

**Beyond the walls
of the museum,**
what other big data is out there
and how can we learn from it?



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Data Synthesis



SURVEY

Why?

- Why did you buy your smartphone in an offline store?
- What were the main difficulties during the buying process?
- What made you decide on the Galaxy S?

BEHAVIORAL DATA

What is she doing?

09:30 She has been exposed to a Samsung banner

09:31 She googles: "best smartphone 2017"

09:32 goes to www.apple.com/iphone

09:40 visits www.Samsung.com/galaxy

09:45 reads customer reviews at <http://www.trustedreviews.com/opinions/>

PROFILING

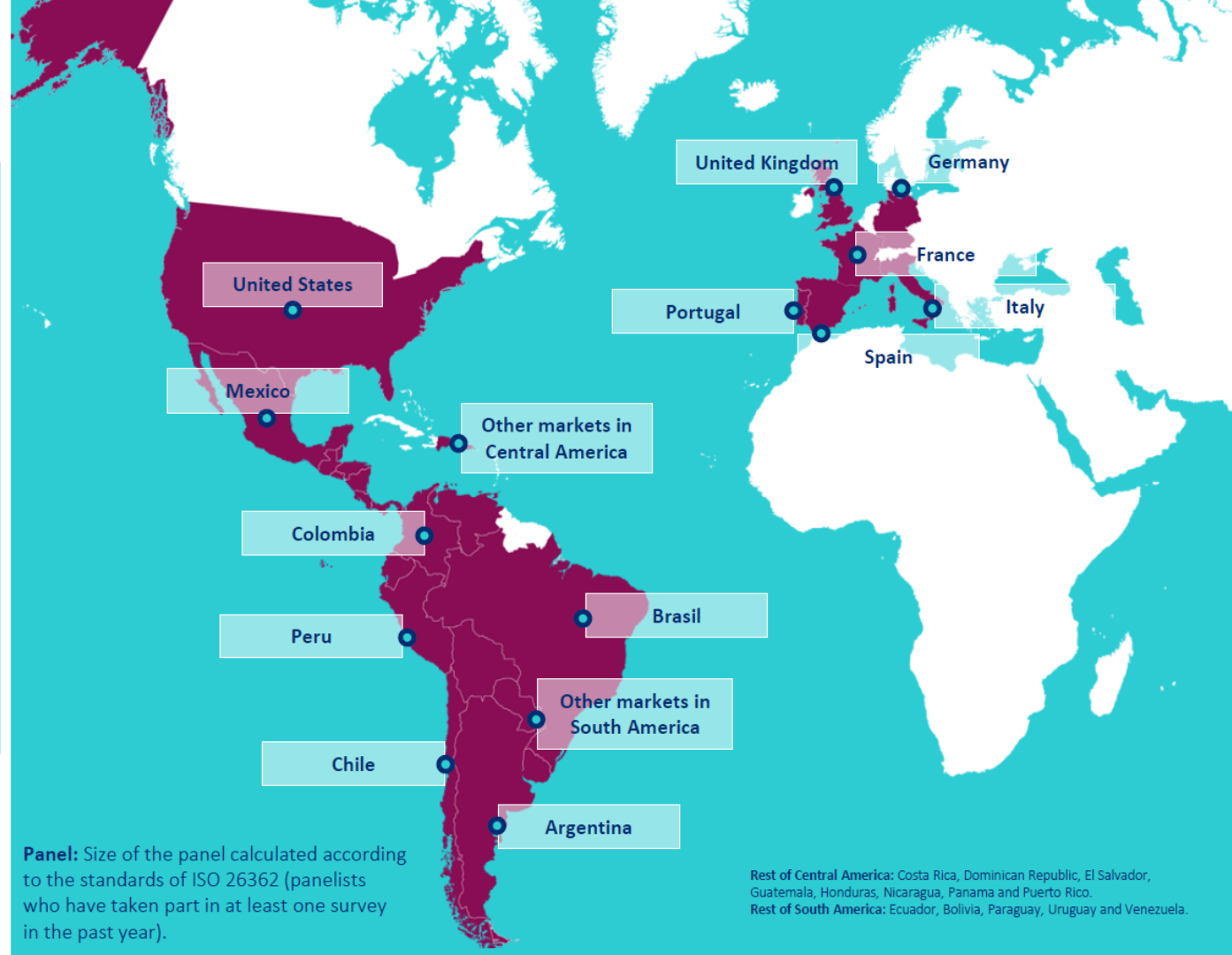
Who is she?

