## DaliaResearch February 2015

# Real-Time Mobile Sampling

### A Case Study in 28 EU Countries



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### **1. Executive Summary**

In December 2014, Dalia partnered with some of the world's leading market research institutes, online panel providers and think tanks to explore the scope and limits of real-time mobile sampling. This report provides an overview and analysis of the research project, which covered 28 EU countries. To better understand fieldwork dynamics, user behaviour, completion rates, demographic reach and other elements, Dalia Research invited a census-representative sample of over 20.000 European smartphone users below the age of 40 to answer a questionnaire with approximately 100 question items. The survey was conducted across a network of several thousand apps and mobile websites. The project generated a total of over 4 million answers on topics ranging from brand perception to food labelling, political attitudes, online shopping behaviour and other areas of interest. With the exception of Cyprus, real-time mobile sampling was found to be a viable method to reach a large pool of casual mobile respondents across Europe for market and opinion research.

### 2. About Dalia Research

#### 2.1. Background

Dalia Research was founded in October 2013 in Berlin, Germany, to facilitate market and opinion research in the mobile world. Through its proprietary technology platform, Dalia currently accesses a network of over 25.000 apps and mobile websites with exposure to well over 200m potential unique monthly respondents. Dalia Research follows a "mobile first" approach and has developed a suite of tracking, attribution and retargeting solutions that enable it to provide high-quality, real-time access to mobile respondents in 76 countries around the world, and to generate up to 3.5 millions answers per day.

#### 2.2 Our Principles

Dalia Research seeks to make "smart" data big and works tirelessly to provide the most efficient access to the greatest possible number of people. However, quantity is not all that matters when it comes to understanding what people think. A poorly designed research project or a poorly written survey will not provide great insights, no matter how many people answer questions. This is why we have developed a few short principles of mobile research that guide our daily work:

- 1. **Make it short** Asking questions can be fun and surely adding "just one more" question won't make a difference? It does if those who answer the questions feel that they are wasting their time and respond accordingly. So before writing a survey, we reflect deeply on how we can generate insights with the lowest possible number of questions
- 2. **Communicate clearly and friendly** We treat surveys as if they were a real dialogue between two people, because that is what they are! When we write questions, we read them out loud and pretend that we're asking a friend for their answer. If a question feels awkward, it most likely is, and will yield poor answers.
- 3. **Complete our own survey before asking others to do so** most survey writing starts in a word document, which is a good way to structure thoughts but a bad way to understand the user experience of someone answering on their smartphone. So after the survey is scripted, we take a smartphone and fill it out. We then go back to the drawing board to make it better. The extra effort this requires upfront always pays out in better data, happier respondents and lower costs.
- 4. **Keep it anonymous** elections are anonymous and so should research projects. At Dalia, we don't collect personally identifiable information such as email addresses, phone numbers, names or physical addresses. In return, we get more honest answers and engaged, casual users that can freely share their thoughts.

#### 2.3. Country Coverage

Below is an overview of the countries that we currently cover. Not all countries are equally strong in terms of interviews we can complete per week. Differences can relate to population size, smartphone penetration rates, smartphone usage patterns and other factors. In some countries, such as Mexico or China, it is fairly easy to reach a large number of people in a short time-period, while others, such as Uruguay or Finland, it is more difficult. We update these figures on a weekly basis and make the below map available online.

**Current Max System Capacities** 



#### 2.4. Targeting Criteria

For consumer research, Dalia supports a range of targeting options, including the following:



In addition to the above, Dalia has also established pools of mobile respondents related to different areas of interest (see exemplary selection below). Customized targeting is also possible, provided that target groups have a prevalence across the whole population of no less than 10%.



Car Ownership and Purchase Intentions



Media Consumption and Social Media Activity



Grocery and Online Shopping Behaviour



Home Ownership

### 3. About this Project

In December 2014, Dalia partnered with some of the world's leading market research institutes, online sample providers and think tanks to explore the scope and limits of real-time mobile sampling. We invited different strata of smartphone users across Europe to participate in a mobile research project where respondents were asked to fill in a questionnaire on various topics, ranging from car purchase patterns to food labeling, sports, charitable donations, pan-European political issues and attitudes towards contemporary societal questions.

The research project covered all 28 EU-countries: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden and the United Kingdom.

