Leicestershire County Council

Night Time Economy Bluetooth Pilot Coalville

Pilot of a proximity marketing campaign

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Executive Summary

- Bluetooth messages were transmitted between 18.00 and 05.00 on Thursdays, Fridays , Saturdays and Sundays.
- Three message scripts were rotated during transmission times.
- Several technical problems regarding the functionality of Bluetooth boxes were encountered during the pilot and were recorded accordingly.
- Findings showed message downloads to be highest on Friday and Saturday nights.
- Successful message transmissions peaked on Saturday nights between 20.00 and 21.59.
- Messages were successfully transmitted to 31% of Bluetooth devices detected during the pilot.
- Message downloads were thought to correspond with busy periods and the times when people are moving between venues for the evening.
- It was noted that peak download times appear to be prior to the time periods when there are higher numbers of alcohol-related violence against the person offences. Hence the campaign is effectively targeting people likely to be in the area when these type of offences occur.
- Fewer messages are downloaded from 00.00 onwards when people are likely to have left the area or be in a greater state of inebriation and so less likely to download messages.
- Findings implicated that the technology does have a use in the Night Time Economy, there is an apparent correlation between busy periods and number of downloads.
- Field research would be needed to assess the actual impact of message content on people's attitudes and behaviours therefore success of the current campaign cannot be measured in an absolute sense.
- Various recommendations were made for future trials of the technology and related research.

1. Introduction

1.1 Background

Leicestershire Drug and Alcohol Action Team (DAAT), Leicestershire County Council, Hinckley and Bosworth Community Safety Partnership, North West Leicestershire Partnership in Safer Communities and Leicestershire Police have been working in collaboration to pilot a proximity marketing campaign in Leicestershire. The pilot is intended to feed into respective districts Community Safety Strategies. Within Coalville the pilot dovetails particularly well with the priority to "Work towards developing a vibrant and safe evening and night time economy" as well as supporting priority outcome 6.2 of the Sustainable Community Strategy for Leicestershire:

"6.2 The harm caused by drug and alcohol misuse is reduced in local Communities"

The pilot also links in with two key headline activities outlined in "Sensible Measures" the Leicestershire Alcohol Harm Reduction Strategy to:

"Develop consistent information and advice (advice (disseminated in creative ways) aimed at a broad range of people (i.e. young people, black and minority ethnic populations, new arrivals, homeless, travellers), in order to ensure wide range of awareness raising and prevention messages"

"Reduce further incidents of public place/ licensed premises based alcohol related rowdy, inconsiderate and violent behaviour by creating interventions such as Night Time Economy strategies across the districts"

The Bluetooth Pilot had the clear aim of disseminating messages in a creative way to young people using the night time economy in order to reduce alcohol related anti social behaviour and violence as part of a strategic approach to managing the night time economy.

Proximity Marketing allows you to send multimedia content to mobile phones easily and with no per message cost. Bluetooth marketing has been used successfully in the private sector for a number of years however there is a scarcity of similar campaigns in the public sector. Trials of the technology have recently taken place in Salford and Merseyside aimed at deploying crime prevention messages. Most recently the Home Office adopted a successful Bluetooth campaign in central London alongside an advertising billboard campaign targeting binge drinking. Nevertheless the technology has not been widely used in the context of reducing alcohol related crime in the evenings. Given that younger age groups are more likely to be users of the night-time economy and are more likely to own a mobile phone or a Bluetooth enabled device, proximity marketing is particularly relevant for this population.

Research shows that alcohol is increasingly linked to violent incidents. The British Crime Survey (2006/2007) revealed that in nearly half (45%) of all violent incidents in the United Kingdom, victims believed offenders to be under the influence of alcohol. Binge drinkers[1] in particular were identified as committing a disproportionate amount of the total number of crimes compared to regular drinkers and a survey[2] revealed that the 18 to 24 demographic are the group most likely to binge drink.

A recent Night-Time Economy report[3] of Coalville town centre also highlighted the need to tackle alcohol fuelled violent crimes in hotspot areas. Evidence showed that the area around Marlborough Square experiences a particular concentration of alcohol-related anti-social behaviour due to the proximity of a number of pubs and the Emporium nightclub. Given the higher population density in town centres and the number of visitors both during the day and night it is expected that these areas would provide a suitable and 'captive audience' for a Bluetooth messaging campaign aimed at reducing harm caused by alcohol misuse. Alcohol-related crime can have a significant impact on individuals, families and communities and therefore has adverse consequences contributing to and creating social problems, economic problems, health problems and crime. This project pilots Bluetooth technology as a means for promoting safe drinking and enhancing feelings of safety in Coalville town centre.

[1] Home Office 2003, Offending Crime and Justice Survey: alcohol related crime and disorder.
[2] The Home Office define binge drinking as feeling very drunk at least once a month.
[3] Safer in the evening, community safety and the night-time economy in North West Leicestershire (2008) - Perpetuity Research and Consultancy International (PRCI) Ltd
[4] www.Bluetooth.com

1.2 Aims and Objectives

The aim of this report is to provide the DAAT and North West Leicestershire Partnership in Safer Communities with an analysis of the take up of Bluetooth Alcohol Harm Reduction messages within Coalville Town Centre. The report will also examine alcohol-related crime trends during the popular night time economy hours.

The findings of this report will indicate the receptiveness of users of the night-time economy in Coalville Town Centre to the Bluetooth messages. The findings within the report will help the DAAT and the partnership to evaluate the marketing potential of Bluetooth in the context of reducing alcohol related crime.

1.3 Considerations

Technology

The Bluetooth units have several shortcomings which may affect the transmission of messages and the server's ability to effectively record information. Where possible action has been taken to maximise units' potential.

Hardware limitations are listed below along with any actions that have been taken to control for them.

