USING PHYSICAL ACTIVITY CHALLENGES TO INCREASE SUSTAINABLE COMMUTING

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Abstract
Smarter Travel Workplaces and Smarter Travel Campus are voluntary programmes to promote more sustainable and active travel, as part of a travel plan.

Over 120 of the largest employers in the state are engaged in the programme. This includes all of the Irish universities and Institutes of Technology, and a mix of public and private employers comprising hospitals, local authorities, Irish and multi-national enterprises.

Partners of the programme sign a Charter at the most senior level within the organisation committing to undertaking baseline/monitoring travel surveys, implementing actions to promote more sustainable travel, and allocating personnel and financial resources to their plan. The quantum of investment is not stated, as this will depend on the organisation’s available resources, and the problem they are looking to solve.

While some Partners come to the programme through the planning process, more and more employers are looking at sustainable travel as a way to help them achieve employee wellbeing targets – including stress management, team building, and increasing physical activity.

One of the key tools of engagement of the STW/STC programme is the Partner Challenges – which are designed as fun events to engage employees in walking and cycling promotions within their workplaces.

The Challenges draw on good practice in the areas of health promotion, community based social marketing and travel planning.

This presentation will summarise:

- the impact of the Pedometer Challenge for workplaces in terms of walking for leisure and on the commute. Year on year the challenge has increased the number of people walking on the commute, and more importantly, the number of drivers switching from car to ‘on foot’ for the commute.
- the programme cycling challenges – which again converted other mode users to cycling on the commute, but which has recently evolved from a ‘behaviour trial’ approach to partaking in the European Cycling Challenge. This event will take place in May 2016 – feedback from the event will be presented.
Background: Smarter Travel Workplaces and Campus Programmes

Smarter Travel Workplaces and Smarter Travel Campus are voluntary programmes to promote more sustainable and active travel, as part of a travel plan. These programmes are administered by the National Transport Authority on behalf of the Department of Transport Tourism and Sport.

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While some Partners come to the programme through the planning process, more and more employers are looking at sustainable travel as a way to help them achieve employee wellbeing targets – including stress management, team building, and increasing physical activity.

The other Authority paper on behaviour change for ITRN 2016, ‘Using Workplace/ Campus Travel Plan Programmes to Change Transport Behaviour’, gives more detail on the theories underpinning the programme, and how these theories are applied in practice.

This paper will focus on the one of the key tools of engagement of the STW/STC programme: the all-Partner Walking and Cycling Challenges. In particular, this paper will cover:

- The purpose and value of challenge, and theory of gamification;
- An assessment of the Smarter Travel Pedometer Challenge;
- A comparison of Cycle Challenge approaches and the need for continued innovation; and
- The shared role that Partner Workplaces can play in ‘enabling’ new participation and trialling.

The Challenges in context

In 2011, the national average for walking on the commute was 10%, and figures from the 2006 Census showed that around 45,000 people drove less than 2km to work, with a further 160,000 people driving between 2 to 4km to work. This suggests an under-tapped opportunity to encourage at least some of those driving these short distances, to consider a more active alternative.

In terms of physical activity and health, The National Guidelines on physical activity recommend that adults take at least 30 minutes a day of moderate activity, 5 days a week (or 150 minutes a week)\(^1\). However, the National Survey of Lifestyles Attitudes and Nutrition (SLÁN 2007) showed that only 41% of Irish adults took part in moderate or strenuous physical activity for at least twenty minutes, three or more times a week\(^2\).

The Walking and Cycling Challenges are behavioural change initiatives that attempt to act as a stimulus to encourage more active travel (walking and cycling) on the commute. Often

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awareness of the health and other benefits of an active travel choice are not enough to trigger a change in behaviour.

The default choice is often too compelling, some additional trigger or disruption in our day to day lives may be required. The Smarter Travel Challenges can for some offer just such a trigger.

The Challenges therefore directly support Smarter Travel Plan objectives of promoting more sustainable travel amongst Partner Workplaces. Staff participation in the Smarter Travel Challenges can also support wider corporate objectives around team-building and employee wellbeing.

