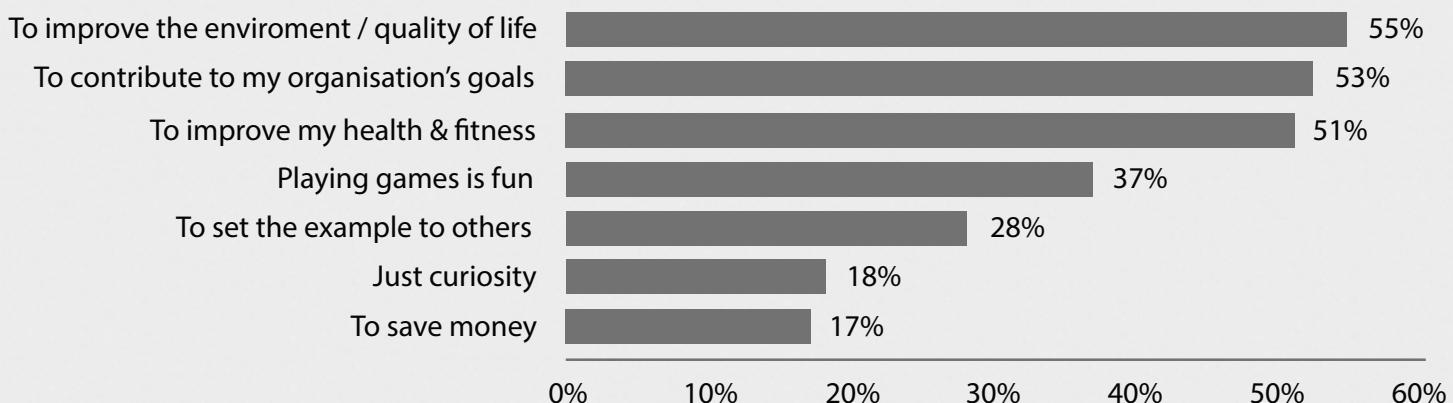
## Engaging employees

Highlighting the personal benefits from playing the game is essential for any communications materials aimed at employees. Since different people have different motivations, it is important to segment the audience accordingly.

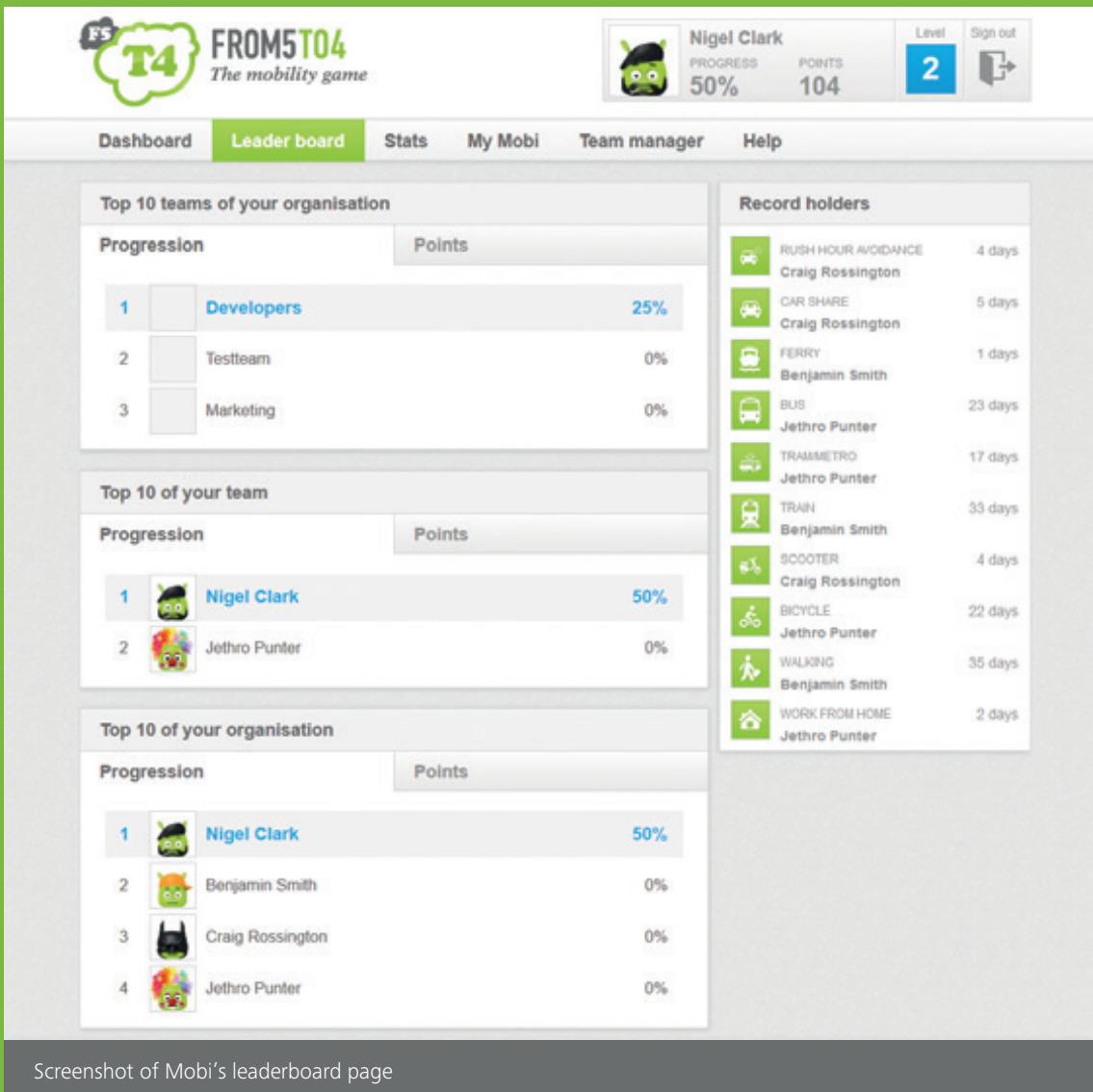
The organisation has the option to make the game mandatory. Whilst most organisations do not mandate the participation of the game amongst their employees, there were a few examples where this did happen and the results were still positive.

