A Work Project, presented as part of the requirements for the Award of a Masters Degree in Management from the NOVA – School of Business and Economics.

Business Model Design of There App – Strategic considerations for the development of a single-sided or multi-sided platform

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A Project carried out on the Field Lab Entrepreneurial Innovative Ventures, under the supervision of:

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Exhibit 1 – Description of There App

The version of the app currently available on the App Store broadcasts location information among networks of friends and non-friends, automatically creating a social landscape of its members. Personal information of users is not revealed, so as to prevent privacy and tracking issues, as well as to motivate people to be engaged in the system and remain willing to connect. In the case users opt-in with Facebook, they can indirectly get a visual representation of their friends' social outings (by distinguishing them on the map with a different color), even though they're not able to assess specifically who each person is. Furthermore, users can interact with those members of the network by connecting to them and requesting a live video-stream of their surroundings. The app further allows users to randomly join a live connection happening somewhere between other anonymous members and watch the video content being shared. A flick-to-alternate feature eases the process of changing between different connections. This feature tries to leverage on other popular passive media consumption habits such as television zapping[1]. There App delivers these capabilities by leveraging the smartphone's built-in GPS[2] to locate users and their phone's cameras to provide the media capturing. An HD video[3] quality standard (H.264) is deployed that optimizes data transmission speed and reliability, while maintaining a suitable overall quality in the process. The platform interconnects all these functions with third-party APIs[4] (e.g. Apple Maps[5]) and coordinates all network connections established between users, into one intuitive and seamless experience.

[1] Television zapping is the act of changing channels rapidly by remote control.
[2] The Global Positioning System (GPS) is a space-based satellite navigation system that provides location and time information anywhere on the planet, guaranteed there is unobstructed line of sight.
[3] High definition video (HD video) is video with a 720p or higher resolution. When distributed online it requires a minimum standard bit rate of 1.5 Mbps. video standards (IDC 2009).
[4] Application Programing Interface (API) is a set of functions and procedures that allow the creation of applications which access the features or data of an operating system, application, or other service.
[5] Apple Maps is a mapping service application available for iOS and developed by Apple Inc.

Figure 1: User Questionnaire Template

A brief warm-up.

1. What is your age?

2. What is your gender?

Male		Female	

3. What is your nationality?

4. What is your degree of studies?

Primary School		High School		Undergraduate Degree		MSc. Degree		PhD	

Now, for the interesting part.

5. How many times a day do you access a social network, on average? (Select only one option).

More than 10 times a day		5-10 times a day		1-5 times a day		I don't	

6. Do you have a smartphone?

Yes.		No.	

Please ignore questions 7 to 12 if you answered "No" to the previous question.

7. Please select the main uses you give to your smartphone:

Social networks	Games	Messaging apps	Entertainment (e.g. watching videos)	Watching live events	Searching the internet	News

8. How often do you share media content (e.g. videos, photos) to another person from your smartphone, on average? (Select only one option).

Several times a day		Once or twice a day		Once a week		Onces every few weeks		I never share any content	

9. Of the following locations, select those where you normally use your smartphone:

On-the-go	In a store	Restaurant or cafe	Bar or nightclub	Event (e.g. concert)

10. What are the main reasons for you to download an app?

Curiosity	Service Provided	My friends use it	Online reviews	Other

11. How do you usually hear about an app?

Websites/blogs	Social Networks	App Store, Google Play or equivalent	Friends	TV	Magazines

12. What is the largest amount you have ever paid for a mobile app ($ or €)? (Select only one option).

> 20		5 - 20		1 - 5		< 1		Never paid.	

13. For which of the following situations would you use a specific mobile app?

Knowing how a venue is before going there (e.g. a bar)	Showing someone else how a certain place looks like	Checking the weather at a remote place	Sharing what you're doing with friends	Seeing new places from around the world	Watching remote live events (e.g. concerts)

14. How often do you think you would use an app for the situations you chose your previous answer? (Select only one option).

Several times a day.		Once a day.		2-3 times a week.		2-3 times a month.		2-3 times a year.	

15. Would you be willing to pay for such a mobile app?

Yes		No	

16. Would you be willing to watch a video advertisement (10-20 seconds) instead?

Yes		No	

17. In which situation are you most frequently faced with advertisement when using your smartphone?

While using a search engine	While on a website	While watching a video on a website	While in an app	While watching a video in an app

18. What is your opinion on in-app ads that rely on your profile information to suggest you items you might want?

I welcome it		I'm against it		I'm indifferent	

Thank you for your collaboration!

Figure 2: Percent of responses to question 13 - "For which of the following situations would you use a specific mobile app?"