In addition to exploring general dynamics of real-time mobile sampling, the goals of the project were to:

(a) better understand the scope and limits of deploying a single methodological sampling approach to conducting research across a large set of highly diverse countries;

(b) explore the possibilities of mobile as a fast and efficient platform for market and opinion research at a continental scale;

(c) evaluate the use of mobile research to access target groups that are otherwise difficult to access, for example younger generations or people without access to landline phones.

The survey was scripted in Dalia's proprietary survey programming tool in the form of a lightweight and responsive mobile website that can be accessed on all common smartphones and tablets, as well as across all operating systems and browser types.

### 4. Methodology

#### 4.1. Sampling Approach

The rapid increase in smartphone penetration rates across OECD and emerging economies in recent years - over half the population of Western Europe currently has access to a smartphone - has turned mobile sampling into one of the strongest channels to conduct high quality research. With smartphone adoption rates expected to reach 80% of the world's population by 2019, mobile is set to become the primary platform through which to conduct market and opinion research.

Dalia Research has developed a proprietary sampling technology that makes smartphone and tablet users around the world accessible for highquality research studies. Through an extensive network of over 25.000 mobile app and website publishers, Dalia accesses mobile respondents in real-time and invites them to complete research surveys. A highly diverse set of apps and mobile websites - from news to entertainment, sports and games - guarantees a broad access to different demographic groups spread evenly across geographical regions.



*Geographical distribution of interviews. Each mark represents up to 100 individual profiles* 

#### 4.2. Respondent Invitation

Depending on research needs (target groups, countries, survey type), we invite a randomly-selected sample of smartphone and/or tablet users to participate in a research activity through a mobile app or website. Users that are invited to complete a survey (and agree to do so by clicking on our invitation) go through a profiling process to assess basic demographic and targeting attributes, to understand user behaviour and to anonymously register the user as a survey participant through fingerprinting and tracking technologies.

Among qualified new users or registered returning users, our targeting algorithm conducts a random selection within a pre-defined target group (eg women between 20 and 30 years old who live in a city) and matches them with a research project where this profile is required. Upon successful completion of the survey, the person is instantly rewarded for their effort.



#### 4.3. Incentivisation

For market and opinion research surveys that are longer than only a few questions, Dalia Research offers respondents a non-monetary compensation for their efforts. After testing different options, we found that one of the best incentivisation approaches is to provide users with in kind rewards such as access to premium content (eg access to news articles in "freemium" news apps), free airtime (eg in pre-paid mobile subscription plans) or virtual rewards (eg extra lives in free-to-play games) in exchange for participating in research.

#### 4.4. Quality Assurance

To ensure a high degree of data quality, Dalia Research has developed a suite of technologies that track and measure response data in real-time. Our proprietary "trust score" algorithm tracks user behaviour and profiles across a range of metrics, such as time to complete steps in a survey, consistency of answers, unusual response patterns and other elements (including passive data observations) that may have an effect on data quality. The trust score is not a static metric but relies on a self-learning algorithm that increases the predictive capacities of the overall system, not just of individual users, over time. This quality assurance measure is a constant feature of our system so that each interaction of a user with our system in any form refines the data quality.

We constantly improve our predictive tools and algorithms to assess expected response quality ahead of user engagement. In addition, we use digital fingerprinting and device identifier technologies, blacklisting of sources, tracking of over 100 active and passive profile parameters, and adaptive screening based on user behaviour. These measures complement more "traditional" approaches to avoid inconsistencies, "speeding", random responses and other response patterns.

### 5. Sampling Structure

#### 5.1. Sampling Frame

Dalia Research samples through thousands of app and mobile websites with a global audience of over 200m monthly visitors. This enables us to reduce source bias and capture a representative sample within the current limits of real-time mobile research (more on that under "Limitations").

For the present study, Dalia drew a census-representative sample among smartphone and tablet users with cross-quotas on age (up to 40 years), gender and location across the 28 EU countries. Research participants were invited to complete a survey through a generic interface to avoid self-selection bias related to the research topic. Wherever possible, a random selection among qualified quota groups were directed to the survey.

#### 5.2. Quota Structure

For this study, Dalia Research calibrated the system to generate 20.000 interviews across all 28 EU-countries. To optimize the performance of the system, we allowed for a limited degree of oversampling with quota groups that exceeded the desired cross quota at any time during the fieldwork. For reasons related to the specific time of the fieldwork (partly during the winter break 2014/2015) as well as considerations of system performance, we have calibrated the system to allow for a maximum of 30.000 interviews to be completed. The final number of completed interviews was 27.658.