Table 1.1: Hardware limitations

Limitations	Action
Servers have difficulty transmitting through walls	Servers strategically placed to maximise transmission area
Servers unable to transmit effectively in adverse weather conditions i.e. rain	Weather being monitored throughout the duration of the project
Download time can slow receipt of message	Download time of all messages minimised to 1-2 seconds depending on device.
Servers not compatible with Blackberries or some mobile devices	No Action
Boxes are not surge protected which can affect the recording of statistics relating to message download	Boxes to be fitted with surge protectors in future trials
Boxes lose signal strength when placed on or next to the ground	Boxes placed in locations aimed at maximising their signal strength

Data

Data uploaded from the Bluetooth servers should be interpreted with an element of caution. The limitations of the hardware along with other

extraneous factors mean that not all messages will have been transmitted in an equal capacity throughout the duration of the pilot. This may have affected the uptake of messages recorded by the server at different times because Bluetooth devices in the area will not have had as equal a probability of receiving the messages. Moreover it is not possible to determine how many people were in the area at the time that Bluetooth messages were deployed. Information recorded only establishes the number of active Bluetooth devices detected and the number of successful message downloads.

As a consequence of the above mentioned factors, it is not possible to establish a cause and effect relationship between violent crime patterns, alcohol-related crime patterns and the uptake of Bluetooth messages, or draw inferences.

Data limitations also mean that it is not possible to compare the success of different message scripts as message content may not be known to the recipient prior to download. Consequently the content of the message would have no bearing on whether the message is downloaded or not.

1.4 Message Scripts and Deployment

Bluetooth messages followed three designated scripts along the theme of getting home safely. Brief synopses of the story boards for each message script are depicted in appendix I. Themes were:

"Getting home safely" - promoting taking a taxi home.
"Belong" - promoting a safe night out.
"Beer glass" - aimed at preventing alcohol fuelled aggression.

Messages were transmitted between 18.00 and 05.00 on Thursdays, Fridays, Saturdays and Sundays. The "getting home safe" message was consistently run each week from 17.00 until 20.59 after which the "Belong" and "Beer glass" messages script schedules were rotated on a daily basis between 21.00 and 04.59.

Bluetooth Box Locations

The maps to the right depict the locations of the four Bluetooth boxes surrounding Marlborough Square in Coalville. All of the boxes were located toward the eastern side of the square adjacent to Belvoir Road. Three of the boxes were located in public houses and one was located in the window of a first floor office broadcasting across the square. The exact locations are as follows:

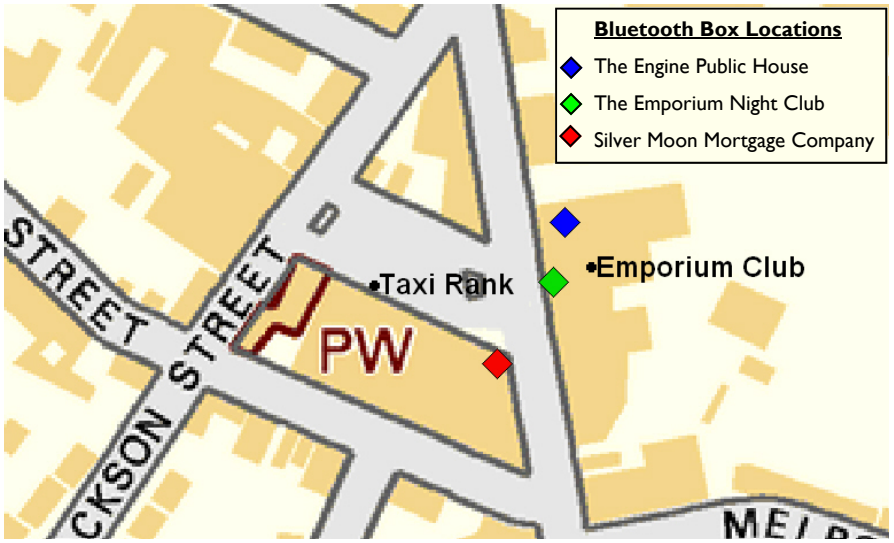
- The Emporium night club - server box located in the first floor managers office overlooking the square.
- The Engine public house — server box located in the bar area.
- Silver Moon mortgage company — server box located in the 1st floor office just above the betting shop. The box transmitted into the square and towards the Emporium night club.

Marlborough Square was chosen as a suitable location for the pilot as it is popular amongst users of the night-time economy and it is commonly recognised as a community safety 'hotspot'. A recent community safety report on the night-time economy in Coalville revealed that rowdy behaviour, drink-related incidents and assaults are all commonly perceived to be the most prominent community safety issues in the area[3].

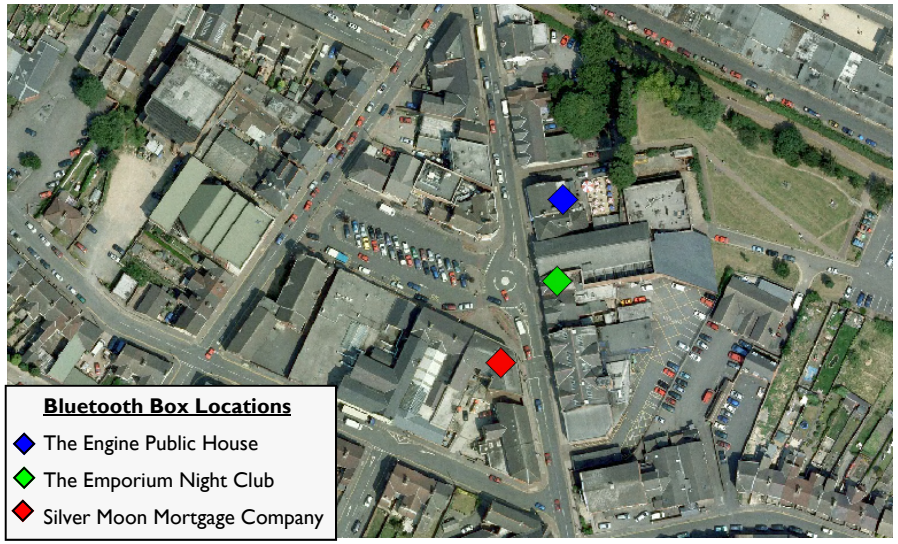
Promotion

Bluetooth messages were deployed throughout the week to promote the campaign, providing details to recipients of when the campaign would be running. Traditional media such as banners promoting the Bluetooth trial were not permitted to be displayed in Marlborough Square. However beer mats were distributed in two pubs and a nightclub falling within the Bluetooth zone.