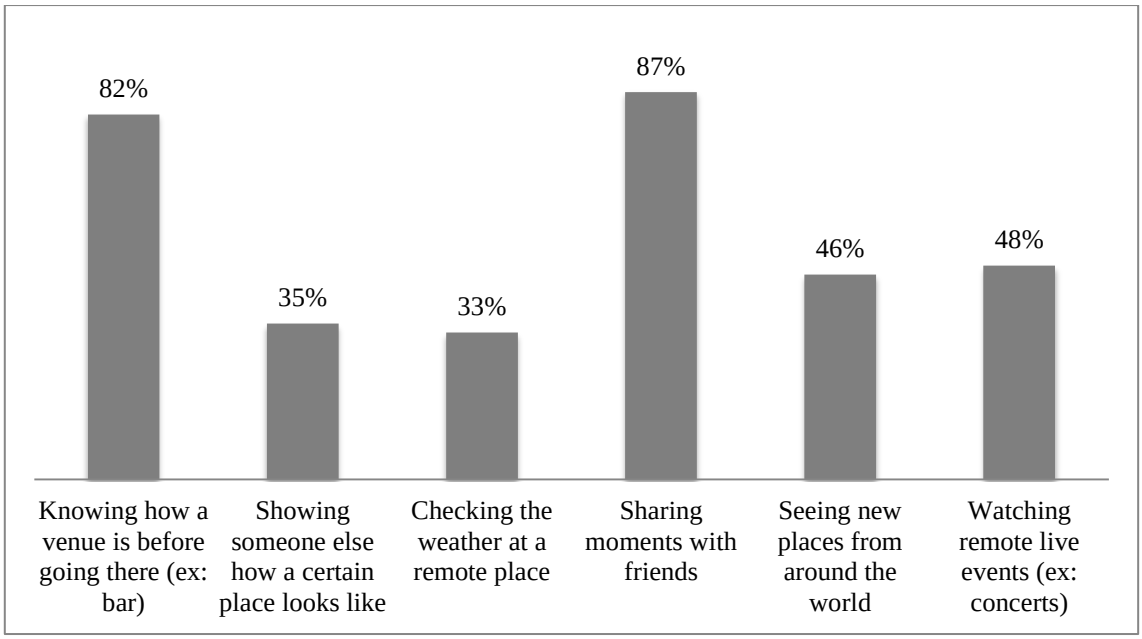


Figure 3: Percent of responses to question 14 - "How often do you think you would use an app for the situations you chose in Q10??"

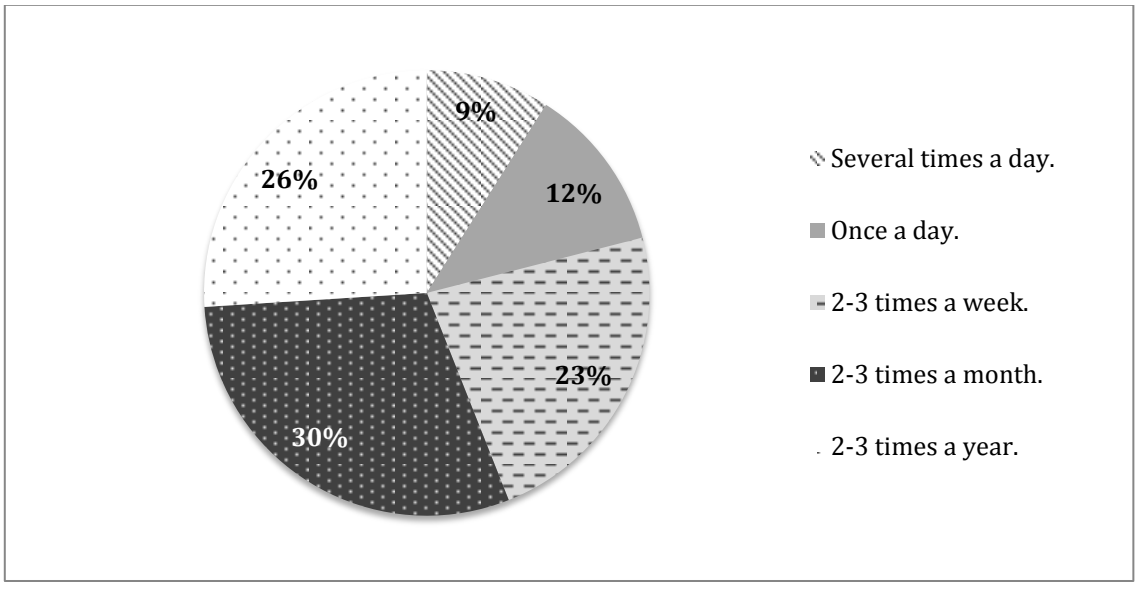


Figure 4: Percent of responses to question 9 - Of the following locations, select those where you normally use your smartphone.

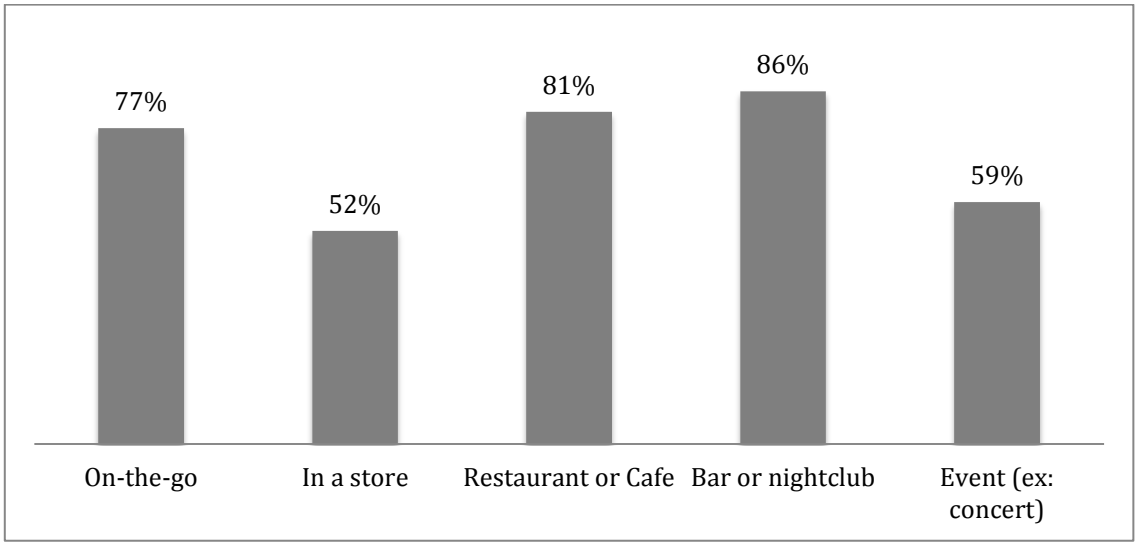


Figure 5: Percent of responses to question 12 - What is the largest amount you have ever paid for a mobile app ($ or €)?