The overall respondents distribution is illustrated below. A detailed overview of individual quota cells is provided in Appendix I. For this study, we selected only respondents who have not previously participated in a research project administered by Dalia Research. Also, we focused on demographic groups below the age of 40 as smartphone penetration rates are highest among these groups and accessibility through conventional methods (eg fixed-line phone, email) is relatively low.



This chart illustrates the actual number of interviews conducted relative to the target number of interviews. The distribution was set according to the relative size of the countries in terms of overall population to obtain a representative distribution across different EU countries. Due to differences in system performance across countries, the ratio of target versus actual number of completed interviews can differ considerably across countries (see, for example, Spain versus UK). All countries were oversampled with the exception of Cyprus, where only 12 of the desired 42 interviews were completed during the fieldwork.



In some countries, including Italy, Spain, Poland and Romania, the ratio of male to female respondents in the "natural fallout" was biased towards the former, which led to a heavier overall oversampling of males compared with females.



Smartphone penetration rates and usage patterns can differ considerably across demographic groups. For a given period of time, we saw that younger people are more likely to respond to a survey invitation than older age groups.

### 6. The Survey

#### 6.1. General Structure

The survey covered a broad range of topics, from food labelling to sports, charitable donations, political topics and contemporary societal issues. Unless otherwise specified for methodological reasons, the order of the questions was randomized to avoid bias that results from question sequence. To better understand tolerance for survey length on mobile devices, we made this survey exceptionally long - over 25min - but split it in two parts to enable users to choose whether to proceed or not. As a general rule, we recommend that device agnostic surveys that are fielded on mobile devices should not be longer than 15min for smartphones and 25min for tablets.

#### 6.2. Survey Format

The survey was scripted using a device-agnostic interface to render it appropriately with different screen sizes. The survey was programmed to run smoothly on all major mobile operating systems, including Android, iOS, Windows, Linux and other smaller ones, and with all major browser types and versions.

In total, the survey contained 101 question items. A question item is defined as either a stand-alone question or a question containing a set of up to five individual question elements (eg rating of multiple items that relate to the same question). A question item broadly corresponds to the extent to which a question can comfortably be displayed on a single screen of a mobile device.

#### 6.3. Question Format

The survey covered all main question formats, including single choice, single answer, multiple answer, drop-down, slider and open-ended question. The following table illustrates the relative distribution of these question types across both parts of the survey.

Below are screenshots of the main different question types employed in this survey, an iPhone 6 with a resolution of 1334 x 750 (326 ppi) was used as a screen size.

Table: Question types count by section

Question Type	Part 1	Part 2	Total
Single Choice	13	11	24
Single Answer	4	7	11
Multiple Answer	5	2	7
Drop down	5	13	18
Slider	21	14	35
Open Ended	2	4	6
Total	50	51	101

Whenever required, the order of the questions and the order of answer options were fully randomized to avoid bias related to the specific position of an answer option, which can have a larger effect on responses than in a desktop-environment where more screen space is available.

#### Single Choice



Single Answer

#### **Multiple Answer**





Dropdown

Now, footb	all: who will	win the	
	League III	2015?	
Please select y     estimate	our answer acco	rding to your best	
Likely			·
Real Madrid			
<ul> <li>Please select y estimate</li> </ul>	our answer acco	rding to your best	
Very likely			·
Barcelona			
<ul> <li>Please select y estimate</li> </ul>	our answer acco	rding to your best	
Likely			·
		Next	

**Rating Slider** 



Open Ended



#### 6.4. Languages

The survey was translated into local languages for 15 of the 28 countries. For reasons related to the project setup and the timing of the fieldwork, we implemented the survey in English in a range of smaller countries that were clustered together in the project and where a sufficient share of the population understands and speaks English.