Map 1.1: Bluetooth Box locations surrounding Marlborough Square



Map 1.2: Aerial view — Bluetooth Box locations Marlborough Square

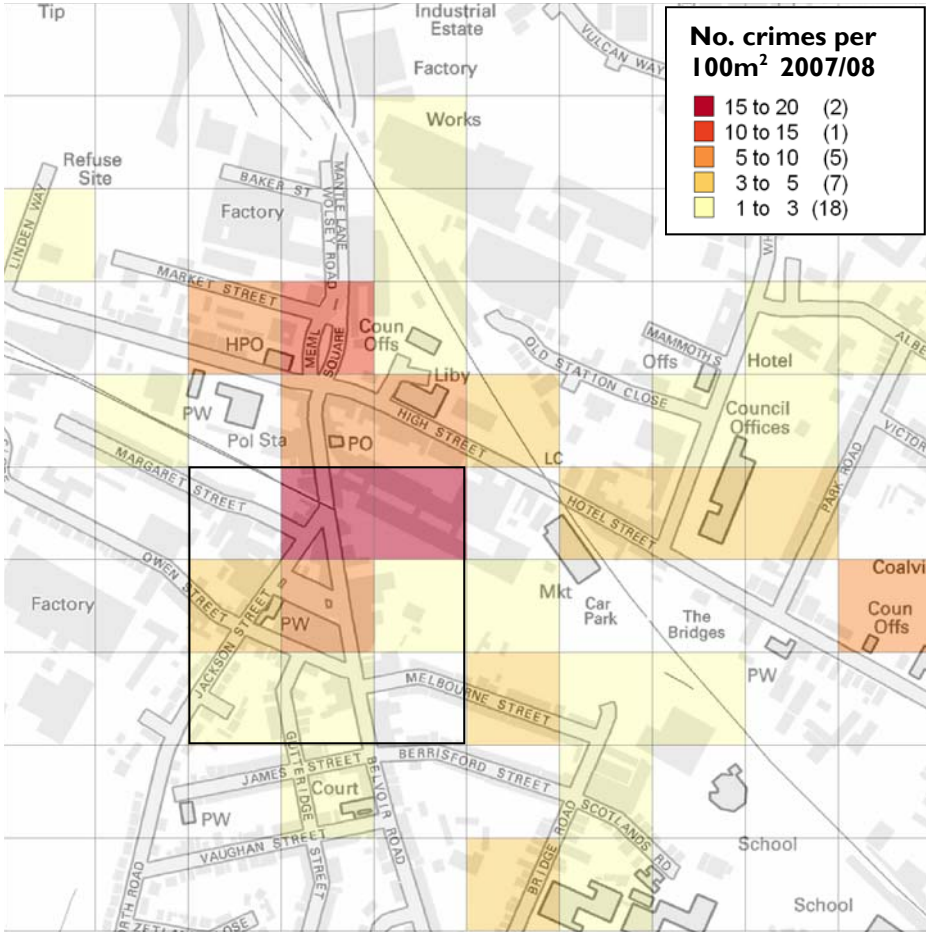


2. Crime

2.1 All Crime

In 2007/08 there were 7,243 crimes in North West Leicestershire district as a whole which approximates to 80.8 crimes per 1000 population. This is higher than the crime rate in Leicestershire (68.3 crimes per 1000 population) but lower than the national crime rate (92.1 crimes per 1000 population). In terms of total recorded crime in Coalville Centre, total crimes equated to 910 crimes during 2007/08 (i.e. 13% of all crime in North West Leicestershire).

2.2 Alcohol-related crime in Coalville Centre 2007/08



2.2 Alcohol-related crime

Leicestershire Constabulary's CIS system denotes a flag indicating whether an offender was under the influence of alcohol when they committed an offence. Data is recorded within a 100m^2 radius of where the offence was committed and an offender can be flagged by either the victim, offender or the arresting Police Officer. The measure is relatively subjective and should therefore be interpreted with an element of caution. According to the flag system 9% of all recorded crimes within North West Leicestershire in 2007/08 were recorded as being committed under the influence of alcohol. This proportion increases to 14% if we look at the proportion of alcohol-related offences committed in Coalville centre alone, indicating that a higher proportion of alcohol-related crimes occur in the town centre.