### *Examples of key benefits for players of the game*

***When asked to identify the aspects that contributed the most to their initial willingness to participate in the game, the majority of the 251 respondents said that in the first place they wanted to improve the environment and/or quality of life. Contributing to the organisation's goals and improving health and fitness were also mentioned by over half of the respondents.***



### 3. IMPLEMENTING THE FROM5TO4 COMMUTER CHALLENGE



The screenshot shows the MOBI From5to4 Commuter Challenge leaderboard page. At the top right, a user profile for "Nigel Clark" is displayed, showing a progress bar at 50%, 104 points, Level 2, and a "Sign out" button. The main navigation menu includes Dashboard, Leader board (which is currently selected), Stats, My Mobi, Team manager, and Help.

**Top 10 teams of your organisation:**

Progression	Points
1 Developers	25%
2 Testteam	0%
3 Marketing	0%

**Record holders:**

RUSH HOUR AVOIDANCE	Craig Rossington	4 days
CAR SHARE	Craig Rossington	5 days
FERRY	Benjamin Smith	1 days
BUS	Jethro Punter	23 days
TRAMMETRO	Jethro Punter	17 days
TRAIN	Benjamin Smith	33 days
SCOOTER	Craig Rossington	4 days
BICYCLE	Jethro Punter	22 days
WALKING	Benjamin Smith	35 days
WORK FROM HOME	Jethro Punter	2 days

**Top 10 of your team:**

Progression	Points
1 Nigel Clark	50%
2 Jethro Punter	0%

**Top 10 of your organisation:**

Progression	Points
1 Nigel Clark	50%
2 Benjamin Smith	0%
3 Craig Rossington	0%
4 Jethro Punter	0%

Screenshot of Mobi's leaderboard page



## 3. IMPLEMENTING THE FROM5TO4 COMMUTER CHALLENGE

### Set the timescale for the game

Ideally organisations should play the game for a period of six months as this gives sufficient data to better understand employee travel behaviour. For those organisations who think six months may be too long, it is recommended that the game is played for a minimum of three months. The tool is flexible in setting the period of play. Key dates to consider are:

*Launch date – this should take place four weeks before the start of the game. The aim of the launch is to raise awareness about the game and encourage employees to establish and register their teams. During this period leading up to the start of the game, the organisers should prepare some promotional text for emails, posters and notices.*

*Start date: four weeks after the launch date.*

*End date: most likely a minimum of three months after the start.*

### Choose the available modes

From5To4 has 12 possible modes for the commuting trips: walking; cycling; work from home; bus; tram or metro; train; ferry; scooter or moped; motorcycle; carpooling; car; rush hour avoidance. The organisation might not be interested in some modes (such as working from home or rush hour avoidance), or the alternatives might not be available in the geographical area (such as ferries). Before the game starts, the organisation must select which modes will be available as an option for employees.

### Define awards and complementary actions

Employees will be more motivated if they know in advance the awards being given at the end of the game. The organisation should decide which awards are to be given to employees, which might be done in cooperation with the From5To4 promoter or other local stakeholders. We recommend two or three prizes in different individual and/or team categories. In addition to the final awards, some complementary actions may be included, such as giving breakfast to cyclists or other equivalent measures that help increase the level of interest in the game.

### Form Teams

Each employee will play the game as an ‘individual’ and will also be part of a ‘team’. Each team will be made up of 5-12 players. Points are recalculated per player per working day so always comparable between all the teams. Employees can decide which team they will join (i.e. playing with colleagues in the same department, inter-department, inter-office etc.). Team players should motivate each other to travel sustainably and complete the ongoing tasks and activities to receive additional points.

The teams may be formed by the F5T4 promoter, but experience has shown that the teams formed by the players

themselves achieve better results. A team name and e-mail address of all team members is required as individual players within each team also need to be registered.

## Choose Team Captains

Each team needs to identify a 'Team Captain' (optional but recommended) who can enthuse and motivate their fellow team mates. The Captain will be responsible for ensuring each team member has registered. S/he will co-ordinate the team players and ensure they record their travel trips. S/he will also verify and validate the information their team provides to ensure the data is accurate. This will be achieved by approving the weekly record sheets and filtering out any suspicious trips (e.g. walking 50km). The Captain will also be the point of contact for the team and the From5To4 Champion. Team Captains may receive additional incentives to perform this role, chosen by the organisation.

## Set a Communication Strategy

Ongoing communication with the participants is important to maintain their interest in the game. This can be communicated either via the game itself (e.g. pop-up messages displayed on an individual's dashboard; messages posted by players on the From5To4 notice board), or via other media (e.g. e-mails, posters, events, complimentary actions).

Other strategies include methods to publicise the employee benefits of playing the From5To4 game. Players can do this by posting positive messages on the From5To4 notice board. Teams can do this by telling others about the game and encouraging them to participate. Organisations can do this by raising awareness about the game amongst their employees and informing other organisations about their achievements.

## Start the game

Enjoy the game and have fun!

One element that makes the game stand out and especially fun is the personal "Mobi" avatar that each game player has. The avatar acts as a coach to incentivise and encourage people to change their travel behaviour and use a car at least one day less per week.

Players can personalise their MOBI character by using points they have earned from travelling sustainably or completing other tasks (i.e. completing surveys, offering a bike or public transport buddy role to another member of the team etc) and exchanging them for virtual prizes.