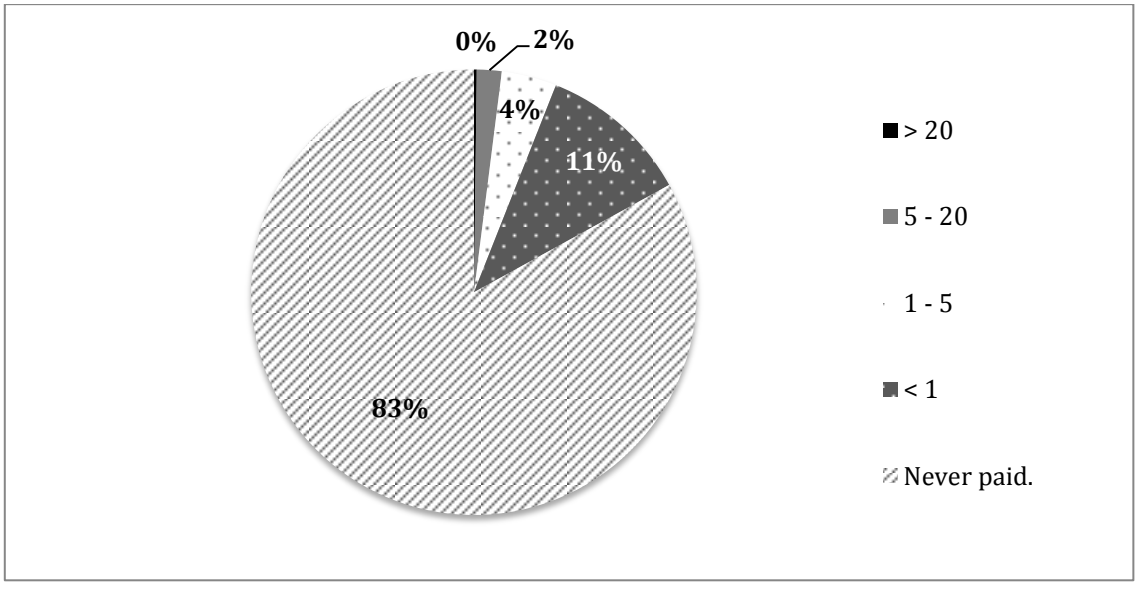


Figure 6: Percent of responses to question 15 - Would you be willing to pay for such a mobile app?

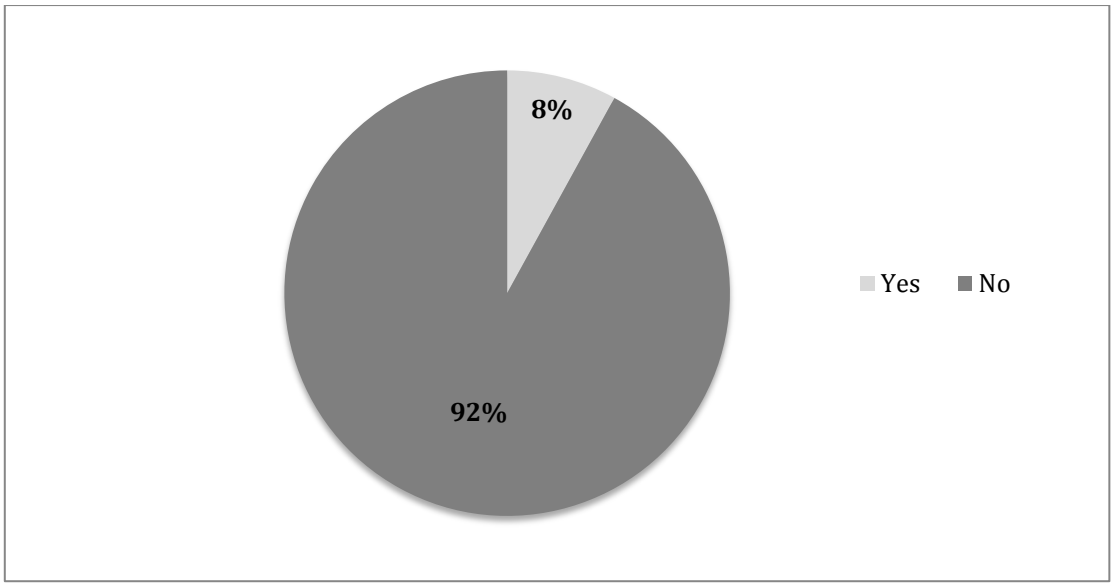


Figure 7: Percent of responses to question 16 – Would you be willing to watch a video advertisement (10-20 seconds) instead? (When asked about question 15)