The Participant and Coordinator surveys following the Challenges illustrate the many benefits also felt by the staff, with staff health and wellbeing and team participation featuring significantly year on year. The table below with related results from the 2015 Pedometer Challenge illustrates its value.

Table 1 Reasons for participating in, and perceived benefits from the 2015 Pedometer Challenge

<table>
<thead>
<tr>
<th>Main reasons for participating in the Challenge (from Participants Survey)</th>
<th>Main benefits gained from the Pedometer Challenge (from Participants Survey)</th>
<th>Coordinators’ perception of main benefits to staff (from Coordinators Survey)</th>
</tr>
</thead>
</table>
| Fitness/ Exercise (74%)  
- For enjoyment (50%)  
- Organised by my work (41%)  
- To support my colleagues (40%)  
- For health reasons (26%)  
- Support Irish Heart Foundation (17%)  
- Colleagues persuaded me! (14%)  
- To lose weight (13%)  
- To win prizes (7%)  
- To reduce my carbon footprint (6%) | Being part of a team (72%)  
- Increased activity (65%)  
- Increased fitness (55%)  
- Feeling good (53%)  
- Boost in staff morale (49%)  
- Reduced stress (20%)  
- Making new friends (16%)  
- Weight loss (13%)  
- Did not benefit (3%) | Good for team spirit/team building (97%)  
- Raised awareness of activity levels (95%)  
- Boosted staff morale (85%)  
- Encouraged people to walk to work (83%);  
- Supported by Management (100%) |

In terms of health, it has been found that those who persistently participate in active commuting are more likely to engage in higher levels of physical activity. Research also indicates that individuals are more likely to execute rather than neglect their intentions if they actively express their plans on more than one occasion, a challenge is a means of doing this, given further support for the annual nature of the challenge interventions.

The Approach to Smarter Travel Challenges

The Challenges draw on good practice in the areas of health promotion, community based social marketing and travel planning. They also draw on a ‘gamification’ approach. The theory behind ‘gamification’ is that the novelty of the game approach adds a fun and impulsive dimension to an activity, encouraging curiosity and trial, which can ultimately stimulate behavioural change.

Like any game, need to both be able to participate, and to feel the success from trialling the new behaviour; this is one of the biggest motivators. The Smarter Travel Challenges therefore need to be

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3 Xiaolin Yang et al, Active commuting from youth to adulthood and as a predictor of physical activity in early midlife: The Young Finns Study, Preventive Medicine, 2013, In Press.


Gamification is the concept of applying game mechanics and game design techniques to engage and motivate people to achieve their goals. Gamification taps into the basic desires and needs of the users’ impulses which revolve around the idea of Status and Achievement.

relevant and doable with achievable goals. The timing of the Challenges is also important in that they need to connect with "life routines", which again makes the activity easier to do.

The timing of the Step Challenge in early September coincides complimentarily with other life disruptive yearly events e.g. back to school/college and the summer's end, while the Cycle Challenge in early May coincides with longer evenings, and improving weather conditions that are more conducive to cycling. The potential for improved health and wellbeing and team participation are two of the main benefits offered by the Challenges that draw participants.

The Challenge design pays attention to the theories discussed in the previous Smarter Travel paper, 'Using Workplace/ Campus Travel Plan Programmes to Change Transport Behaviour'. The paper referenced the UK MINDSPACE research, which neatly brings together key elements of the main behavioural change theories referenced in transport. If we look at the critical design elements of the Smarter Travel Challenges, it is evident that they engender the core components of the Mindspace behaviour change theory as illustrated in Table 2 below.