The personalised MOBI characters can deliver messages to the players about a range of different subjects, including: information about any events that may be taking place, advice and top tips on how to stay motivated, requests for players to complete questionnaire surveys in return for additional points, and general motivational messages.



## 4. IMPLEMENTATION EXAMPLES FROM AROUND EUROPE

**FROM5TO4**  
The mobility game

Nigel Clark  
PROGRESS 50%  
POINTS 104  
Level 2  
Sign out

Dashboard Leader board Stats My Mobi Team manager Help

Your organisation

Points	Target	Latest award	Mood	Data
557	48% 13%			Start date: January 04, 2016 End date: April 25, 2016 Players: 4 of 4 active CO2 saved: 16493 kg / 61.84%

Progression

Week	Weekscore (%)	Doel (%)	Gemiddelde score (%)
1	10	48	0
2	10	48	0
3	10	48	0
4	10	48	0
5	10	48	0
6	10	48	0
7	10	48	0
8	15	48	0
9	10	48	0
10	10	48	0
11	10	48	0
12	10	48	0
13	10	48	0
14	10	48	0
15	10	48	0
16	35	48	0

Transport usage

Transport Type	Percentage
Car	35%
Bus	25%
Train	15%
Bike	10%
Pedestrian	5%
Home	2%

Your team: Developers

Points	Target	Latest award	Mood	Data
498	36% 25%			Start date: January 04, 2016 End date: April 25, 2016 Players: 2 of 2 active CO2 saved: 16493 kg / 61.84%

Progression

Week	Weekscore (%)	Doel (%)	Gemiddelde score (%)
1	30	36	0
2	30	36	0
3	30	36	0
4	30	36	0
5	30	36	0
6	30	36	0
7	30	36	0
8	30	36	0
9	30	36	0
10	30	36	0
11	30	36	0
12	30	36	0
13	30	36	0
14	30	36	0
15	30	36	0
16	35	36	0

Transport usage

Transport Type	Percentage
Car	35%
Bus	25%
Train	15%
Bike	10%
Pedestrian	5%
Home	2%

Team: Marketing

Team: Testteam

Screenshot of Mobi's statistics page

## 4. IMPLEMENTATION EXAMPLES FROM AROUND EUROPE

### Portugal

- **ANA Airport** – The Portuguese airport applied the game to improve their social responsibility, enhance the organizational cultural of the company and kick-starting the company's concern and actions for employee mobility. The enthusiasm of the responsible staff for the initiative was so high that it transmitted to the 40 players playing the game and, at the end, to the administrators who participated in the final awards event. From5To4 was truly a game changer in what concerns employee mobility policy in ANA.



- **NOKIA** wanted hardly to play the game, but they realized that they first had to get ready. Within a year, they built a new parking and showering facility for cyclists and made a carpooling tool available to match the trips of their employees. To raise awareness and capitalize on these measures, they finally applied From5To4, which was played by 35 employees who dramatically increased the carpooling and cycling share.
- When the **Municipality of Lisbon** was contacted by MOBI to be a partner in the preparation of a Mobility Week MOBI event they said: "we want to play it!" Leading by example was the main interest of the Municipality. The game debuted in the Mobility Week of 2015 and finished with an awards event towards the 30 players where the local mobility and human resources politicians promised to participate the next time and concluded that behaviour change actions should be more continuous to complement supply policy and not only be carried out during the Mobility Week.

### The Netherlands

- **CAPGEMINI** – This project was taken up as a show case project to research the additional value of gamification. CAPGEMINI already had a good package of mobility services and arrangements for their employees in place but the use of them did not meet the ambition. Because of the location near a high way and nature of work (a lot consultancy) from5to4 had to overcome some scepticism but in the end got good results with over 60 people reducing their car use during rush hour by 15 – 20%.
- **ERASMUS University Rotterdam** wanted to provide their staff and students with an optional mobility incentive after introducing payed parking for everyone. After a mobility survey about 65 people signed up and took part in the from5to4 game for a period of 4 months.

- The Municipalities of Spijkenisse and Bernisse were merged in 2015 to become the new **municipality of Nissewaard**. Part of the merge process – and also to give the example and precise what you preach – the municipality took part in from5to4 game for employees. With about 55 people for a period of 4 months finishing the day the merge project ended as well. Joint campaign with Rotterdam Verkeersonderneming.

## Romania

- BISTRITA MUNICIPALITY** involved 70 employees and challenged 4 other public institutions (40 employees in total) to play F5T4, in two sessions: one from July 20th 2015 to January 25th 2016, and the other from September 28th to December 28th, 2015. A total of 208 kg CO<sub>2</sub> were saved by the participants, during the 2 sessions.
- SIEMENS CONVERGENCE CREATORS** involved 50 employees that played F5T4 from August 24th until November 30th, 2015. A total of 282 kg CO<sub>2</sub> were saved by the participants, during the 14 game weeks.
- BRASOV MUNICIPALITY** involved 30 employees that played F5T4 from October 5th until November 30th, 2015. A total of 175 kg CO<sub>2</sub> were saved by the participants, during the 8 game weeks.