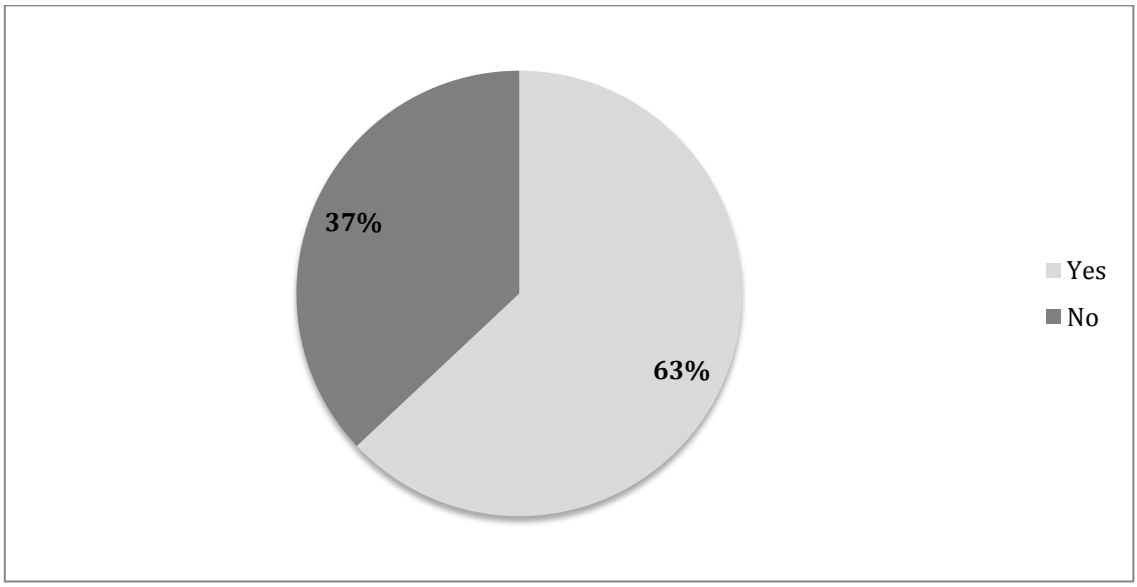


Figure 8: Percent of responses to question 18 – What is your opinion on in-app ads that rely on your profile information to suggest you items you might want?

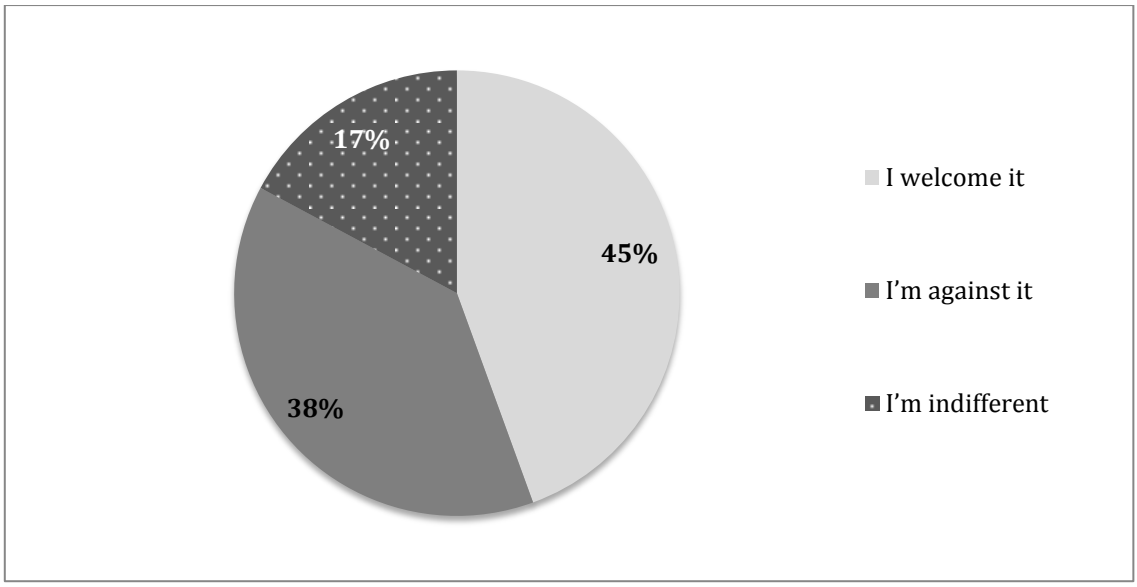


Figure 9: Percent of responses to question 17 – In which situation are you most frequently faced with advertisement when using your smartphone?

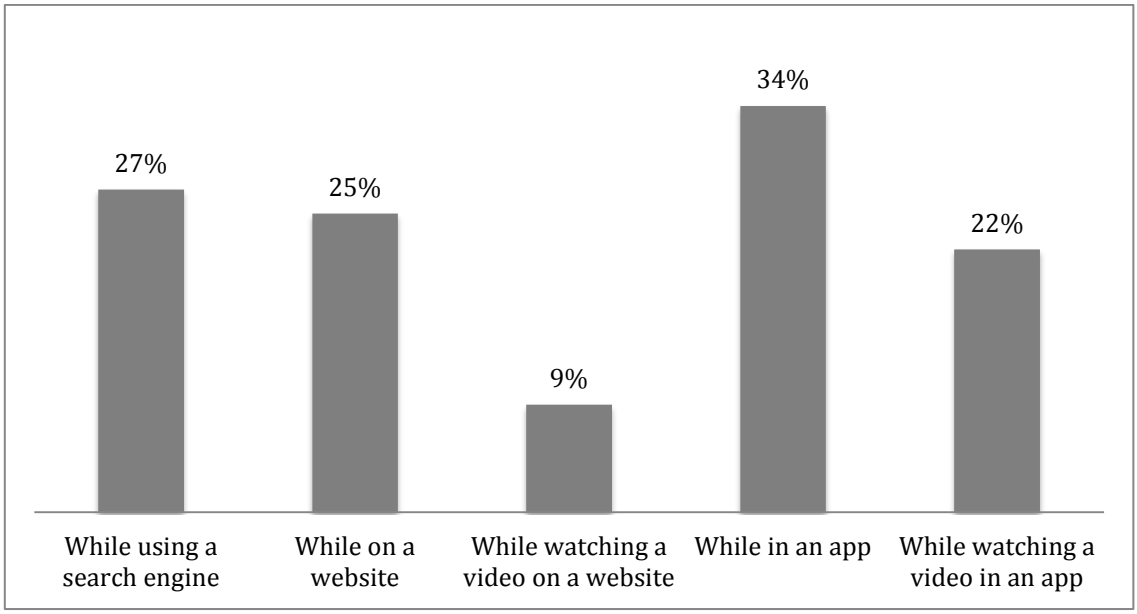


Figure 10: Percent of responses to question 11 – How do you usually hear about an app?