<table>
<thead>
<tr>
<th>Mindspace theory</th>
<th>Design Elements of the Smarter Travel Challenges</th>
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<tbody>
<tr>
<td>M – Messenger – appropriate messenger for target audience</td>
<td>The partner coordinator is responsible for internal promotion with demonstrable management support encouraged</td>
</tr>
<tr>
<td>I – incentives</td>
<td>The challenge is an incentive in its own right. Prizes offered during, and at the end of the challenge for a range of achievable and fun goals help sustain motivation</td>
</tr>
<tr>
<td>N – Norms – we are strongly influenced by what others do</td>
<td>Participation in the challenge, related promotion and story telling (encouraged with prizes) increase modal visibility</td>
</tr>
<tr>
<td>D – Defaults – we tend to stick with defaults than seek alternatives</td>
<td>The nature and longevity of the challenge can disrupt the usual default mode and support trialling alternatives</td>
</tr>
<tr>
<td>S – Salience – our attention is drawn to what is novel and relevant</td>
<td>The challenge provides a sense of novelty, management support, health value, timing etc. help make it relevant</td>
</tr>
<tr>
<td>P – Priming – our acts are often influenced by sub-conscious cues</td>
<td>Posters, a range of timed staff communications as well as complimentary events prime staff, as do supportive facilities (e.g. showers, cycle parking, lockers etc.)</td>
</tr>
<tr>
<td>A – Affect – our emotional associations can powerfully shape our actions</td>
<td>Enthusiasm and celebration in Challenge communication before, during and after the challenges, team effect, prizes</td>
</tr>
<tr>
<td>C – Commitment – we like to be consistent with our public promises</td>
<td>Partners sign up to (and commit) to a challenge in advance; staff also sign up (and commit), and by joining a team, make a promise to commit to the challenge</td>
</tr>
<tr>
<td>E – Ego – we act in ways that make us feel better about ourselves</td>
<td>The health and wellbeing, as well as team engagement during the challenges support positive reinforcement</td>
</tr>
</tbody>
</table>

What's the Evidence that the Smarter Travel Challenges have any effect?
Post-Challenge surveys are carried out after every Challenge, with a separate survey for both participants and coordinators, each seeking their relevant feedback. This is considered an essential part of the Smarter Travel programme both for monitoring overall progress, and taking stock of where things are at on a regular basis. Monitoring of results and evaluation of feedback received helps us measure success, identify issues and learn from mistakes.

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As with any intervention, it’s also vital that the Challenges are responsive to external environmental factors and in touch with participants’ requirements and expectations. Evaluating participant feedback is essential in this regard, and helped us to identify that:

1. The Smarter Travel backend database was becoming insufficient to manage the growing data requirements; and
2. The Active Travel Logger previously in place was at risk of being perceived as obsolete.

Taking this on board, a new and improved active travel logger, with a responsive user friendly app was recommended. As this paper is being written, the new updated versions are being tested, which will allow for greater future capacity and further innovation in Challenges.

The subsections that follow are a brief discussion and evaluation of the Walking and Cycling Challenges.

**The Step Challenge (formerly called the Pedometer Challenge)**

The Step Challenge is a fun and free annual event for NTA’s Smarter Travel Workplace partners. With the support of the NTA Smarter Travel Team, participating partners set up teams of 3-6 people, and get people walking for 4 weeks (considered just long enough to support new habit-forming). The 2016 Step Challenge will run from the 12th September until 9th October.

The Step Challenge as a behavioural change intervention has recorded consistent changes in favour of walking since the Challenge began in 2008, notably in encouraging commuters to switch from other/inactive modes to walking. Year on year, the proportion of participants reporting walking on the commute is significantly above the national average, and increases over the course of the event, with intention to walk post-event significantly higher than the starting point. Data from the 2015 challenge found that:

- **5,083** people participated from **51** workplaces took **1.6 Billion Steps**.
- **Before the Challenge** - 13% of survey respondents walked to work and 51% drove
- **During the Challenge** – respondents walking to work on a regular basis increased from 13% to 31% and a further 12% walked to work on an occasional/one-off basis
- **Following the Challenge** - 26% of respondents said that they intend to walk to work on a regular basis. A further 20% said that they planned to walk to work on an occasional/one-off basis

A third of respondents to the 2015 Evaluation survey had also taken part in a previous Pedometer Challenge, and of this cohort, 26% said that they continued to walk to work on a regular basis after the Challenge ended, and 15% continued to walk on an occasional basis. By contrast, only 13% of those hadn’t taken part in a Challenge previously, walked to work before the Challenge. This is in spite of no further engagement with participants from one year to the next, and is further evidence of the value of the Challenge in terms of sustained behaviour change.