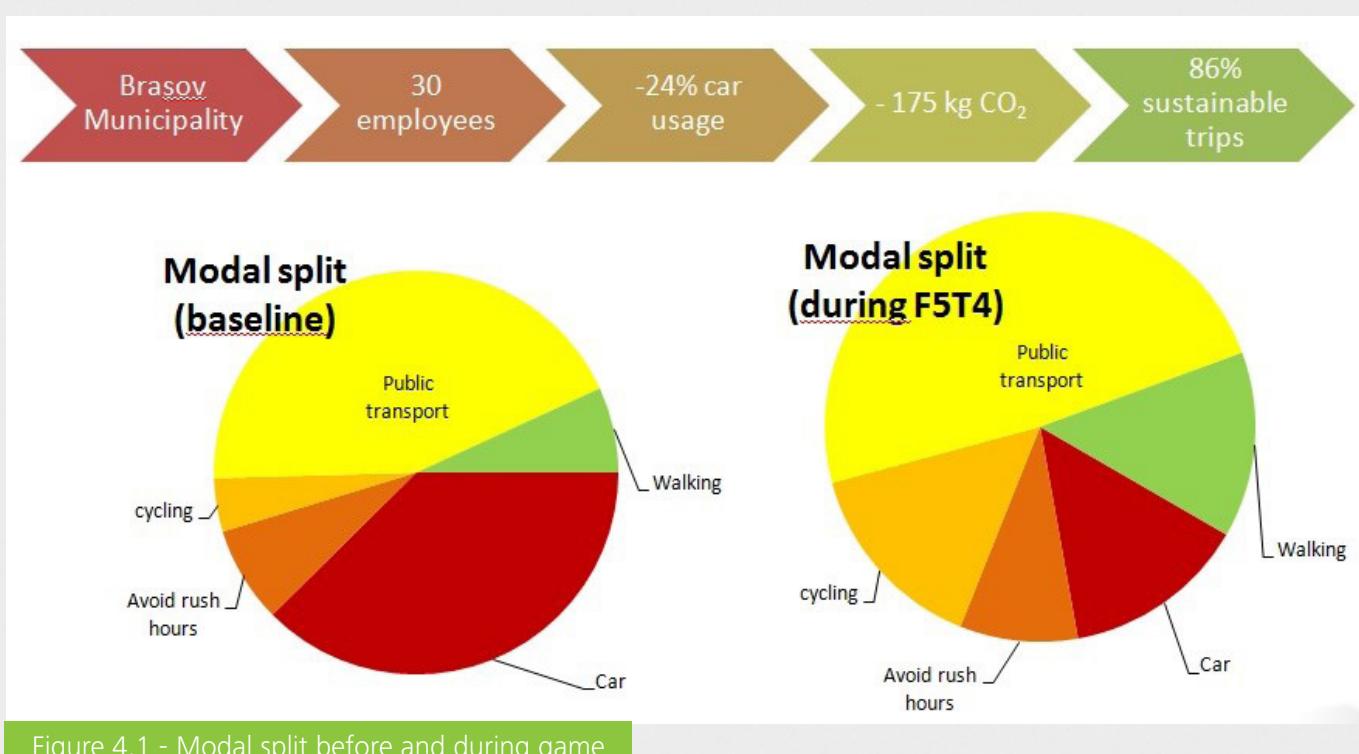


Figure 4.1 - Modal split before and during game

## United Kingdom

- All the organisations that showed an interest in the game were provided with a trial / test account to explore the game's website in more detail and check it was suitable for their needs. Following the trial period, none of the organisations decided to proceed with actually playing the game for real.
- The implementation benefits we thought would be appealing to companies – ie. ability to capture travel plan

data, Greenhouse Gas Emissions reporting data, team bonding etc - have not been strong enough incentives to turn trials into actual playing periods.

- Feedback from organisations has included: this is too much effort; the results are not accurate; there are no alternatives to travelling to this workplace; I don't have time to fill in tables etc.

## Bulgaria

- **Jewel Company** is the F5T4 winner in Bulgaria with a total decrease of 40% of the CO2 emission produced by the 24 employees. Their rapid involvement in the game proved them one of the most ambitious and motivated teams – they achieved 33% modal shift towards bicycle, carpool, and walking. They uncovered their desire for active life and pleasurable travel through F5T4.
- **Sofia Mobility Center** has the silver medal in the Bulgarian F5T4 competition. Their busy lifestyle in the capital city of Sofia did not prevent them from changing their behaviour and achieving 20% decrease of the CO2 emissions. Over 60% of the participants changed their behaviour to public transport and 40% to walking.
- **Uzana EcoFestival 2014/2015** showed the full potential for application of F5T4 in open air events and its potential to join with other green initiatives. The festival used F5T4 to organize a competition for its 130 participants in 2014 and 2015 in order to raise awareness on the topics of sustainable travel and active lifestyle. Awards were given to the winners during a ceremony at the festival village.

## Belgium

- **Joker** (95 players) is a travel agency for adventurous travelling which holds offices throughout Flanders. In F5T4 they saw an opportunity to boost team spirit across the various office teams and to be frontrunner in becoming the most sustainable employer of Flanders. Commitment from the management was strong and this lead to good results.
- **Floordam** (48) is a nursery home for elderly citizens which used F5T4 to boost active travel amongst their employees. Their commitment to F5T4 stemmed from a strong motivation to combat obesity and to promote healthy lifestyles in the company. Although F5T4 is mostly an online campaign, the implementation in Floordam required a lot of offline incentives because of the fact that most of the nurses don't have access to computers on a daily basis. Thanks to a creative and fun approach these employees were very much involved in the game and achieved a fantastic result.
- **IN-Z** (101) is a social economy enterprise and delivers cleaning and domestic services in Flanders. IN-Z has a strong overall interest in sustainable mobility and used F5T4 to promote sustainable travel to its middle management. F5T4 proved to be an interesting tool to gather data and provided a solid base for their comprehensive mobility plan.



## 5. FROM5TO4 REALLY WORKS!

The screenshot shows the 'My Mobi' section of the FROM5TO4 website. At the top, there's a navigation bar with links: Dashboard, Leader board, Stats, My Mobi (which is highlighted in green), Team manager, and Help. To the right of the navigation is a user profile box for 'Nigel Clark' showing 'PROGRESS 50%' and 'POINTS 104'. A 'Level' indicator shows '2' and a 'Sign out' button.