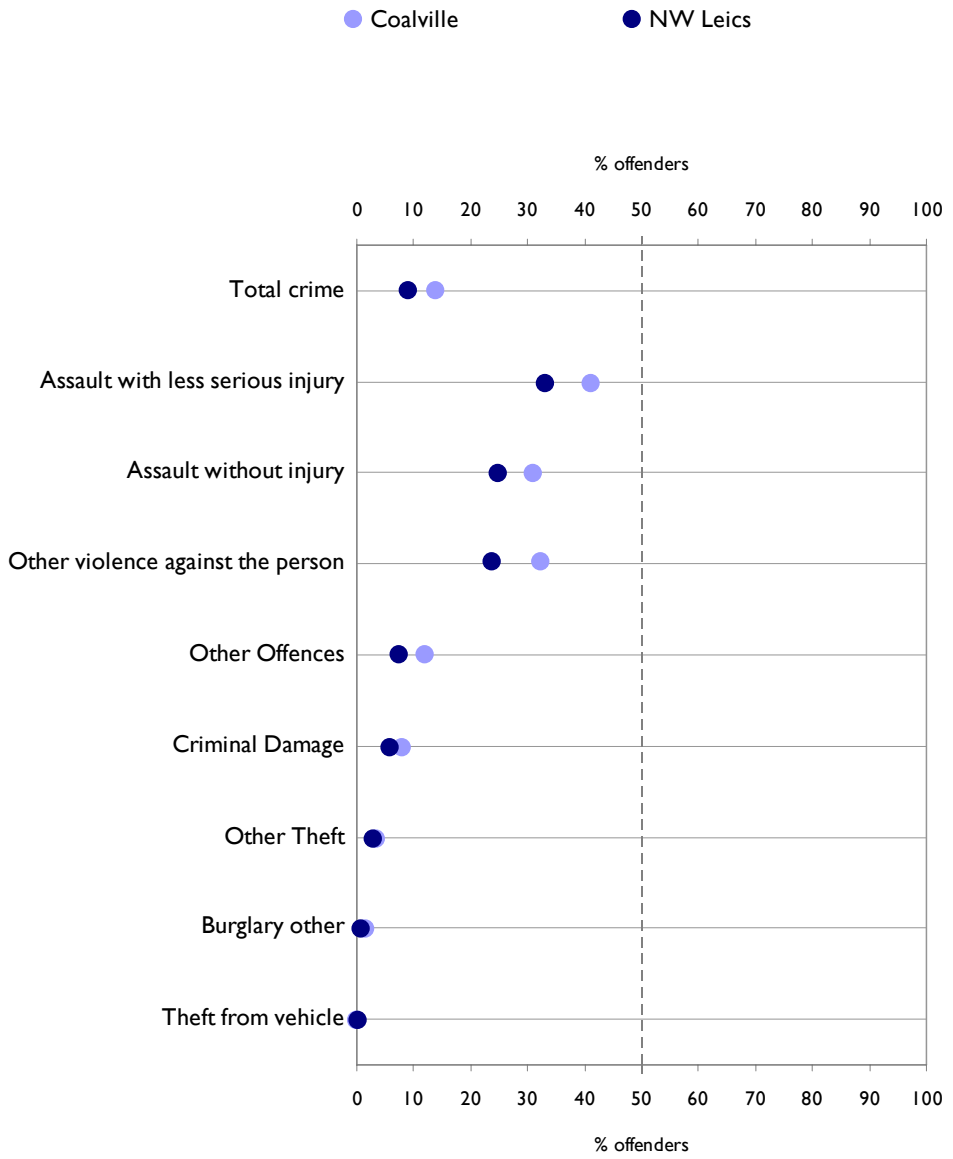
Table 2.1 Proportion of all alcohol related-crime by crime type

Crime Type	% of all alcohol-related crime in Coalville Centre
Assault with less serious injury	35%
Other violence against the person	19%
Assault without injury	14%
Criminal Damage	10%
Other Offences	10%
Other Theft	6%
Serious Violent	2%
Burglary other	1%
Robbery	1%
Sexual	1%

Table 2.1 shows the proportion of alcohol-related crime that each crime type accounts for in Coalville Centre. Violence against the person (VAP) offences (including assault with less serious injury, other violence against the person, assault without injury and serious violent crime) together contribute to over two thirds of all alcohol-related offences in Coalville Centre. This highlights an interaction between alcohol and aggressive and threatening behaviour. These types of crime are seen to account for the largest portion of alcohol-related crime, whilst criminal damage and other offences also feature fairly prominently amongst crimes flagged as being alcohol-related.

Statistical analysis revealed that overall there are a significantly higher proportion of alcohol-related offences in Coalville Centre compared to North West Leicestershire as a whole. For example, chart 2.1 shows that in 2007/08 approximately 41% of 'assault with less serious injury' offences in Coalville Centre were alcohol related compared to 33% in North West Leicestershire. From the chart it is apparent that alcohol-related crimes experiencing the most divergence in terms of the proportion committed in the centre or in North West Leicestershire are all VAP offences. Some crime types with very small numbers of recorded crime have been removed from the chart to avoid ambiguity.

Chart 2.1 Proportion of offences that are alcohol-related by offence type 2007/08, in Coalville Centre compared to North West Leicestershire as a whole



Note: In 2007/08 only 124 of 910 offences in Coalville Centre were recorded as alcohol related. Some crime types with a very small number of crimes have been removed from the above dot plot to avoid ambiguity.

2.3 Violent Crime

Most alcohol-related crimes committed in North West Leicestershire and Coalville Centre are VAP offences. VAP offences fall under four categories of serious violent crime: assault with less serious injury; assault without injury; and other VAP offences. Chart 2.2 shows all VAP offences in North West Leicestershire in three-hour intervals and by time of day and day of week aggregated for 2007/2008. Offences are broken down by the total number of VAP offences against alcohol-related VAP offences. This enables us to gauge which time periods on average experience the highest numbers of VAP offences and, of these, the proportion that are associated with alcohol. In 2007/2008 there was a total of 1,130 VAP offences, of these 387 (34%) were alcohol-related.

As might be expected (assuming that alcohol and VAP offences are related) fewer VAP offences are recorded from Mondays to Thursdays. During the week-ends both the number of offences and the proportion of VAP offences that are alcohol-related increases. This pattern is most evident at peak night time economy hours where there is a steep rise in the number of offences and the majority of these are alcohol-related. For example, between 21:00 and 02:59 on Friday and Saturday nights there were 252 VAP offences recorded in North West Leicestershire and 159 (63%) of these were alcohol-related. Interestingly, with a total of 148 VAP offences, Friday nights (between 21:00-02:59) see noticeably higher numbers of VAP offences than Saturday nights (104).