**The Cycle Challenge**

Like the Step Challenge, the Cycle Challenge is similarly designed to be a fun, free team event promoting more sustainable travel, and in this case takes place every year during the month of May.

In 2016, the Cycle Challenge was in the form of The European Cycling Challenge, an urban cyclists’ team competition. This was a departure from the usual Smarter Travel Workplaces Cycle Challenge, to allow for the development of the aforementioned new Active Travel Logger and new app. It also gave us the opportunity to trial a new Challenge format, which could provide new insights.

In keeping with our previous Cycle Challenges, this Challenge promoted cycling as a sustainable transport choice, and while it was centrally organised by the Public Transport Authority of Bologna (SRM), it was locally managed and promoted by the NTA Smarter Travel team and workplace coordinators.
However, there were also some notable differences. While the previous Smarter Travel Cycle Challenges are team based and have an all-Ireland format (run in association with Travel Wise Northern Ireland), the European Cycling Challenge has a more individual slant: the participating city signs up for the Challenge, and individuals then sign up and join their city team, and can also opt to join a (workplace) sub-team. Dublin and Limerick were two of the 52 European Cities that took part this year, and it was open to everyone (not just Partner Workplace employees) in these cities.

The European Cycling Challenge ran for the entirety of May, when over 1,000 Dubliners cycled over 108,000kms to come a very respectable 13th place. As the European Cycling Challenge was not exclusive for the Smarter Travel Workplace Partners, it engaged a wider audience within Dublin, and successfully attracted more people to participate than the usual Smarter Travel Workplaces Cycle Challenge despite the smaller target area covered (Dublin vs all Ireland). However, it didn’t provide any real incentive to target new cyclists directly, and perhaps as a result, also attracted a higher proportion of existing active cyclists to participate. In the follow up participants’ survey carried out by the NTA Smarter Travel Team:

- 6% of participants said that they were first time cyclist;
- 13% of participants said that they were occasional cyclists; and
- 81% of participants said that they were regular cyclists.

More positively, the survey found that the European Cycling Challenge also has a positive effect in increasing the numbers cycling to work:

- 73% said that they usually cycled to work before the challenge; and
- after the challenge, 87% said that they planned to cycle to work.

To compare further the impact of the European Cycling Challenge to more usual Smarter Travel Workplaces Cycle Challenge, we looked at the data from 2015 Smarter Travel Workplaces Cycle Challenge, which is very similar to the data from previous Smarter Travel Cycle Challenges, and therefore considered to be representative. During the 2015 Cycle Challenge 800 employees formed 186 teams from 52 workplaces (seven of which were TravelWise NI Workplaces).

It is somewhat reassuring to note that here, almost a third, or 32% of participants, considered themselves to be ‘new cyclists’ (defined as not having cycled for at least the previous six months); while 44% of participants said that they were already cycling to work. There are three factors that are likely to play a role here:

1. The rule that every team must have one new cyclist (defined as not having cycled for the past six months);
2. Prizes specifically for new cyclists; and
3. A possible team effect, and its formation, which may give new cyclists a feeling of support, and a greater sense of ‘Ability’. This is discussed further below.

Survey response data following the 2015 Cycle Challenge also found that:

- 90% of participants committed to continuing to cycle to work on a regular/occasional basis;
- 65% said the Challenge increased awareness of their activity level; and
- 85% of those that had also taken part in a previous Challenge had continued to cycle to work after the Challenge.

The above data is strong indication that like the previous Walking Challenges, Cycle Challenges support more sustainable/active travel choices. Furthermore, 94% of participants said that they were active for at least 30 minutes five or more days of the week (against the national average of just 25% of adults meeting the relevant National Physical Activity Guidelines).