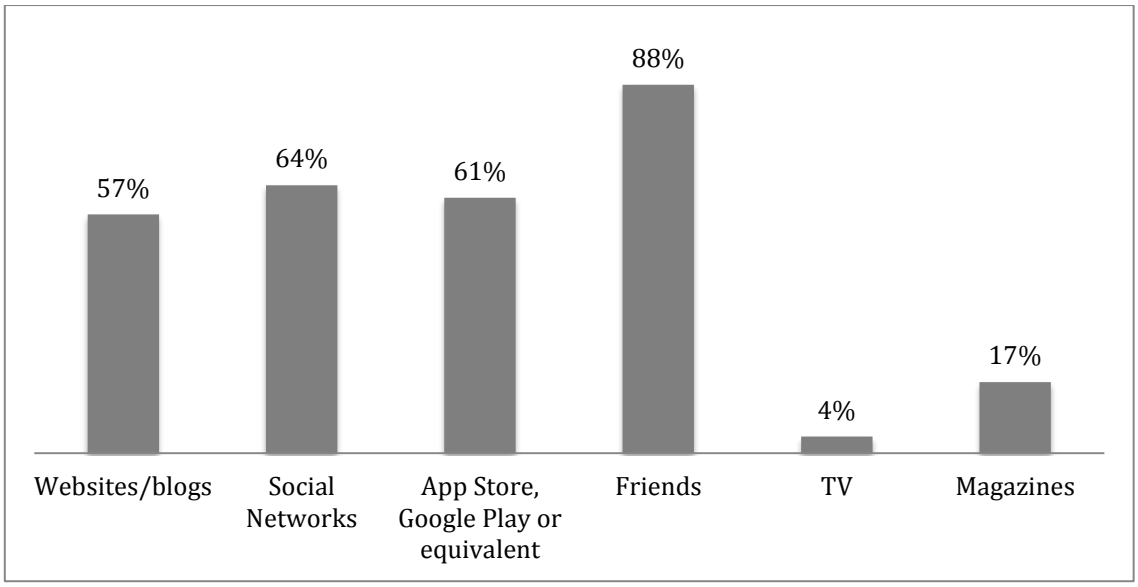


Figure 11: Industry Mapping

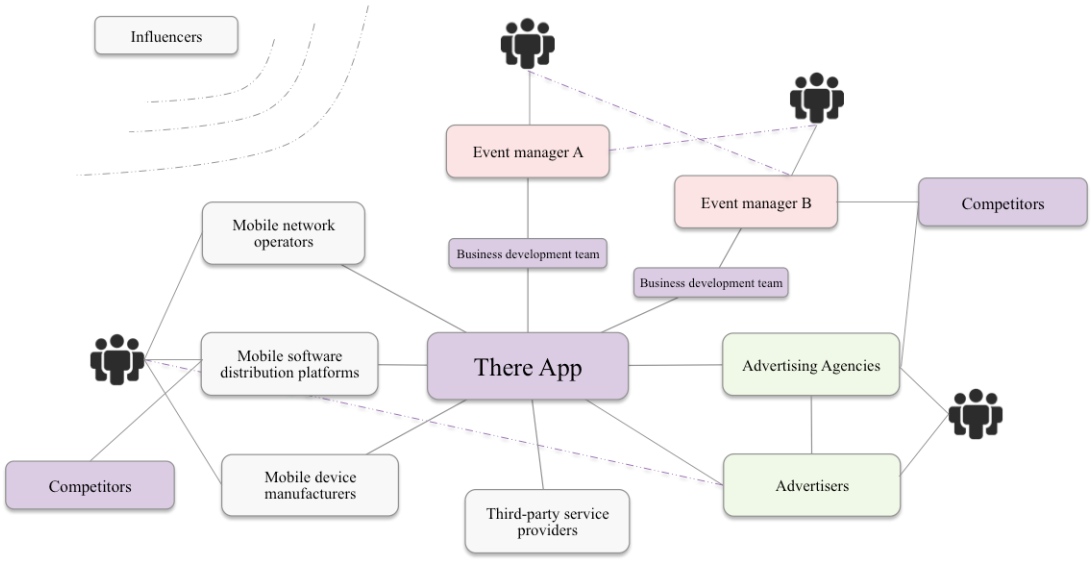
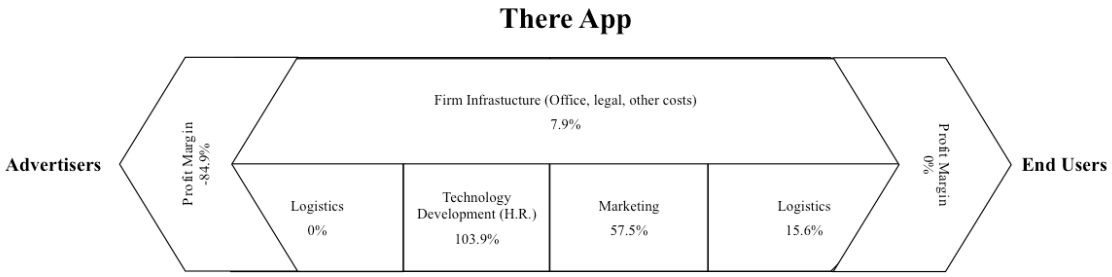
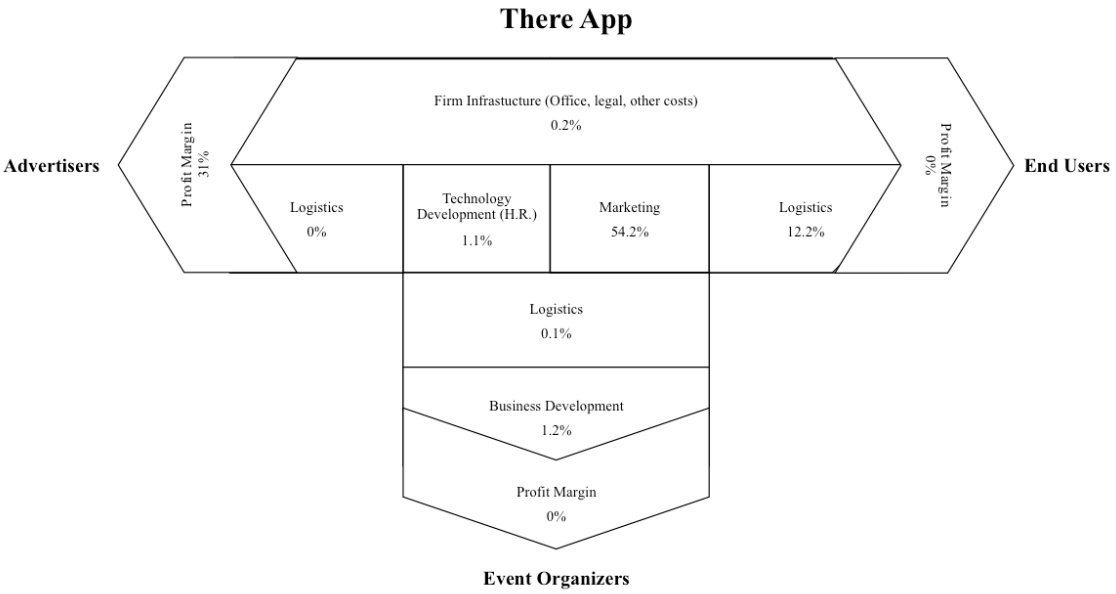