The main area is titled 'My Mobi' and contains a large image of a green, stylized cartoon character named 'Mobi'. Below the image are two rows of customization options:

- Heads:** A row of four different head icons, each with a unique hairstyle and facial expression.
- Bodies:** A row of four different body icons, each with a unique outfit and accessories.

Below these rows is a 'Save' button. To the right of the customization area is a 'Personal profile' sidebar containing the following information:

- First name: Nigel
- Last name: Clark
- Username: clark
- Postcode/Address: 3011 AB Rotterdam, Nederland
- Estimated miles to work: 23.4
- E-mail address: erwin@organiq.nl

At the bottom right of the sidebar is a 'Change password' link.

Screenshot of Mobi's avatar page



# 5. FROM 5TO4 REALLY WORKS!

## 5.1 Headline results

From the results of the game in terms of modal split and change in kilometres in each mode of transport, it is possible to estimate the changes in terms of energy and emissions, as well as health.

- On average, 200 g of CO<sub>2</sub> have been saved per trip<sup>1</sup>
- On average, 51 kg of CO<sub>2</sub> have been saved per week
- The MOBI games have so far saved **14.7 tons of CO<sub>2</sub> emissions**
- The MOBI games have so far saved **5.5 toe<sup>2</sup>**
- The average CO<sub>2</sub> and energy savings have been **27%**
- On average the weekly additional calories burned per game is of 1916 calories;<sup>3</sup>
- This represents an increase in calories burned of 24% from walking and cycling.

### Engaging and motivating players

Over 900 employees across 30 organisations around Europe have played the game, filling in nearly 75000 trips. **The game is successful in keeping the players engaged**, with over 64% of them filling in more than 80% of the days. Each player registered their trips 4.4 days/week on average.

The main motives for employees to join the game were the will to improve the environment and to improve their health and fitness, as well as contributing to the goals of the organisation.

The main aspects that kept them motivated were the interaction with colleagues, the challenge of self improvement and the friendly competition between teams. Overall players were quite satisfied with the game, with 91% of them stating they would recommend the challenge to others.



Figure 5.1 Break down participation

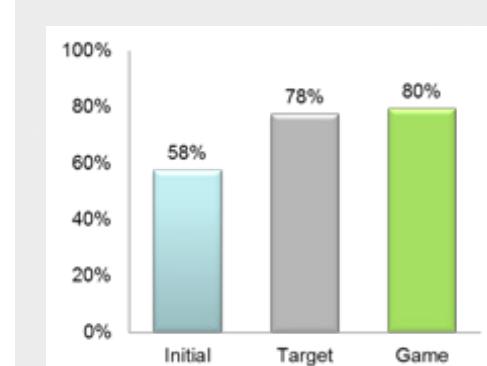


Figure 5.2 Modal split all companies

1. The following specific emission factors (g/km) were considered: car – 172; carpooling – 86; motorcycle – 74; scooter – 37.
2. The following consumptions (TOE/km) were considered: car – 6.4x10<sup>-5</sup>; carpooling – 3.2x10<sup>-5</sup>; motorcycle – 2.7x10<sup>-5</sup>; scooter – 1.4x10<sup>-5</sup>.
3. The following calorie burning per kilometer (calorie/km) were considered: cycling - 27.39; walking - 50.6

## Behaviour change

In terms of behaviour change the results have been incredibly positive: the usage of sustainable modes has increased from 58% to 80%, actually exceeding the 20% increase goal.

About 57% of the players significantly increased the utilisation of a sustainable form of mobility.

Distance wise, the modal share of private car reduced from 65% to 42%, and motorcycle from 5% to 1%. The modal option with a higher increase was carpooling, going from 5% to 16%. This mode, despite not having the same level of benefits as cycling or walking, effectively reduces the number of cars circulating, while providing an opportunity to socialise with the co-workers.

The use of public transport also increased significantly, from 19% to 28%. Finally, walking and cycling increased, respectively, from 2% and 4% to 4% and 8%, representing an increase of 24% of calories burnt.

## Long-term effects

From5To4 also proved to have effects even beyond the duration of the game, since it contributed to change the players' opinion about the various modes of transport throughout the game.

In the questionnaire sent to 250 players over one month after the end of the game show, 39% of the respondents stated that their opinion on cycling had improved, and 43% stated they were more likely to use this mode in the future.

49% of respondents said their opinion on walking had improved and were more likely to use this mode in the future. Carpooling also became more highly regarded, with 38% of the respondents improving their opinion and 28% stating they would use it in the future. Contrary to this tendency, the opinion on car got worse for 18% of the respondents.



Figure 5.3 Calories burnt during game (walking + cycling)