Chart 2.2 Alcohol-related violence against the person offences by total violence against the person offences: North West Leicestershire

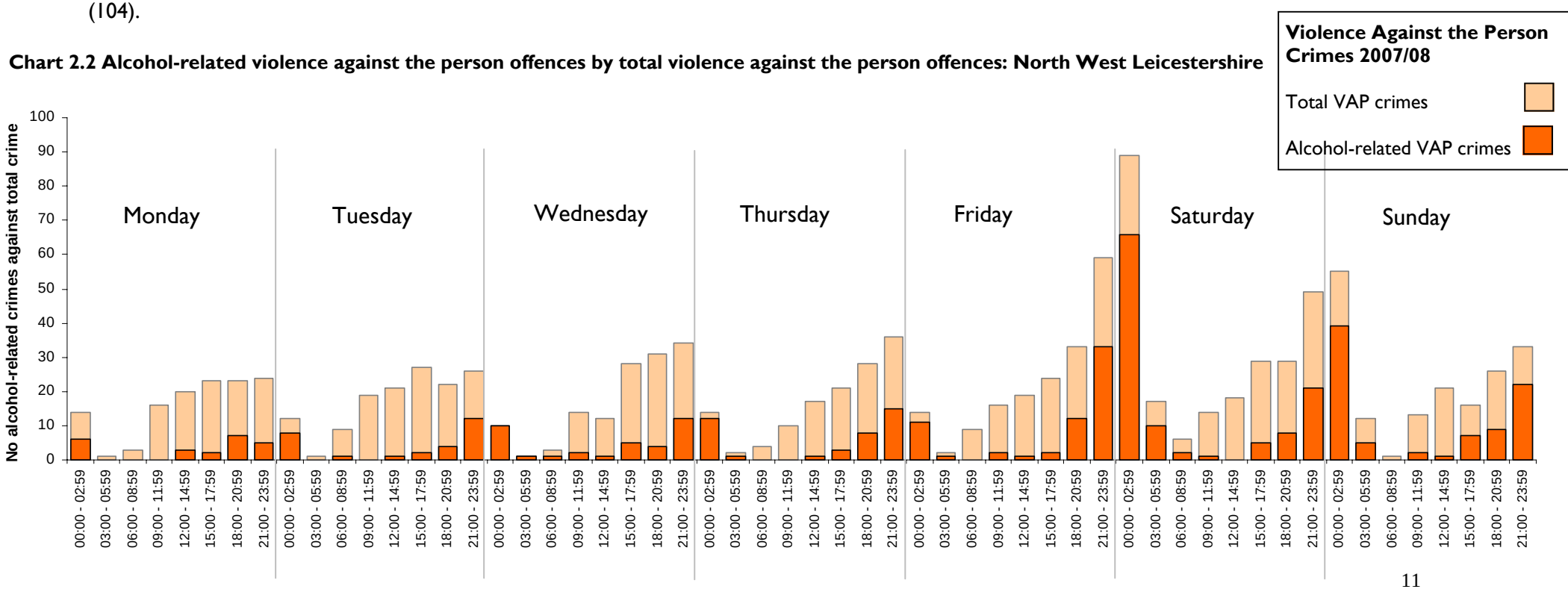
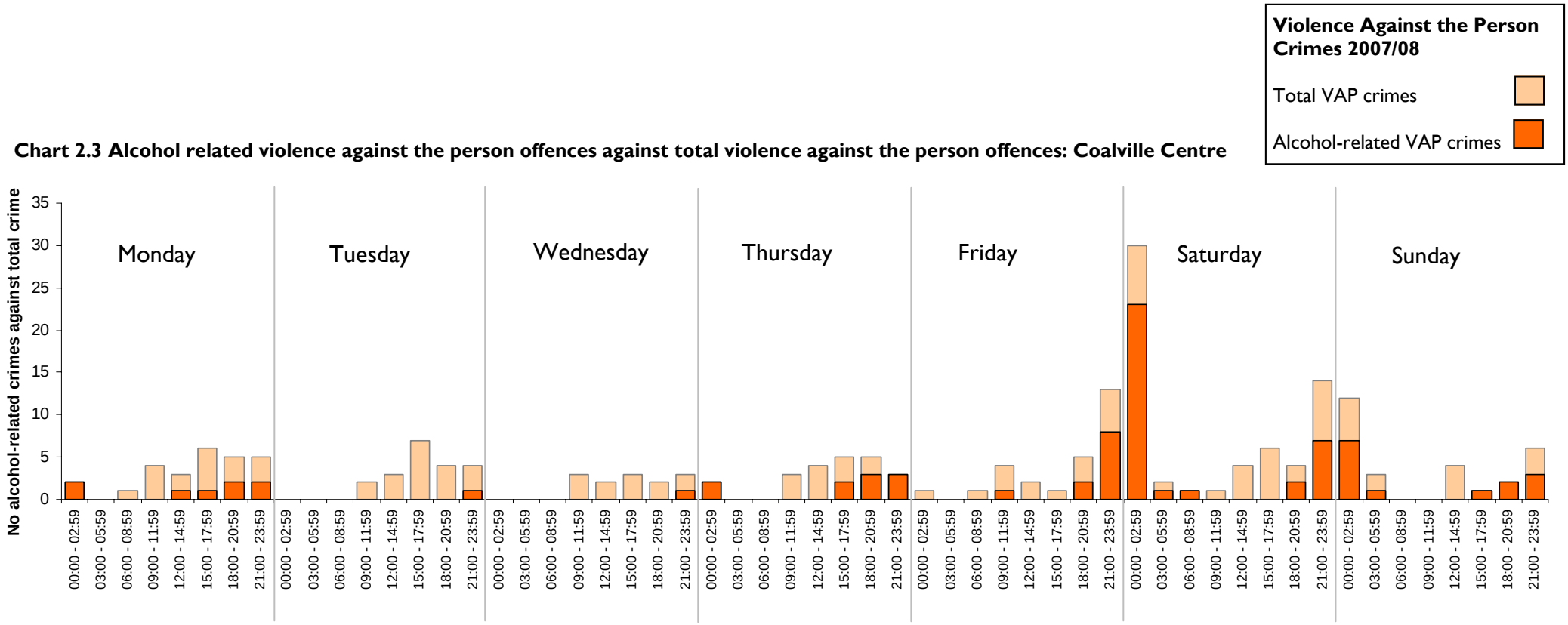


Chart 2.3 is set out in the same format as Chart 2.2 but shows the number of VAP offences in Coalville Centre as opposed to the district as a whole. In 2007/08 there were a total of 79 alcohol-related VAP offences in Coalville Centre. The majority of these offences were committed on the street (60%) or in a public house (16%).