Figure 12: Value Chain at Platform Implementation Phase (December 2015)



(All values shown as percent of Revenue)

Figure 13: Value Chain at Platform Expansion Phase (December 2016)



(All values shown as percent of Revenue)

Figure 14: Projected Business Model Canvas

Key Partners	Key Activities	Value Propositions	Customer Relationships	Customer Segments
Mobile software distribution platforms Cloud computing service providers Third-party software providers Event Managers Government and public entities Colleges and Universities Exchange student associations Content Distribution Networks Advertising agencies	Software design and development. Hardware maintenance. Marketing efforts. Control and optimization of user engagement levels. Advertisers and advertising agencies acquisition and retention. Terms and contract negotiation. Controlling ad quality levels. Event managers' acquisition and retention. Terms and contract negotiation. Control and optimization of event quality levels.	Easily and quickly share and get access to live video footage. Make better decisions individually or as a group. Share moments with remote friends while experiencing them. Be entertained by "travelling" digitally. View live events and their location on the world map. Reach a segmented audience of active users with a high ROI, with rich media formats. Reach a broader audience for managed events. Increase attendees to managed events. Provide regular audience with a different perspective of the event.	Automated Services Customer Support Monthly or annual contracts Dedicated Personal Support Monthly or annual contracts Dedicated Personal Support	End users: - College students Advertisers and advertising agencies Event managers: - Student unions

Key Resources	Channels
Mobile App Hardware Human Resources Intellectual Property User data	Own mobile app Own website, social media pages and blog Mobile software distribution platforms Word-of-mouth Student Union's marketing channels Online advertising platforms Business development team Business development team Word-of-mouth

Cost Structure	Revenue Streams
Server Costs Firm Overhead (Office, legal, other costs) Human Resources Marketing	Derivative currency: user attention Advertising revenue: CPM rates Event fees

Caption: End users | Advertisers | Event managers | Company-wide

Table 1: Key Assumptions for Model- User Virality and Retention[6]

Initial User Set	100
Number of Referrals by Each New User	12
Conversion Rate of Referrals (percent)	10
Time to Complete Full Viral Cycle (days)	14
Timeframe (days)	30
Viral Coefficient	1.2
Monthly User Retention Rate (percent)	30

Table 2: Key Assumptions for Model – Events[7]

Average Monthly Contacts per Business Developer	30
Average Monthly Contacts	180
Conversion Rate (percent)	15
Average Number of Monthly Events per Student Union	2
Student Union Churn Rate (percent)	20
Average Event Duration (minutes)	120
Average Spectators per Event (Via There App)	5,000
Average User Viewing Time (minutes)	15

Table 3: Key Assumptions for Model – Revenue Model[8]

Average Display Banner CPM (€)	3
Average Video CPM (€)	18.08
Daily active users (percent)	20
Assumption: Each daily active user is presented with one display and one video banner ad.	
Average Revenue per Event (€)	50

[6] Due to lack of historical data, all assumptions are based on the surveys and interviews performed. Most interviewees stated confirmed that they hear about an app through various channels, but are more likely to covert to users if they hear about it from a friend. Three out of four interviewees further suggested that if they like a mobile app, they will suggest it to 10 or more friends in a short time-frame.
There App is expected to achieve viral growth since its coefficient is superior to 1 and its viral cycle time is moderately low.

[7] All assumptions are based on interviews performed with student unions representatives and company's experience.

[8] CPM rates are based on industry averages (Johnston 2014, (Kaplan 2013). 'Daily active users' is based on company's historical data. All assumptions were verified with There App.