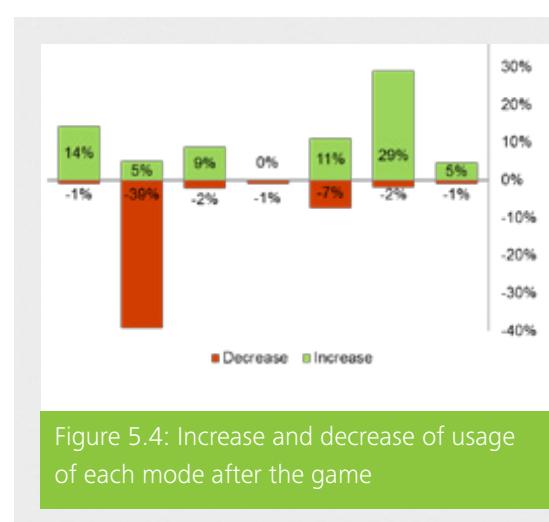


Figure 5.4: Increase and decrease of usage of each mode after the game

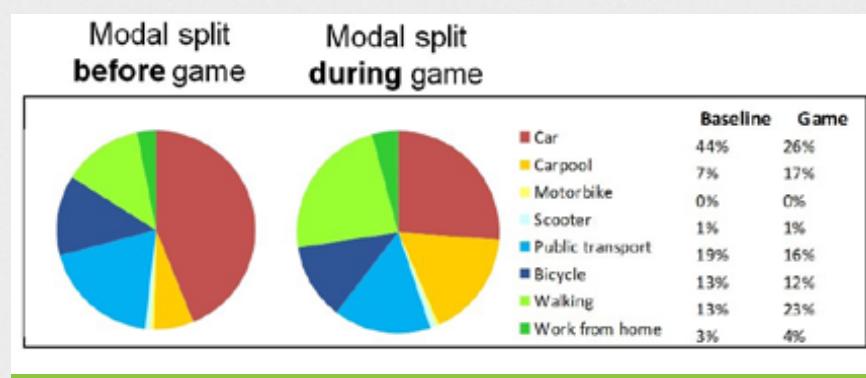


Figure 5.5: Average modal split (baseline and average during game)

## 5.2 Factors of success

From5To4 has been played by different organisations, in different contexts, with different goals, thus providing the opportunity to identify different factors of success. Some highlights are presented below.

### From5To4 works in very different contexts

From5To4 had positive results with every organisation that has played the game, independently of the baseline modal split. There have been observable behaviour changes in companies with high car use and in companies with a high use of sustainable modes.

### From5To4 effects go beyond commuting trips

50 employees of DTV Consultants & Organiq New Media (NL) played the game for a period of 4 months. Employees reported a change of behaviour in their commuting trips but also in terms of business travel.

### From5To4 works even offline

Most of the 30 employees of Floordam (BE) did not have an easy access to computers. While it implied extra work from the organisers, this experience shows that the game also works offline.

### From5To4 can bring a company together

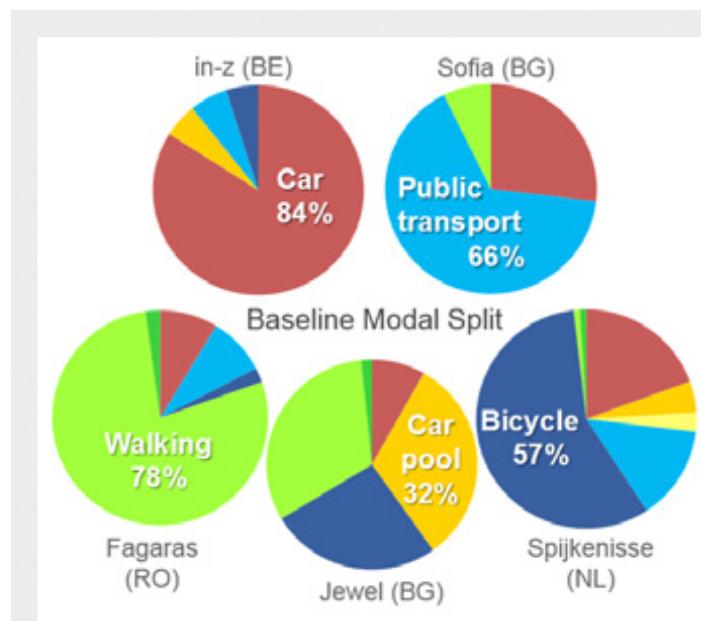
24 employees of Jewel (BG) participated in the game during a three month period. The company was glad to participate, as they felt the game made employees happier and proud of their community.

### From5To4 can complement other mobility measures

Nokia (PT) used the game to boost the use of recently built facilities such as showers and parking for bikes, as well as a carpooling service for employees.

### From5To4 helps setting the example

Several local authorities have played the game: Sofia (BG), Brasov, Bistrita & Fagaras (RO), Spijkenisse (NL), Lisbon & Braga (PT). Their main motivation was to set the example to other organisations and companies.