- Woman of 32 years
- Owns an iPhone
- She bought a new car last October
- Plans to go on holiday next month



OUR PANEL Worldwide

	Traditional	Behavioural
Argentina	217,179	8,120
Brazil	388,926	12,200
Chile	218,089	6,200
Colombia	152,935	8,400
France	139,098	Q2 2018
Germany	79,208	430
Italy	97,016	Q2 2018
Mexico	280,634	11,165
Peru	119,010	2,025
Portugal	28,401	1,685
Spain	199,079	12,840
UK	133,466	1,985
USA	218,865	5,950
Other	29,164	



Panel: Size of the panel calculated according to the standards of ISO 26362 (panelists who have taken part in at least one survey in the past year).

Rest of Central America: Costa Rica, Dominican Republic, El Salvador, Guatemala, Honduras, Nicaragua, Panama and Puerto Rico.
Rest of South America: Ecuador, Bolivia, Paraguay, Uruguay and Venezuela.



[illegible]

A photograph of a lightbulb placed on a chalkboard. The chalkboard has several hand-drawn white circles and lines, suggesting a brainstorming or idea-generation process. The lightbulb is positioned in the center, with lines radiating from it towards the circles, symbolizing the flow of ideas. The entire image is framed by a dark border.

A man with a mustache and glasses is holding a small, dark, spherical object with a metallic band in his hand. The object appears to be a piece of jewelry or a small robot. The background is dark and out of focus.



List of web sites

National
museums
(MNAC)



Sports
museums
(Santiago
Bernabéu, RM)



Historic
buildings
(Mezquita
de Córdoba)



Tour guides
(Civitatis)



How is the navigation data set?



	panelist_id	url	domain	used_at	duration	device
42	011fc3d2476b2823	www.ticketea.com/	ticketea.com	2017-11-26 14:44:53	2	mobile
43	011fc3d2476b2823	www.ticketea.com/	ticketea.com	2017-11-26 14:45:02	21	mobile
44	0145a04d87b4503b	affiliate.ticketea.com/	ticketea.com	2017-02-23 02:17:27	2	mobile
45	0151935374af07da	www.ivam.es/exposiciones/sons-il%2c%b7lustrats-grans-il%...	ivam.es	2017-12-14 14:43:28	63	mobile
46	0151c6033a29961d	www.civitatis.com/roma?aid=100&gclid=Cj0KCQjw9afOBRD...	civitatis.com	2017-09-26 09:58:13	0	mobile
47	0151c6033a29961d	www.civitatis.com/roma/actividades/	civitatis.com	2017-09-26 09:58:13	0	mobile
48	0151c6033a29961d	www.civitatis.com/roma/tour-5-dias-italia	civitatis.com	2017-09-26 09:59:38	95	mobile
49	0151c6033a29961d	www.civitatis.com/roma/actividades/	civitatis.com	2017-09-26 10:01:13	11	mobile
50	0153d95d73f8f2b1	www.ticketea.com/	ticketea.com	2017-10-28 13:49:44	1	mobile
51	018236616788b781	www.mezquitadecordoba.org/venta-entradas-mezquita-cor...	mezquitadecordoba.org	2017-01-17 22:33:32	18	mobile
52	018236616788b781	www.mezquitadecordoba.org/visita-mezquita-regular.asp	mezquitadecordoba.org	2017-01-17 22:33:50	39	mobile
53	018236616788b781	www.mezquitadecordoba.org/visita-mezquita-regular.asp	mezquitadecordoba.org	2017-01-17 22:35:46	14	mobile
54	018236616788b781	www.mezquitadecordoba.org/visitas-mezquita-cordoba.asp	mezquitadecordoba.org	2017-10-11 11:44:25	0	mobile
55	018236616788b781	www.mezquitadecordoba.org/visitas-mezquita-cordoba.asp	mezquitadecordoba.org	2017-10-21 14:33:22	21	mobile
56	018236616788b781	www.mezquitadecordoba.org/visita-mezquita-regular.asp	mezquitadecordoba.org	2017-10-21 14:33:43	33	mobile
57	018236616788b781	www.mezquitadecordoba.org/entradas-mezquita-cordoba.asp	mezquitadecordoba.org	2017-11-03 13:04:37	361	mobile
58	018236616788b781	www.mezquitadecordoba.org/visita-mezquita-privada.asp	mezquitadecordoba.org	2017-11-13 08:37:40	0	mobile
59	018236616788b781	www.mezquitadecordoba.org/venta-entradas-mezquita-cor...	mezquitadecordoba.org	2017-11-14 09:50:55	615	mobile
60	019b6ffaf5d098b3	www.2.museothyssen.org/thyssen/visita_virtual_permanente	museothyssen.org	2017-10-08 17:20:33	55	mobile
61	019b6ffaf5d098b3	www.2.museothyssen.org/thyssen/visita_virtual_permanente...	museothyssen.org	2017-10-08 17:21:28	11	mobile
62	019b6ffaf5d098b3	www.2.museothyssen.org/thyssen/visita_virtual_2013/m2?on...	museothyssen.org	2017-10-08 17:21:39	114	mobile