Survey Language	Countries
Bulgarian	Bulgaria
Czech	Czech Republic
English	Belgium, Croatia, Denmark, Estonia, Finland, Ireland, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Slovenia, Sweden, United Kingdom
French	France
German	Germany, Austria
Greek	Greece, Cyprus
Hungarian	Hungary
Italian	Italy
Polish	Poland
Portuguese	Portugal
Romanian	Romania
Slovak	Slovakia
Spanish	Spain

#### Table: Survey language and countries

### 7. Fieldwork

#### 7.1. General Dynamics

Fieldwork times at Dalia differ in important respects from conventional email- or landline-based market and opinion research. The sampling process draws on a very large pool of potential respondents, which is one of the methodological strengths of publisher-based mobile sampling.

As we are recruiting users in real-time through a very wide network of apps and websites, however, the velocity of fieldwork can correlate very highly with the structure and format of the survey as well as with general performance dynamics in the calibration of the project.

A short, well-designed survey that is well calibrated yields significantly higher completion velocity than a poorly designed and long survey. The exceptional length of this survey limited the velocity of fieldwork considerably.

#### 7.2. Fieldwork Progress

The below graph displays the progress of fieldwork by number of completed interviews per day and the different phases of the fieldwork. The green phase (15. Dec) is the pre-test of the survey in a selection of countries. The blue part portrays the staggered fieldwork across different countries. On December 19th, all countries were "live" at the same time, after which countries completed the assigned quotas at different speeds. Due to the holiday period starting on December 23rd, we could not actively manage the survey any more and put it on "autopilot" (red phase) with reduced speed and the corresponding extension of the fieldwork. A visualisation of the fieldwork progress during the high-period of the fieldwork can be accessed at: http://dlrsch.com/fieldwork-eu



#### 7.3. Fieldwork Statistics by Country

The velocity of fieldwork varies considerably across countries and the size of their populations. It does, however, also vary a lot related to the calibration of the survey and the performance of the survey in terms of exposure and user-visibility.

The below graph displays the measured velocity differences according to different setups with average velocity per hour displayed in the middle of the blue bar and upper and lower measured velocity displayed towards the left and right of the graph.

For this particular survey project, the velocity in number of completed interviews per hour varied by a factor of three, depending on the calibration of the project.



#### 7.4. Fieldwork Statistics by time of day

The below graph displays the progress of fieldwork on December 19th by number of completed interviews per hour.



### 8. Response Analytics

#### 8.1 Perceived vs Real Completion Times

The length of a survey is an important variable that affects the overall performance of a research project on a mobile device. Since perception of time can be a very subjective experience, we asked respondents at the end of the survey to estimate how long it took them to complete the survey and compared that with the actual time it took them to complete it.

Respondents on average underestimated completion times by 4 minutes. Overall, average completion times were around 26 minutes and estimated completion times were only 22 minutes. Respondents not only consistently underestimated completion times but also varied in the degree of estimation.

While there was no significant difference between men and women, younger respondents were significantly closer to actual completion times (about 1 minute difference on average for age groups between 14 and 19) than older respondents (over 5 minutes difference for age groups between 30 and 39).



Perceived average time vs real average time

Respondents on average underestimated the time it took them to complete the survey by around 15%

Also notable is that the gap in real vs perceived completion times varies across countries, with Germany almost 6 minutes off but UK respondents less than one minute off.



There is no systematic difference in perception of time across gender.





Younger age groups appear to have a better perception of completion times than older age groups.

Perceived average time vs real average time by countries					
Country	Perceived	Real	Difference		
Austria	22:31	27:23	04:52		
Belgium	23:51	24:02	00:11		
Bulgaria	25:56	31:48	05:52		
Croatia	20:11	30:59	10:48		
Cyprus	24:06	23:03	01:03		
Czech Republic	25:07	27:44	02:37		
Denmark	27:10	26:42	00:28		
Estonia	26:45	29:14	02:28		
Finland	24:38	25:38	01:00		
France	23:56	26:16	02:19		
Germany	21:03	26:32	05:28		
Greece	22:09	29:02	06:53		
Hungary	23:47	27:29	03:43		
Ireland	23:09	26:59	03:51		
Italy	22:36	23:58	01:21		
Latvia	21:48	27:14	05:26		
Lithuania	24:37	27:50	03:13		
Luxembourg	24:39	28:24	03:45		
Malta	17:28	29:04	11:35		
Netherlands	23:38	25:10	01:32		
Poland	23:20	26:05	02:46		
Portugal	22:50	26:11	03:21		
Romania	22:21	27:48	05:27		
Slovakia	22:20	25:16	02:56		
Slovenia	26:10	31:10	05:00		
Spain	23:17	26:59	03:42		
Sweden	24:37	26:40	02:03		
United Kingdom	23:25	22:51	00:33		

In only three countries (UK, Denmark and Cyprus), respondents perceived the survey to be longer than it actually was. Both actual and perceived completion times vary by up to 30% across countries

#### 8.2 Survey Ratings

Satisfaction metrics are one of the key parameters that we track in order to continuously improve userexperience and thus response quality. In this project, we expected a low rating due to the exceptional length of the survey. Overall, however, rating were decent with around 45% of respondents rating the survey as "ok", 15% as "bad" or "very bad" and 40% rating it as "good" or "very good".