## High competition makes demanding players

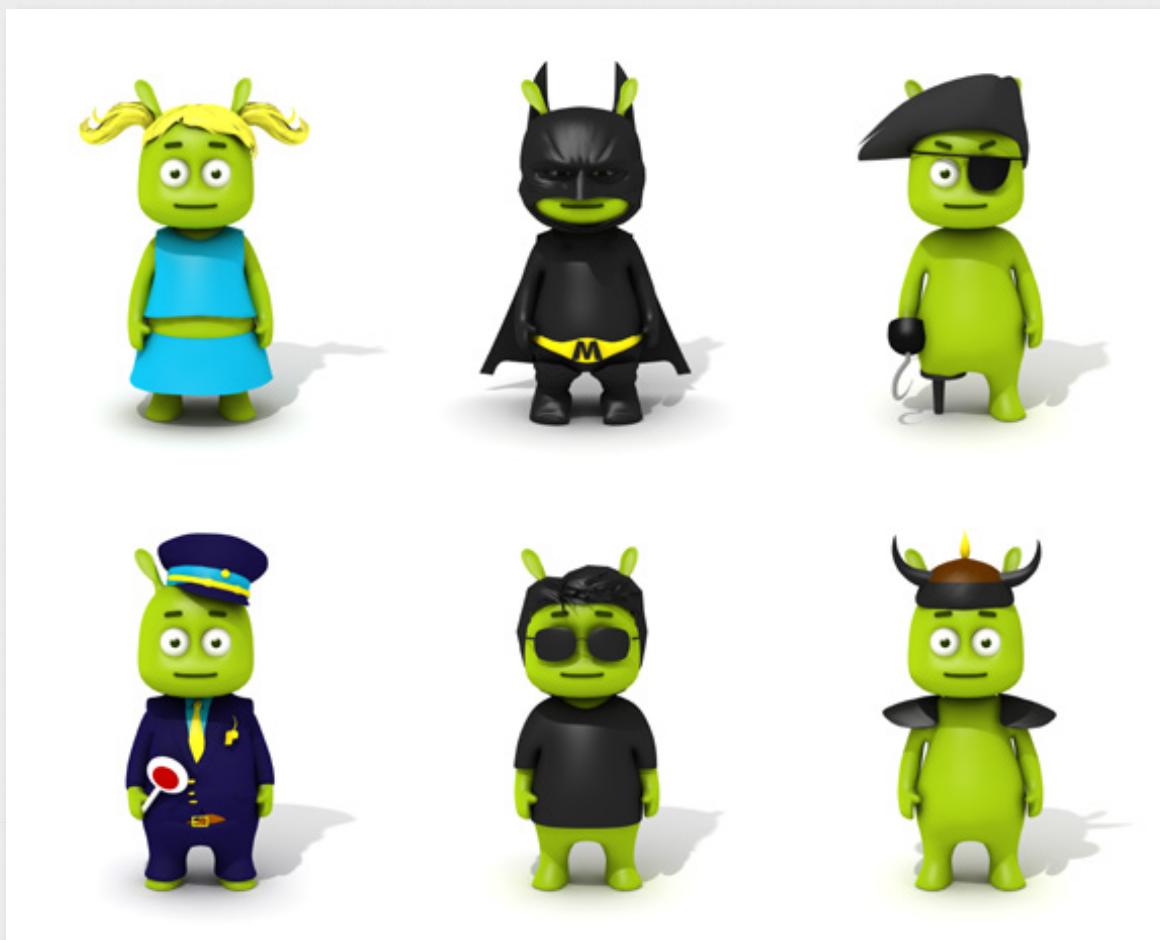
At Siemens (RO), the teams were highly competitive, leading to a very high participation rate and an increase of 45% in the usage of sustainable modes. The high level of competition led to complaints over the uneven dimension of the teams.

## Enthusiasm is essential

45 employees of ANA (PT) played the four month game. The F5T4 champions within the company were very enthusiastic and were able to motivate the employees. There was an improvement rate of 42%.

## Everybody loves Mobi!

Players never forget to personalise their Mobi avatar, and most players refer to little Mobi as one of the main motivators to keep playing and act sustainably.



## 6. LESSONS LEARNED ON IMPLEMENTING MOBI



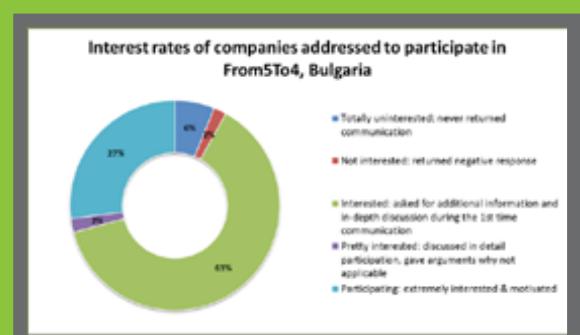
## 6. LESSONS LEARNED ON IMPLEMENTING MOBI

This section highlights some main lessons and challenges from the 3-year MOBI project. They are clustered around the four different phases of From5To4: recruitment / first contact with organisations; the game preparation phase; playing the Game; and evaluation of From5To4.

The experience from the six project partners after dozens of presentations and meetings with potential players is that there is not one approach that fits all: companies have an interest, or lack thereof, in From5To4 for very distinct reasons. A summary of these can be found at the bottom of this chapter.

### Recruitment / first contact with organisations

- The biggest challenge From5To4 faces is engaging organisations to play: only about 10% of all contacted organisations decided to follow through. These numbers can be improved by targeting the right companies and suiting the approach to their goals and needs.
- The idea of gamification to change behaviour and the general “look & feel” of MOBI and F5T4 is generally very well received. The innovative character and graphical design is liked. It also opens doors for further discussion about sustainable mobility.
- It is key to quickly identify the correct contact person within an organisation. Having contacts with many different people who cannot not make final decisions makes the recruitment process very lengthy – sometimes even over 6 months. In many organisations it seems to be unclear who is responsible for this type of mobility management activities. Finding an enthusiastic “door-opener” makes the process much easier and faster.
- Try to understand the needs and concerns of the organization and the staff before approaching them. Making their specific benefits clear from the start. Focus on companies with high social responsibility and human resource concerns.
- Awards and recognition are essential parts of the motivation to participate and keep playing. The awards need to be clear from the start; people should be able to monitor their progress easily; the game’s excitement should be raised by smart and funny quotes by the Mobi avatar.
- Large companies are sometimes already providing transport options to their employees, like company buses or train tickets (in some countries they are obliged to do so). This makes it very difficult to convince the organisation as well as the employees (of the need) to change commuter habits.
- NGOs and organisations with a focus on environment, energy or sports are often very interested in the campaign. They are open-minded and willing to experiment. Many of these organisations are already active in sustainable transport – which can be a barrier - and have a higher awareness of it – which can be a driver. The main barrier here is that they are often quite small in size and without a strong management which can make top-down decisions on the game.
- Participants are employees with access to computer and internet at work, which narrows the pool of players and the type of organisations (white-collar rather than blue-collar).



## The game preparation phase

- Collecting the email addresses of the players is generally a straightforward and smooth process, especially because the main communication channels of the participating organisation can be used.
- Try to engage the management into playing, as their commitment is very important. They do not always want to be included, whereas it would be very useful for the credibility and for the competition element if they are willing to set an example.
- Administrative actions like moving a person from one team to another or checking if registration emails were sent and resending in case of typing errors cost much time to the organisation managing the back-end of the game.
- Information the purpose and goals of the game need to be easily accessible to the players in order to raise enthusiasm. Once there is enthusiasm, the momentum is kept by the competition element and by the liveliness of the platform, with motivating quotes and information from the Mobi avatar, communication between the players etc. If participants perceive the game as only filling-in their data, they lose their interest quickly.
- The Frequently Asked Questions list should be sent to players in advance, in order to avoid many questions coming in after the start of the game.