How did we get this data?

- Premium users: meter installed
- Collected navigation data from Spain in 2017
 - Number of users: 3879
 - Number of pageviews: 71081



First attempts: counting observations

- Group by domain name
 - Popularity of web sites
- Compute real visits and group again
 - Tackle overestimation

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44	0145a04d87b4503b	affiliate.ticketea.com/	ticketea.com	2017-02-23 02:17:27	2	mobile
45	0151935374af07da	www.ivam.es/exposiciones/sons-il%2b7lustrats-grans-il%..	ivam.es	2017-12-14 14:43:28	63	mobile
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48	0151c6033a29961d	www.civitatis.com/roma/tour-5-dias-italia	civitatis.com	2017-09-26 09:59:38	95	mobile
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52	018236616788b781	www.mezquitadecordoba.org/visita-mezquita-regular.asp	mezquitadecordoba.org	2017-01-17 22:33:50	39	mobile
53	018236616788b781	www.mezquitadecordoba.org/visita-mezquita-regular.asp	mezquitadecordoba.org	2017-01-17 22:35:46	14	mobile
54	018236616788b781	www.mezquitadecordoba.org/visitas-mezquita-cordoba.asp	mezquitadecordoba.org	2017-10-11 11:44:25	0	mobile
55	018236616788b781	www.mezquitadecordoba.org/visitas-mezquita-cordoba.asp	mezquitadecordoba.org	2017-10-21 14:33:22	21	mobile
56	018236616788b781	www.mezquitadecordoba.org/visita-mezquita-regular.asp	mezquitadecordoba.org	2017-10-21 14:33:43	33	mobile
57	018236616788b781	www.mezquitadecordoba.org/entradas-mezquita-cordoba.asp	mezquitadecordoba.org	2017-11-03 13:04:37	361	mobile
58	018236616788b781	www.mezquitadecordoba.org/visita-mezquita-privada.asp	mezquitadecordoba.org	2017-11-13 08:37:40	0	mobile
59	018236616788b781	www.mezquitadecordoba.org/venta-entradas-mezquita-cor...	mezquitadecordoba.org	2017-11-14 09:50:55	615	mobile
60	019b6ffaf5d098b3	www2.museothyssen.org/thyssen/visita_virtual_permanente	museothyssen.org	2017-10-08 17:20:33	55	mobile
61	019b6ffaf5d098b3	www2.museothyssen.org/thyssen/visita_virtual_permanente...	museothyssen.org	2017-10-08 17:21:28	11	mobile
62	019b6ffaf5d098b3	www2.museothyssen.org/thyssen/visita_virtual_2013/m2?on...	museothyssen.org	2017-10-08 17:21:39	114	mobile