Table 4: Key Assumptions for Model – Marketing[9]

	Facebook Ads	Google Adwords
Cost per Thousand Impressions (€)	3.674	2.021
Click Through Rate (percent)	2	1
Cost per Click (€)	0.184	0.202
Conversion Rate (percent)	10	3
Customer Acquisition Cost (€)	1.837	8.083

Table 5: Key Assumptions for Model – Server Pricing and Utilization[10]

Daily Active Users (percent)			20			
Average Daily Server Utilization per User (minutes)			1			
			Tokbox Opentok			
	First 10 thousand minutes	Next 90 thousand minutes	Next 400 thousand minutes	Next 1 million minutes	Next 3.5 million minutes	5+ million minutes
Base Price (€)	37	-	-	-	-	-
Price per Minute (€)	-	0.0035	0.0033	0.0031	0.0029	0.0026
Average Streaming Bit Rate (MBs per second)			0.1			
			Amazon Web Services S3			
Price per Gigabyte (€)			0.022			

[9] CPM, click-through and conversion rates are based on industry standards (Johnston 2014, (Kaplan 2013). In the model, only Facebook ads were considered given that their average CPM rate and ability to target segmented clients allowed for a higher ROI. Moreover, from the interviews conducted, the great majority of users stated they usually heard about new apps through social networks, as opposed to search engines and regular websites.

[10] Server pricing for users is based on service provider Tokbox (Tokbox. 2014), while pricing for events is based on Amazon Web Services S3 (Amazon Web Services, Inc. 2014). 'Daily Active Users' and 'Average Daily Server Utilization per User' are based on company's historical data. 'Average Streaming Bit Rate' is based on industry standards (IDC 2009).

Assumptions on daily active users derive from interviews conducted with potential users.

Table 6: Projected Monthly Active User (Viral and retention rates factored into model)

	Dec -14	Jan -15	Feb -15	Mar-15	Apr -15	May-15	Jun-15	Jul-15	Aug-15	Sep-15	Oct-15	Nov-15	Dec-15	Jan-16	Feb-16	Mar-16	Apr-16	May-16	Jun-16	Jul-16	Aug-16	Sep-16	Oct-16	Nov-16	Dec-16
	387	116	35	10	3	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		811	243	73	22	7	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
			1 437	431	129	39	12	3	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
				2 363	709	213	64	19	6	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
					3 732	1 120	336	101	30	9	3	1	0	0	0	0	0	0	0	0	0	0	0	0	0
						5 755	1 726	518	155	47	14	4	1	0	0	0	0	0	0	0	0	0	0	0	0
							8 744	2 623	787	236	71	21	6	2	1	0	0	0	0	0	0	0	0	0	0
								13 163	3 949	1 185	355	107	32	10	3	1	0	0	0	0	0	0	0	0	0
									19 694	5 908	1 772	532	160	48	14	4	1	0	0	0	0	0	0	0	0
										29 346	8 804	2 641	792	238	71	21	6	2	1	0	0	0	0	0	0
											43 613	13 084	3 925	1 178	353	106	32	10	3	1	0	0	0	0	0
Retained and New Users per Time-period cohort												64 699	19 410	5 823	1 747	524	157	47	14	4	1	0	0	0	0
													95 864	28 759	8 628	2 588	776	233	70	21	6	2	1	0	0
														141 926	42 578	12 773	3 832	1 150	345	103	31	9	3	1	0
															210 005	63 002	18 900	5 670	1 701	510	153	46	14	4	1
																310 626	93 188	27 956	8 387	2 516	755	226	68	20	6
																	459 344	137 803	41 341	12 402	3 721	1 116	335	100	30
																		679 150	203 745	61 123	18 337	5 501	1 650	495	149
																			1 004 021	301 206	90 362	27 109	8 133	2 440	732
																				1 484 181	445 254	133 576	40 073	12 022	3 607
																					2 193 857	658 157	197 447	59 234	17 770
																						3 242 757	972 827	291 848	87 554
																							4 793 031	1 437 909	431 373
																								7 084 333	2 125 300
																									22 874 016
Active Users	**387**	**927**	**1 715**	**2 878**	**4 595**	**7 133**	**10 884**	**16 428**	**24 622**	**36 733**	**54 633**	**81 089**	**120 191**	**177 983**	**263 400**	**389 646**	**576 238**	**852 021**	**1 259 628**	**1 862 070**	**2 752 478**	**4 068 501**	**6 013 581**	**8 888 407**	**25 540 538**

Figure 15: Active users – Concept Development (Dec. 2014) and Platform Implementation Phase (Jan. 2015 - Dec. 2015)