## Playing the Game

- Organizations need to be motivated to carry out parallel activities during the game, which will raise the interest in From5To4. For example material prizes, a final awards event, training, doing specific activities like a breakfast for cyclists or incentivizing players to share their positive experiences travelling to work. The organisation should be offered a list of suggestions. In order to have a 6 months implementation period there is need for reinforcement or else players will lose interest.
- The contact person, the “MOBI Champion”, is very important. There can be more than one. This person(s) is needed to stimulate players to fill in their data, make some noise about the game and provide articles or photos.
- Feedback during the game gives the players a boost. Be prepared to submit intermediate reports to the company about ongoing results. Send comments and suggestions based on these results.
- Prevent that the tool operates as a black box. It needs to be clear when players get points or how the progress is calculated. The tool needs to be completely functional, error-free and fool-proof from the start.



## Evaluation of From5To4

- The data generated by the game offers good information for a basic on-the-spot evaluation and companies perceive it as very useful. For more in-depth evaluation we need to look at the before and after-study. Often companies have detailed additional questions that are not automatically generated.
- Evaluation is difficult when there are gaps in the data (when people filled out only a limited number of their trips). Interpretation of the data should be done by an experienced partner.

*Feedback from companies: organizations want to play F5T4 because:*



*Feedback from companies: organizations don't want to play F5T4 because:*

- It's not 'urgent' for their business;
- They already operate transport services for their employees;
- They are not required to have transport plan;
- 6 months implementation period is too long;
- Not all employees have access to computer/internet;
- No budget for incentives/prizes for employees to stimulate playing.



## 7. CONCLUSIONS AND KEY FINDINGS

The screenshot shows the MOBI platform's team manager interface. At the top, there's a header with the logo 'FROM5TO4 The mobility game' and user information for 'Nigel Clark' (Progress 50%, Points 104, Level 2). Below the header is a navigation bar with links: Dashboard, Leader board, Stats, My Mobi, Team manager (which is highlighted in blue), and Help.

The main content area is titled 'Team manager - Team transport-monitoring' and specifies 'Game week 16'. It shows a section for 'Jethro Punter' with the message 'No data found.'

For 'Nigel Clark', the interface displays a table of weekly transport data:

Day	Date	Distance (mi)	Vehicle icon	Comment/Remark (Showed only to teammate when it's not approved)
Monday	2016-04-18	(23.4 mi)		<input type="text"/>
Tuesday	2016-04-19	(23.4 mi)		<input type="text"/>
Wednesday	2016-04-20	(23.4 mi)		<input type="text"/>
Thursday	2016-04-21	(23.4 mi)		<input type="text"/>
Friday	2016-04-22	(23.4 mi)		<input type="text"/> <input type="checkbox"/> Disapprove

At the bottom right of the main content area are 'Submit' and 'Cancel' buttons.

A caption at the bottom left of the screenshot reads: 'Screenshot of Mobi's teammanager page'

## 7. CONCLUSIONS AND KEY FINDINGS

Introducing gamification in the field of mobility by the MOBI project has been a successful adventure of 6 implementation countries, 3 follower countries and inspirational for other countries – in and outside Europe - as to promote smart commuting among employees at companies. A few final conclusions and recommendations are presented in this chapter.

### Recruitment, carrot we have, stick needed?

Recruitment is not easy but there are several functional areas of the organization that might be interested in applying the game – corporate social responsibility, human resources, health, infrastructure & mobility. If an area isn't very interested in the beginning, it is worth trying another. Local sustainable mobility 'activists' may be help to help with the best approach. Companies are more receptive to carrying out this kind of measure under two conditions: they already perceive sustainable mobility as an issue for them and they have already taken measures before to improve sustainable mobility that they would like to make more effective. Companies that haven't taken this kind of measures tend not to feel credited enough to ask employees to change behaviour, but this may be an opportunity to make them start those measures.

### Competition main driver MOBI

Although MOBI relates to multiple changing behaviour schemes or interventions, the competition element seems to be the main driver looking at the feedback from participants in different countries. Competition on multiple levels, competing with yourselves, team, company or even country. It gives participants a peer group to discuss their experience with, which is a highly motivating factor. Gaming is an effective approach in capturing the attention of companies in relation to corporate mobility and the advantages of addressing it from a sustainability perspective. This does not always mean that they will adopt the approach, but it is a good visiting card to start a conversation and maybe to trigger other types of sustainable mobility initiatives.

### Continuous tool development

A continued development of the tool is required. After the initial development of the tool and the first experiences new requirements, valuable functionalities and ideas have popped up. Also a continued developing process opens up more possibilities. The project has been a cooperation between traffic & transport experts, IT specialists and game developers. Involvement of a stronger marketing focus might have had a better result in connecting to intermediate organisations.

### Different strategies possible, best experiences with 'top down'

We learned it is better if the top management decides from the very beginning how many employees will play the game, by appointing them directly. Personal contact works best when recruiting companies. It is important to have the first contact with the organization facilitated by a person that shows a real support and interest to the idea of the project (e.g. a door opener). Because the tool is relatively new the period between the first contact and the actual contract is on average 6 months. However this could also take up to a year or more. To make the game dynamic and participated by the highest possible number of employees, it is important to accompany it with other side initiatives that bring life to the game and the issue of sustainable mobility, like prizes, events, training, social media initiatives.





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Asociația "Agenția pentru Managementul Energiei și Protecția Mediului" Brașov



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