And the Challenge seems to be appreciated by those that take part too: 98.5% of participants reported that they enjoyed the Challenge.
Figures 1 and 2 below show, respectively, the reasons participants gave for taking part, and the main benefits reported. What is revealing is the social influence of the Challenge, suggestive of the benefits of the team structure:

- 52% of participants said that the main reason for participating was to support their colleagues, and
- 71% of participants said that the main benefit from doing the Challenge was being part of a team

This compares to the European Cycling Challenge where the main reason stated for participating (by 52% of participants) was ‘enjoyment’. However the main benefit stated for participating (by 52% of participants) was also being part of a team, this was despite the Challenge having a lesser emphasis on the team element.

**Figure 1. Main reasons for participating in the 2015 Smarter Workplaces Cycle Challenge**

<table>
<thead>
<tr>
<th>Reason</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>To support my colleagues</td>
<td>51.9%</td>
</tr>
<tr>
<td>For enjoyment</td>
<td>42.0%</td>
</tr>
<tr>
<td>Fitness/Exercise</td>
<td>42.7%</td>
</tr>
<tr>
<td>It was organised by my workplace</td>
<td>26.0%</td>
</tr>
<tr>
<td>I want to use my bike more often</td>
<td>32.1%</td>
</tr>
<tr>
<td>To reduce my carbon footprint</td>
<td>12.2%</td>
</tr>
<tr>
<td>To lose weight</td>
<td>9.9%</td>
</tr>
<tr>
<td>Other</td>
<td>2.3%</td>
</tr>
</tbody>
</table>

**Figure 2 Main benefits reported from doing the 2015 Smarter Workplaces Cycle Challenge**

<table>
<thead>
<tr>
<th>Benefit</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Increased fitness/took more exercise</td>
<td>52.3%</td>
</tr>
<tr>
<td>Feeling good about myself</td>
<td>46.9%</td>
</tr>
<tr>
<td>Enjoyed being part of a team</td>
<td>71.1%</td>
</tr>
<tr>
<td>Reduced stress</td>
<td>22.7%</td>
</tr>
<tr>
<td>Lost weight</td>
<td>10.9%</td>
</tr>
<tr>
<td>Environmental benefits/reduced carbon...</td>
<td>35.9%</td>
</tr>
<tr>
<td>Did not benefit</td>
<td>3.9%</td>
</tr>
</tbody>
</table>
A final thought: how can Smarter Travel Workplaces play a role in improving the Challenge ability for participants?

The Step and Cycling Challenges and associated promotions provide a trigger event, and additional motivation to encourage an interested (already motivated) individual to trial or to increase existing levels of cycling or walking. But is this enough? Dr BJ Fogg in his work at Stanford University, suggests three elements must converge at the same moment for a behaviour to occur: **Motivation, Ability, and Trigger**.

He states that “for a person to perform a target behaviour, he or she must (1) be sufficiently motivated, (2) have the ability to perform the behaviour, and (3) be triggered to perform the behaviour.” And when a behaviour does not occur, at least one of those three elements is missing.7

What sets the Cycle Challenge apart from the Step Challenge, apart from the obvious modal difference is that the bar in terms of **Ability** to perform the behaviour is theoretically raised. For example, walking is something that almost all of us can do, and do every day; it’s a low cost, easy option that requires little or no equipment or thought. Cycling, by comparison, is not as readily accessible; has additional costs, time and effort associated with it (e.g. access to a bike, gear, more defined routes); greater pre-planning and some know how.

Therefore if the objective is to increase participation in a Challenge (particularly by ‘newbies’), it is worth making the associated mental and physical requirements (potential barriers) relating both to the particular mode (walking/cycling) and to the Challenge as easy as possible, at all levels. Though the choice to walk or cycle takes place at an individual level, it can be influenced by the wider environment. The Smarter Travel Workplace and its coordinator can therefore play a useful role in making the choice easier (thereby increasing the ability factor of a potential participant) and demonstrating support for their efforts with showers, adequate cycle parking, provision of pumps, doctor bike, facilitating tax saver etc.

For schemes, as much as for individuals, the old adage is true: you get out what you put in.

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7 http://bjfogg.com/fbm_files/page4_1.pdf