Men seem to have liked the survey slightly better than women and younger age groups liked it slightly better than older age groups.



#### 8.3 Completion Rates

The closest equivalent in real-time mobile sampling to conventional response rates is the "completion rate", which describes the share of respondents that completed a survey relative to the overall population that was invited to complete this specific survey.

As we split the survey in two parts, there are also two completion ratios. For the first part, we saw a completion ratio of almost 60% overall. About 57% of those who completed the first part went on to also complete the second part, leading to an overall completion rate of the entire survey of 35%.

While the below completion rates are relatively good for a mobile survey of that length, the differences in completion rates across gender, age groups and countries can be quite large.



About 60% of those that were invited to complete the survey completed the first part (about 13 minutes long). Of these, 57% went on to also complete the second part, yielding an overall completion rate for a 26 minute-survey of 35%.



The overall completion rate for the survey differs considerably across gender, with almost 40% of women completing both parts versus 31% of males.



Completion rates also differ significantly between age groups with 42% of 30-39 year olds completing the survey while only 25% of 14-19 year old complete it.



Average completion rates mask significant differences across countries. Germany, for instance, has almost double the completion ratio of Spain. Due to a low number of overall completed interviews in smaller countries (eg Cyprus, Lithuania, Malta, Luxembourg), the reported completion rates in those countries may not be comparable to those countries with a very large number of completed interviews.

#### 8.4 Device and Platform Split

Some of the "passive" data that is communicated to our system when a user agrees to take part in a research project are the device type and operating system. Below are the distributions for this project, which broadly correspond to actual distributions across Europe: according to StatCounter, iOS had a 40.7% market share and Android a 53.2% market share in December 2014, so this sample was slightly biased towards Android-based mobile devices.



### 9. Limitations

All survey methodologies and technologies have important limitations. Reaching a perfectly representative sample of an entire population in an efficient and fast way still remains the holy grail of market and opinion research. The rapid spread of smartphones around the world combined with a globalized app-industry will turn publisher-based mobile sampling into one of the most promising methods for high-quality data collection over the coming years.

There are, however, two key limitations to this type of mobile sampling, the first temporary and second permanent:

(a) Smartphone penetration rates currently differ significantly across age groups, countries, urban and rural areas, household income and other factors. Even with overall adoption rates surpassing 60% in OECD countries and 50% in emerging economies, smartphone usage is still biased towards the young in OECD countries and towards the urban affluent in emerging economies. So while a random smartphone sample can in some cases outperform a random fixed-line sample, it is still far from representative for the overall population.

(b) Publisher based mobile research shares a methodological limitation with CATI (but not directly with email-based online sampling). People who are rarely at home and away from their landline phone are unlikely to be frequently consulted for a research study through that phone. The same is true for smartphone users: those that use their smartphone rarely are less likely to encounter an invitation for a research study than smartphone "addicts" who spend several hours per day in a large variety of apps and mobile websites. In addition to penetration rates, the "depth" of smartphone use is thus also very important to take into consideration with mobile sampling. Smartphone usage depth is currently heavily biased towards the young, which makes them disproportionately more likely to encounter an invitation to participate in research.

### **10. Conclusion**

This report summarizes the main findings of a real-time mobile sampling project across all 28 EU countries. The following outlines some of the key conclusions:

**Scalability** Publisher-based mobile research is very strong in reaching people across a large set of countries/geographic regions with a single methodological approach and relatively easy project management.

**Survey Length** While longer surveys of up to 25 minutes are possible, drop-off rates increase significantly and lead to lower completion rates, which can lead to bias and higher costs.

**Target Groups** Smartphone penetration rates are still skewed towards younger age groups. Perhaps more importantly, however, smartphone usage patterns can have a large effect on reaching different population groups, again favouring the young.