Getting the users profile

We know a lot about our panelists

	panelist_id	url	domain	used_at	duration	device
1	000140569144c377	www.ticketea.com/	ticketea.com	2017-09-08 23:26:59	101	mobile
2	0002337dc86df4b4	www.museothyssen.org/exposiciones	museothyssen.org	2017-12-10 17:57:01	12	desktop
3	0002337dc86df4b4	www.museothyssen.org/exposiciones/monetboudin	museothyssen.org	2017-12-10 17:57:47	14	desktop
4	0002337dc86df4b4	www.museothyssen.org/exposiciones	museothyssen.org	2017-12-10 17:57:37	9	desktop
5	0002337dc86df4b4	www.museothyssen.org/coleccion	museothyssen.org	2017-12-10 17:54:56	29	desktop
6	0002337dc86df4b4	www.museothyssen.org/coleccion/artistas/gogh-vincent-van	museothyssen.org	2017-12-10 17:55:37	23	desktop
7	0002337dc86df4b4	www.museothyssen.org/coleccion/obras-maestras	museothyssen.org	2017-12-10 17:56:06	54	desktop
8	0002337dc86df4b4	www.museothyssen.org/buscador/tipo/exposicion	museothyssen.org	2017-12-10 17:57:14	23	desktop

	panelist_id	ageRange	gender	socialClass	kids	marital_status
1	000140569144c377	25_34	Male	High	No	Single
2	0002337dc86df4b4	more55	Female	Middle	Yes	Married
3	00075c82849f15dc	25_34	Female	High	No	Married
4	00206b2810cb5fa3	more55	Female	Middle	No	Widow
5	0027f436bfc617d8	45_54	Male	High	Yes	Married
6	00331810b021f03d	less25	Female	High	No	Single
7	003b313541293448	35_44	Male	Middle	Yes	Married
8	003c160d88367c30	35_44	Male	Middle	Yes	Married



	panelist_id	url	domain	used_at	duration	device	ageRange	gender	socialClass	kids	marital_status
1	000140569144c377	www.ticketea.com/	ticketea.com	2017-09-08 23:26:59	101	mobile	25_34	Male	High	No	Single
2	0002337dc86df4b4	www.museothyssen.org/exposiciones	museothyssen.org	2017-12-10 17:57:01	12	desktop	more55	Female	Middle	Yes	Married
3	0002337dc86df4b4	www.museothyssen.org/exposiciones/monetboudin	museothyssen.org	2017-12-10 17:57:47	14	desktop	more55	Female	Middle	Yes	Married
4	0002337dc86df4b4	www.museothyssen.org/exposiciones	museothyssen.org	2017-12-10 17:57:37	9	desktop	more55	Female	Middle	Yes	Married
5	0002337dc86df4b4	www.museothyssen.org/coleccion	museothyssen.org	2017-12-10 17:54:56	29	desktop	more55	Female	Middle	Yes	Married
6	0002337dc86df4b4	www.museothyssen.org/coleccion/artistas/gogh-vincent-van	museothyssen.org	2017-12-10 17:55:37	23	desktop	more55	Female	Middle	Yes	Married
7	0002337dc86df4b4	www.museothyssen.org/coleccion/obras-maestras	museothyssen.org	2017-12-10 17:56:06	54	desktop	more55	Female	Middle	Yes	Married
8	0002337dc86df4b4	www.museothyssen.org/buscador/tipo/exposicion	museothyssen.org	2017-12-10 17:57:14	23	desktop	more55	Female	Middle	Yes	Married



Getting the users profile

What for?