The chart follows a similar pattern to North West Leicestershire; there are lower numbers of offences during Mondays to Thursdays and both the numbers of VAP offences, and alcohol-related VAP offences as a proportion of all offences, increases significantly over the week-ends. Again, though to a greater extent than within the district, there are noticeably higher numbers of offences on Friday nights (43) than Saturday nights (26) and whereas on Saturday nights 54% of these VAP offences were alcohol-related, for Friday nights this rises to 72%. Charts 2.2 and 2.3 both clearly show VAP offences to be exacerbated by intoxication hence there is a clear need to introduce campaigns to encourage safe drinking and tackle alcohol-related anti-social behaviour and crime.

Chart 2.3 Alcohol related violence against the person offences against total violence against the person offences: Coalville Centre



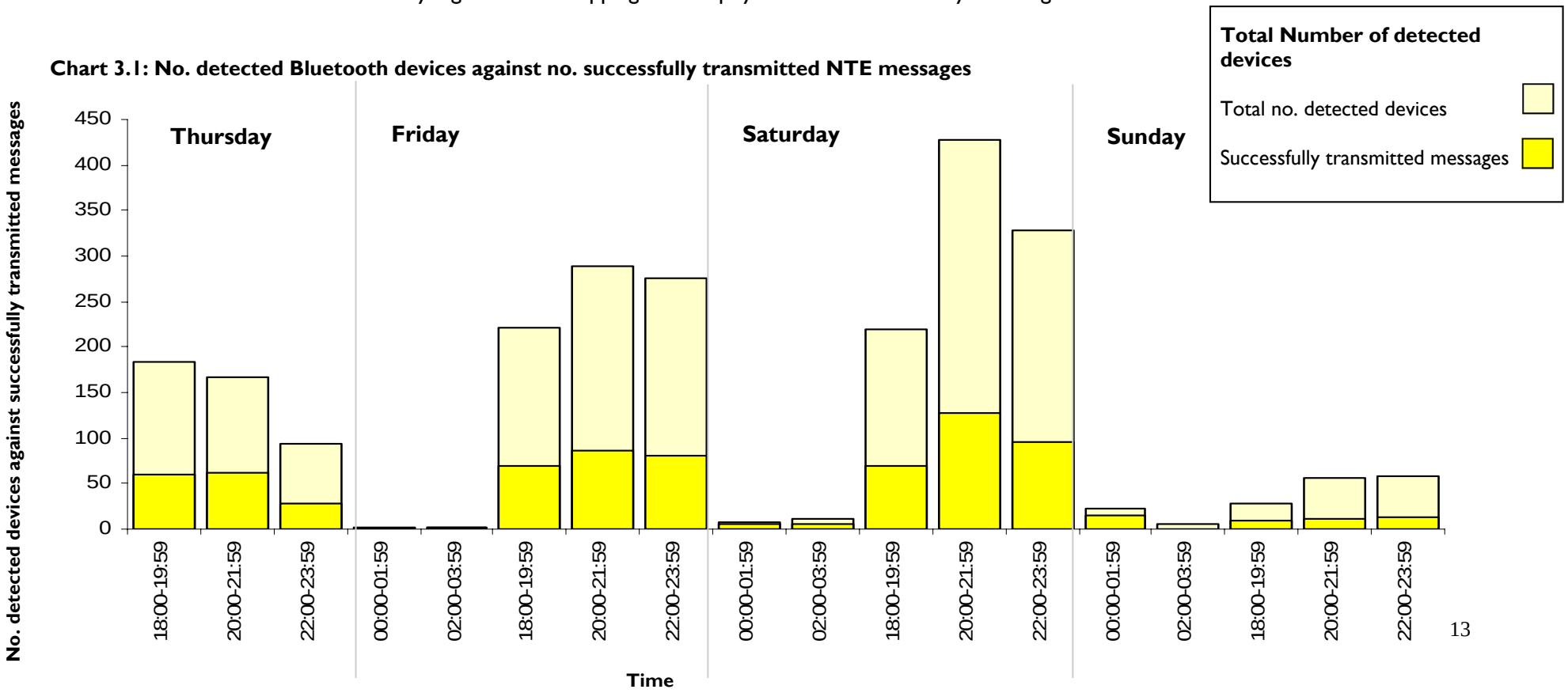
3. Bluetooth Analysis

3.1 Detected Devices

Chart 3.1 shows the number of successfully transmitted Night Time Economy (NTE) messages against the total number of detected Bluetooth devices in Coalville Centre during the pilot (07/08/2008 and 31/08/2008). NTE messages were transmitted between the hours of 18:00 and 05:00 on Thursdays, Fridays, Saturdays and Sundays only. The chart depicts detected devices in two-hour bandings.

In total, and out of a possible 2,397 mobile devices which were contacted, 740 NTE Bluetooth messages were successfully transmitted to mobile phones within the pilot area. This is an overall uptake rate of 31% of the total devices contacted indicating that the campaign reached around a third of detected devices in Coalville Centre during the pilot. The chart shows the number of detected devices per night to increase from Thursday onwards before falling again on Sunday as would be expected given popular NTE hours. Unsurprisingly this reflects a possible correlation between the number of people in the area, the number of detected devices and the number of successful message downloads, suggesting that proximity marketing campaigns may be particularly apt for social environments such as pubs and clubs which often provide a social focus for large numbers of people. The total number of detected devices peaks between 20:00 and 21:59 on Saturday nights which is also reflected in the numbers of successful message downloads. Numbers remain relatively high between 22.00 and 23.59 on a Saturday night before dropping off abruptly from 00.00 on Sunday mornings.