**Completion Rates** Completion rates in this project ranged between 30% and 60%, with significant variations across countries, age groups and gender. Of the larger European countries, Germany was the best-performing in terms of completion rates and Spain the worst. Completion rates in Poland, the UK, France and Italy ranged between 34% and 41%.

**Fieldwork Velocity** The fastest day yielded 4331 completed interviews. During this day, average completions per hour were around 200 between 9:00 and 23:00 with a higher plateau of over 300 per hour between 15:00 and 20:00.

**User Rating** Contrary to expectations, the final rating of users who completed the entire 26 minutesurvey was satisfactory, with a 40% positive rating, 15% negative rating and 45% indifferent. This excludes respondent who have not completed the survey.

### **Appendix I: Quota Cells**

The below table provides an overview of the quota cells underlying the sample distribution according to age, gender and location in this study. The sample for this study was drawn among people younger than 40 as smartphone penetration rates are highest in this age group and younger populations are difficult to reach using conventional survey methodologies. Relative figures are corresponding to census data on the different demographic groups.

Table: individual quota cells by gender, age and country.

Country	Gender	14 - 19	20 - 29	30 - 39
	Female	30	67	68
Austria	Male	30	67	68
	Total	60	135	137
	Female	40	87	91
Belgium	Male	40	87	91
_	Total	79	174	182
	Female	21	59	66
Bulgaria	Male	21	59	66
	Total	43	119	132
	Female	15	33	36
Croatia	Male	15	33	36
	Total	30	67	72
	Female	4	9	8
Cyprus	Male	4	9	8
	Total	7	18	16
	Female	33	86	109
Czech Republic	Male	33	86	109
	Total	65	171	218
	Female	22	42	44
Denmark	Male	22	42	44
	Total	Total         44         83         88	88	
	Female	4	12	11
Estonia	Male	4	12	11
	Total	8	24	23
	Female	20	42	41
Finland	Male	20	42	41
	Total	40	84	83
	Female	246	491	515
France	Male	246	491	515
	Total	491	982	1030
	Female	253	616	605
Germany	Male	253	616	605
	Total	505	1233	1209
	Female	34	83	103
Greece	Male	34	83	103
	Total	68	166	206
	Female	36	77	97
Hungary	Male	36	77	97
	Total	72	154	195
	Female	17	38	47
Ireland	Male	17	38	47
	Total	34	76	93
	Female	176	394	512
Italy	Male	176	394	512
	Total	352	787	1024

	Female	7	18	17
Latvia	Male	7	18	17
	Total	13	37	33
	Female	12	25	23
Lithuania	Male	12	25	23
	Total	24	51	46
	Female	2	4	5
Luxembourg	Male	2	4	5
	Total	4	9	10
	Female	2	4	4
Malta	Male	2	4	4
	Total	3	7	7
	Female	62	128	128
Netherlands	Male	62	128	128
	Total	123	257	255
	Female 140 368 376	376		
Poland	Male	140	368	376
	Total	281	736	752
	Female	34	74	97
Portugal	Male	34	74	97
	Total	69	149	194
	Female	67	163	188
Romania	Male	67	163	188
	Total	134	327	376
	Female	20	51	56
Slovakia	Male	20	51	56
	Total	40	102	111
	Female	6	16	19
Slovenia	Male	6	16	19
	Total	12	32	38
	Female	135	338	487
Spain	Male	135	338	487
	Total	271	676	974
	Female	36	78	75
Sweden	Male	36	78	75
	Total	72	156	150
	Female	243	536	514
United Kingdom	Male	243	536	514
	Total	487	1073	1027

### **Appendix II: Open Questions**

To assess response behaviour towards open questions, we asked participants to briefly state their wishes for 2015. The following table provides a randomly selected overview of 100 responses.

Table: 100 randomly selected answers to the question "If you had one wish for 2015, what would it be?"