- Data not corresponding to expectations: targeted campaigns
- Finding potential users
- Know your visitors: retention



Getting the users profile

- Use of more personal data
 - Professional status
 - Use of social media
 - Educational level
 - Press they read
 - Internet connection services at home
 - ... and so on



Getting the users profile

KPIs from the navigation data:

- Time frames of access
most popular time windows of online navigation
- Specific periods of access (day/month...)
impact of a campaign on a specific day/month
find out most popular periods
- Device used to navigate
detection of possible issues



Detection of online purchases

- Set of purchase urls is needed
- Domains considered:
 - museoreinasofia.es
 - sagradafamilia.org
 - patrimonionacional.es
 - cac.es
- Example: merge it with age and time frame of access



The use of pre-post data

- Where did buyers go after purchasing tickets online?
- Where did they come from?

	panelist_id	url	domain	used_at	duration	device
1	000140569144c377	www.ticketea.com/	ticketea.com	2017-09-08 23:26:59	101	mobile
2	003c160d88367c30	www.civitatis.com/	civitatis.com	2017-03-18 16:28:36	1	mobile
3	003c160d88367c30	www.civitatis.com/	civitatis.com	2017-03-18 16:28:48	67	mobile
4	003c160d88367c30	tickets.cac.es/	cac.es	2017-04-29 17:03:41	101	mobile
5	003c160d88367c30	www.cac.es/es/hemisferic/descubre-el-hemisferic/descubre..	cac.es	2017-08-07 16:29:24	26	mobile
6	003c160d88367c30	www.cac.es/es/hemisferic/proyecciones-y-horarios.html	cac.es	2017-08-07 16:29:50	0	mobile
7	003c160d88367c30	www.cac.es/es/hemisferic/proyecciones-y-horarios/proyecn...	cac.es	2017-08-07 16:29:50	24	mobile
8	003c160d88367c30	www.cac.es/es/hemisferic/proyecciones-y-horarios/proyecn...	cac.es	2017-08-07 16:30:14	0	mobile
9	003c160d88367c30	www.cac.es/es/hemisferic/proyecciones-y-horarios.html	cac.es	2017-08-07 16:30:31	0	mobile
10	003c160d88367c30	www.cac.es/es/hemisferic/proyecciones-y-horarios/proyecn...	cac.es	2017-08-07 16:30:31	4	mobile
11	003c160d88367c30	www.cac.es/es/hemisferic/proyecciones-y-horarios/horarios...	cac.es	2017-08-07 16:30:35	0	mobile
12	003c160d88367c30	www.cac.es/es/hemisferic/proyecciones-y-horarios/horarios...	cac.es	2017-08-07 16:30:35	9	mobile
13	003c160d88367c30	www.cac.es/es/hemisferic/proyecciones-y-horarios/proyecn...	cac.es	2017-08-07 16:30:44	3	mobile
14	003c160d88367c30	www.cac.es/es/hemisferic/proyecciones-y-horarios/horarios...	cac.es	2017-08-07 16:30:47	3	mobile
15	003c160d88367c30	www.cac.es/es/hemisferic/proyecciones-y-horarios/proyecn...	cac.es	2017-08-07 16:30:50	3	mobile
16	003c160d88367c30	www.cac.es/es/hemisferic/proyecciones-y-horarios/horarios...	cac.es	2017-08-07 16:30:53	6	mobile
17	003c160d88367c30	www.cac.es/es/hemisferic/planetarios-en-directo/Las-Noctu...	cac.es	2017-08-07 16:30:59	2	mobile
18	003c160d88367c30	www.cac.es/es/hemisferic/proyecciones-y-horarios/horarios...	cac.es	2017-08-07 16:31:01	92	mobile
19	00521c913df66a49	www.inspain.org/	inspain.org	2017-05-10 10:22:20	34	mobile



Let's move to the second part
of the workshop...

... R scripting!



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genuine data