Chart 3.1: No. detected Bluetooth devices against no. successfully transmitted NTE messages

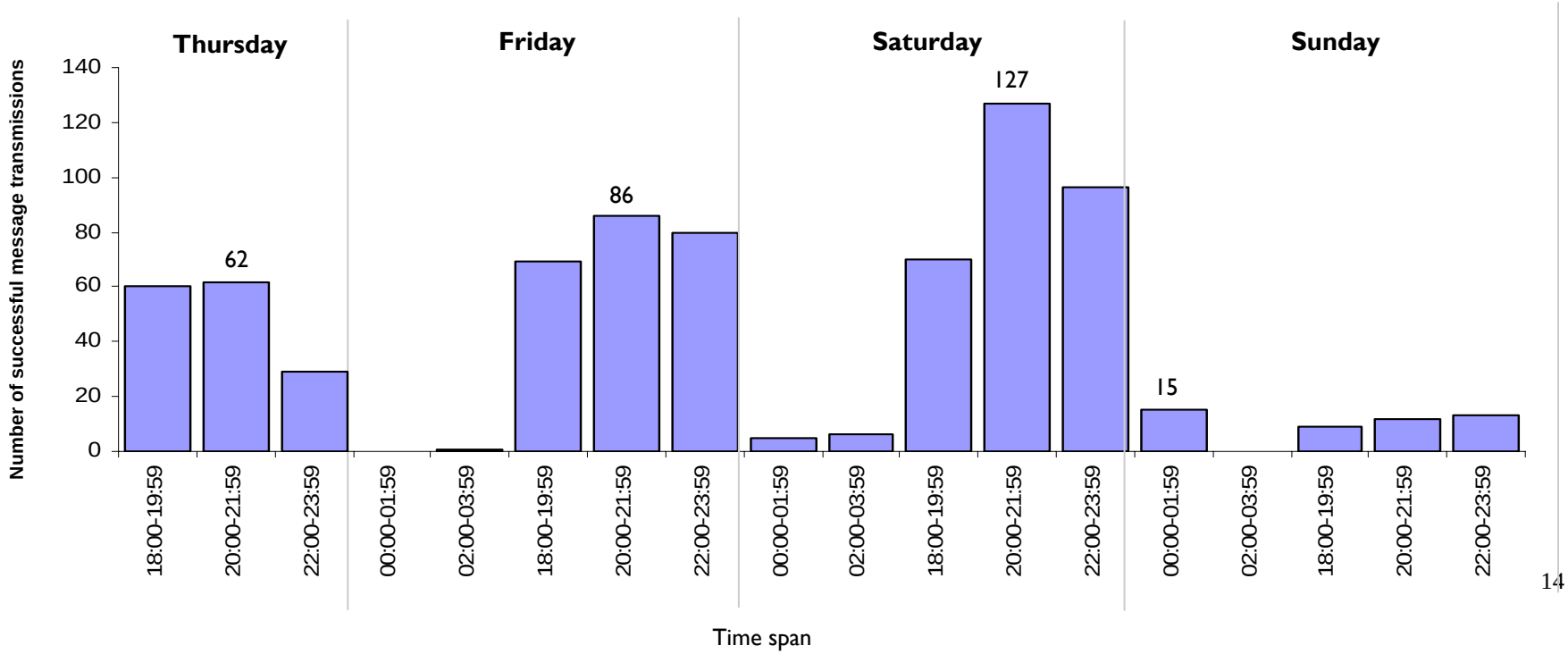


3.2 Successful Message Transmissions

Chart 3.2 depicts the number of successful Bluetooth message transmissions within Coalville Centre during the pilot. Successful message downloads are highest on Friday and Saturday evenings between 20.00 and 21.59. This is in line with the times when a large number of people are likely to be in the area to visit pubs and bars. On Thursday, Friday and Saturday nights the number of successful transmissions falls between 22.00 and 23.59 which corresponds with pub closing times i.e. the time when people are most likely to leave venues to go home for the evening or move on to areas with venues with later night licenses (i.e. nearby Burton or Ashby). There is a sharp drop off in message uptake from 00.00 onwards which may be attributable in part to people having left the area or being in a greater state of inebriation and so less likely to download messages to their mobile.

Successful message transmissions peak between 20.00 and 21.59 on Saturday nights, unsurprisingly this is also consistent with the time when the highest number of Bluetooth devices are detected (see Chart 3.1). Over the course of the pilot there were a total of 127 successful message downloads during these hours which is approximately 32 downloads per Saturday night. The peak in message downloads between 20.00 and 21.59 on Friday and Saturday nights is prior to the time periods when higher numbers of alcohol-related VAP offences are recorded (between 00.00 and 02.59). This indicates that the campaign may have been successful in targeting some of the groups of people likely to be in the area when alcohol-related VAP offences are most likely to occur (see chart 2.3). Therefore transmitting Bluetooth messages in bars and pubs during NTE hours does seem an effective medium for transmitting Community Safety messages given the captive audience present.