Country	<b>Birth Year</b>	Gender	If you had one wish for 2015, what would it be?
Spain	1978	male	Felicidad
Greece	1980	male	Ευτυχία, Ευημερία και Υγεία σε όλους!
Finland	1998	female	I wish that there would not be any killing.
Romania	1990	male	mai multi bani
United Kingdom	2000	male	To get a new job
United Kingdom	1986	female	happiness and love
Poland	1987	female	Sto kolejnych życzeń.
United Kingdom	1982	male	happiness
Hungary	1997	female	Sok pénz.
Italy	1992	male	Dare ai giovani italiani un'opportunità nel mondo lavorativo
Poland	1993	female	Założyć rodzinę
Spain	1990	male	Menos políticos corruptos
Poland	1994	female	Być szczęśliwa.
Italy	1978	male	un governo serio
France	1992	male	Avoir une voiture
United Kingdom	1998	female	Get a boyfriend
France	1988	female	eradiquer la faim dans le monde car nous en avons plus que largement les moyens
Netherlands	1977	female	dont fight and kill over religion or country. choose life and let be
Germany	2000	female	Dass die menschen netter werden
Poland	1995	female	Dobrze platna stala praca.
Germany	1996	male	Mein Abitur zu schaffen
France	1996	male	la liberté et un monde totalement pacifiste
France	1985	male	Pas de guerre
Greece	2000	male	Να φύγει η κρίση από την Ελλάδα!
Germany	1992	male	Weltfrieden
Germany	1992	female	mich Selbstständig zu machen
Italy	1981	male	Successo
Slovakia	1990	male	Zdravie
Spain	1984	female	comprar un coche
Germany	1990	male	gesund bleiben
Romania	1997	female	ca omenirea să fie mai bună
Germany	1981	male	Glück
United Kingdom	1995	male	To make new friends
United Kingdom	2000	female	For everyone to receive the things they need
Italy	1996	male	lavorare
Greece	1977	male	Υγεία και ευτυχία σε όλο τον κοσμο
Netherlands	1929	female	smile for what u are , ur worth it
Poland	1994	female	Pokój na świecie
Italy	1980	male	più soldi e meno tasse
Denmark	2000	female	No racism
Germany	1979	female	Ruhe
Germany	1981	male	Reichtum
Spain	1981	male	No más guerras.
United Kingdom	1993	female	Romantic trip with my partner
Bulgaria	1980	male	щастие
Austria	1990	male	gesundheit für mich und meine familie
Denmark	1991	male	Work more