Chart 3.2: Number of Bluetooth messages successfully transmitted during the pilot (07/08/2008 and 31/08/2008) by time of day and day of week

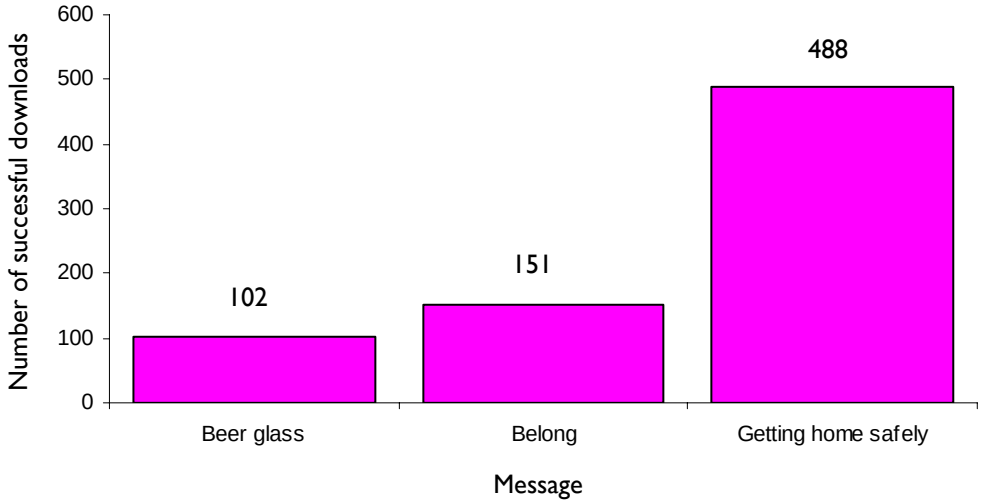


In terms of VAP offences recorded in Coalville Centre during the pilot, there were eleven in total, three being alcohol-related. Offences consisted of: five assault with less serious injury offences, two assault without serious injury offences, three other assault and homicide offences and one serious violent crime offence. Unfortunately it is not possible to analyse whether the Bluetooth NTE campaign will have directly had an impact on incidents occurring in the area given the small number of total offences. However on comparative dates and times in 2007 (Thursdays to Sundays between 18.00 and 05.00) there were a total of eight VAP offences and four of these were recorded as being alcohol-related.

3.3 Downloads by Message Type

The chart below shows the number of successful message downloads by message type. Message content is unknown to recipients prior to download therefore it is not possible to gauge the success of different message campaigns in terms of individual marketing potential. However, the chart does show which messages were most successful in reaching the audience targeted. "Getting home safely" is seen as the message most frequently downloaded by persons present in the Coalville Centre area at the time of the campaign, accounting for two thirds (66%) of message uptake. This message is scripted around encouraging revellers to get home safely by pre-booking a taxi instead of remaining in the area for longer than necessary following a night out, thus increasing the risk of engaging in dangerous or anti-social behaviours. As messages were rotated by box (location of transmission) and by time slot, higher levels of uptake may only be attributable to chance and uncontrollable factors such as the number of people in the area at the time of transmission. The weather in Coalville Centre remained relatively dry throughout the pilot, barring a couple of light showers, which are unlikely to have affected message broadcast.

Chart 3.3: Number of downloads by message type



4 Conclusion

4.1 Conclusion and Recommendations

Marketing via the medium of mobile phones is becoming increasingly popular. However, little is known regarding the effectiveness of such campaigns and factors contributing to their success, particularly in relation to community safety and alcohol-harm reduction. The project in Coalville Town Centre has made tentative steps toward piloting such a scheme in the context of community safety.

To effectively gauge the success of the Bluetooth technology the pilot would need to have been conducted in a much more controlled environment. Nevertheless, despite there being no baseline available to quantify the success of the campaign in an absolute sense, the project has proved invaluable in terms of lessons learnt about the technology and in identifying patterns in message uptake in Coalville Town Centre. Overall around a third (31%) of Bluetooth devices detected in the area during the pilot successfully received one of the campaign messages. Moreover, it is expected that this could be enhanced in future trials given better understanding of the technology.

Analysis showed that message uptake and device detection is highest on more popular NTE nights (Thursdays, Fridays and Saturdays) and between 20.00 and 21.59 and 22.00 and 23.59. This unsurprisingly suggests a possible correlation between the number of people in the area and the number of successfully transmitted messages. Hence Bluetooth technology may be particularly apt for use in NTE environments which encourage large numbers of people to congregate in a relatively small area.

Analysis showed a sharp drop off in message uptake from 00.00 onwards (possibly attributable to revellers being in a greater state of inebriation or having moved out of the area after this time). Patterns in alcohol-related VAP offences recorded in 2007/08 also appear to be much higher following 00.00. Therefore targeting campaigns to revellers in Coalville Centre earlier on in the evening (between 20.00 and 21.59) may prove more effective for maximising marketing potential and conveying key messages.

Recommendations

This report provides a first step to analysing the effectiveness of Bluetooth technology within the context of community safety as well as highlighting the various limitations involved in conducting analysis of such data in an uncontrolled setting.

Specific recommendations for future usage of the technology in marketing to the NTE are:

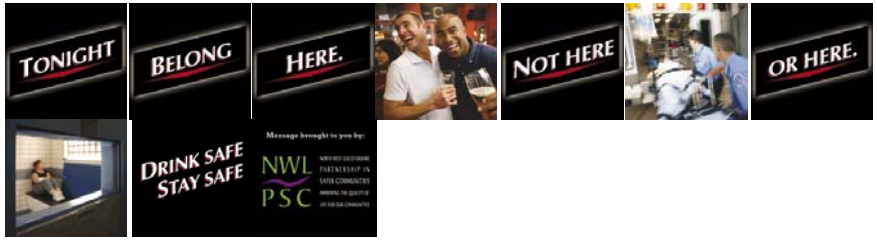
- Consult Bars and Clubs well in advance of Bluetooth projects and be aware of rules, regulations, laws and restrictions that may prevent boxes being placed in particular venues (i.e. health and safety).
- Position Bluetooth Boxes in venues or locations which are popular with users of the NTE to maximise uptake.
- Be aware of technological and environmental limitations that may affect uptake (i.e. weather conditions, events).
- Consider the most effective time period and days for deploying messages (e.g. opening and closing times of venues).
- Use traditional media to promote the campaign and enhance awareness.
- Use field research to assess the actual impact of message content on people's attitudes and behaviours.
- Ensure any research is conducted in a robust manner with suitable controls in place. Future trials may be more suited to conducting field work or a post-trial survey using a representative sample of the local population.

Appendix I

Message Scripts

Getting home safely

Belong



Beerglass

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