France	1995	female	etre amoureuse et heureuse
Hungary	1980	female	olyan jövedelem, hogy tudjunk előre lépni
Spain	1987	female	gue hubiera paz en todo el mundo
Denmark	1996	female	To find love
Romania	1990	male	Sa fiu sănătos
France	1995	female	Être heureuse
Romania	1984	male	sa am super puteri
Belgium	1990	male	good health
France	1979	female	la santé
Italy	1974	male	trovare la cura al cancro
Italy	1999	female	risolvere la crisi economica che c'è in Italia
Czech Republic	1993	female	Aby byl světový mír.
Poland	1995	male	nauczył się gotować
Spain	1982	male	Paz
Spain	1997	male	Que me toque la loteria
Spain	1999	male	La paz mundial
Italy	1981	male	Salute
Italy	1989	female	SUCCESSO
Belgium	1992	male	Healthness
France	1978	male	La vie
France	1988	male	Devenir papa
Bulgaria	1996	male	Нека всички бъдат по - добри един към друг.
France	1990	female	La paix
France	1996	male	Un gros progrès écologique international
France	1987	male	Rien
Spain	1977	male	mayor grado de bienestar
Spain	1983	male	conseguir otro trabajo
Spain	1980	female	que aprendiéramos a respetar y amar al prójimo en lugar de tantas peleas, verbales o no, guerras y absurdas muertes por dinero e intereses de quienes estan en el poder
United Kingdom	1991	female	Money
Denmark	1996	female	Luck
Netherlands	1990	male	no wars
Spain	1979	male	Salud dinero y amor
Spain	1984	male	lotería
Poland	1980	female	wygrac milion
Austria	1994	female	Glück
Sweden	1993	female	bless you
Austria	1996	female	Ein besseres Bildungssystem
Poland	1990	male	Pokój na świecie
Romania	1998	male	schimbare
Hungary	1996	female	Olcsóbb áruk
Germany	1980	fomalo	
Germany	1500	Ternale	.,
Bulgaria	1990	female	Ausbildungsabschluss
Duigaria	1990 1991	female female	лу Ausbildungsabschluss здраве
Germany	1990 1991 1990	female female male	Ausbildungsabschluss здраве politische ruhe in europa
Germany France	1990 1991 1990 1994	female female male male	Ausbildungsabschluss здраве politische ruhe in europa Ne plus penser au profit.
Germany France Germany	1990 1991 1990 1994 1987	female female male male female	Ausbildungsabschluss здраве politische ruhe in europa Ne plus penser au profit. Weltfrieden
Germany Germany Germany Germany	1990 1991 1990 1994 1987 1981	female female male female female female	Ausbildungsabschluss здраве politische ruhe in europa Ne plus penser au profit. Weltfrieden bezahlbare mieten und Gesundheit
Germany Germany Germany Germany	1990 1991 1990 1994 1987 1981 1994	female female male male female female female	Ausbildungsabschluss здраве politische ruhe in europa Ne plus penser au profit. Weltfrieden bezahlbare mieten und Gesundheit Geld
Germany France Germany Germany Bulgaria	1990 1991 1990 1994 1987 1981 1994 1976	female female male male female female female male	Ausbildungsabschluss здраве politische ruhe in europa Ne plus penser au profit. Weltfrieden bezahlbare mieten und Gesundheit Geld Нека всички бъдат по - добри един към друг.
Germany France Germany Germany Bulgaria Austria	1990 1991 1990 1994 1987 1981 1994 1976 1979	female female male male female female female male male	Ausbildungsabschluss здраве politische ruhe in europa Ne plus penser au profit. Weltfrieden bezahlbare mieten und Gesundheit Geld Нека всички бъдат по - добри един към друг. sorgenfreiheit
Germany France Germany Germany Bulgaria Austria Hungary	1990 1991 1990 1994 1987 1987 1981 1994 1976 1979 1991	female female male male female female female male male male	Ausbildungsabschluss здраве politische ruhe in europa Ne plus penser au profit. Weltfrieden bezahlbare mieten und Gesundheit Geld Hека всички бъдат по - добри един към друг. sorgenfreiheit Minden koldus jól éljen
Germany France Germany Germany Bulgaria Austria Hungary Italy	1990 1991 1990 1994 1987 1987 1981 1994 1976 1979 1991 1994	female female male male female female female male male male	Ausbildungsabschluss здраве politische ruhe in europa Ne plus penser au profit. Weltfrieden bezahlbare mieten und Gesundheit Geld Heка всички бъдат по - добри един към друг. sorgenfreiheit Minden koldus jól éljen Studiare

### **Appendix III: Project Timeline**

The following provides a quick overview of the project timeline. The entire project lasted for about 10 weeks (including the winter break vacation). Setting up and implementing the survey, and visualising the results took up the largest share of total project time.

Tables: Project Timeline for November 2014, December 2014 and January 2015.



# **Appendix IV: Smartphone Penetration** *Table: Smartphone User penetration by region and country 2013-2017*

% of Population					
Region	2013	2014	2015	2016	2017
Western Europe	38,7%	47,4%	55,6%	61,3%	65,8%
Norway	58,0%	68,0%	78,3%	86,2%	89,1%
Sweden	50,2%	56,7%	63,2%	68,8%	74,1%
UK	48,4%	53,7%	58,2%	62,2%	65,8%
Denmark	48,3%	58,6%	68,9%	77,0%	83,2%
Finland	45,0%	53,6%	60,4%	68,3%	75,4%
Netherlands	44,2%	54,1%	64,0%	71,8%	79,3%
Spain	40,9%	50,3%	58,1%	62,4%	65,8%
France	35,1%	46,0%	53,1%	58,7%	63,6%
Germany	34,6%	43,7%	55,4%	63,1%	69,9%
Italy	33,3%	41,8%	50,8%	55,9%	57,8%
Other	35,4%	43,6%	51,4%	56,8%	61,1%
Central & Eastern Europe	29,3%	39,1%	46,6%	53,6%	59,5%
Russia	27,3%	37,6%	45,1%	52,9%	59,3%
Other	30,3%	39,9%	47,4%	54,0%	59,6%

#### Source: eMarketer

### **Appendix V: Some Results**

Most of the results of this survey are proprietary and confidential. A selection of results, however, is made available at the following website: http://dlrsch.com/ep\_results

A quick snapshot: Real Madrid is the favourite team to win the 2014/2015 Champions League and Google is the most popular tech-brand, followed by Microsoft, Apple and WhatsApp.