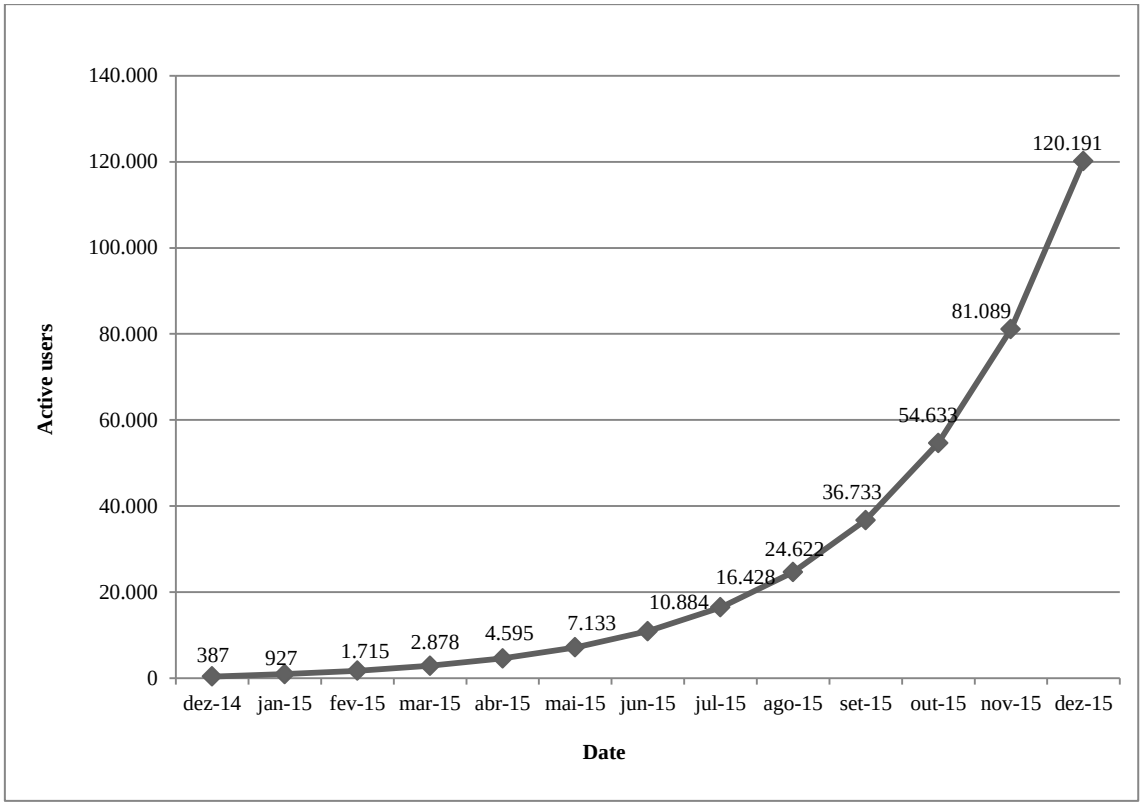


Figure 16: Active users - Platform Expansion Phase (Jan. 2016 - Dec. 2016)

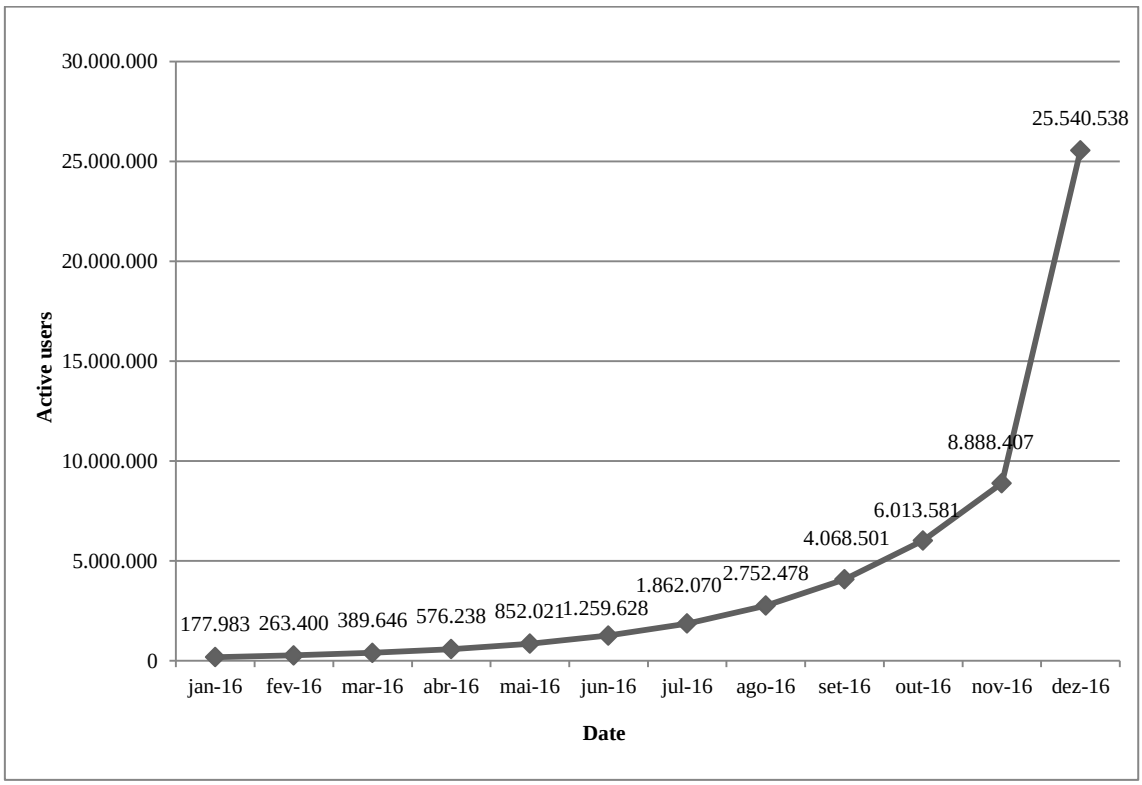


Table 7: Projected Monthly Event Managers and Events

	Jan-16	Feb-16	Mar-16	Apr-16	May-16	Jun-16	Jul-16	Aug-16	Sep-16	Oct-16	Nov-16	Dec-16
Total Student Unions	45	81	110	133	151	166	178	187	195	201	206	210
New Student Unions	45	45	45	45	45	45	45	45	45	45	45	45
Total Events	90	162	220	266	302	332	356	374	390	402	412	420

Table 8: Distribution of Variable and Fixed Costs Over Project's Lifetime

	Concept Development (Dec. '14)	Platform Implementation (Dec. '15)	Platform Expansion (Dec. '16)
Variable Costs	**1.2**	**8.4**	**17.9**
Server Costs	1.2	8.4	17.9
Fixed Costs	**98.8**	**91.6**	**82.1**
Firm Overhead (Office, legal, other costs)	11.3	4.3	0.2
H.R.	84.2	56.2	3.4
Marketing	3.2	31.1	78.5
Total	**100**	**100**	**100**

(All values in percent)

Figure 17: Distribution of Variable and Fixed Costs Over Project's Lifetime

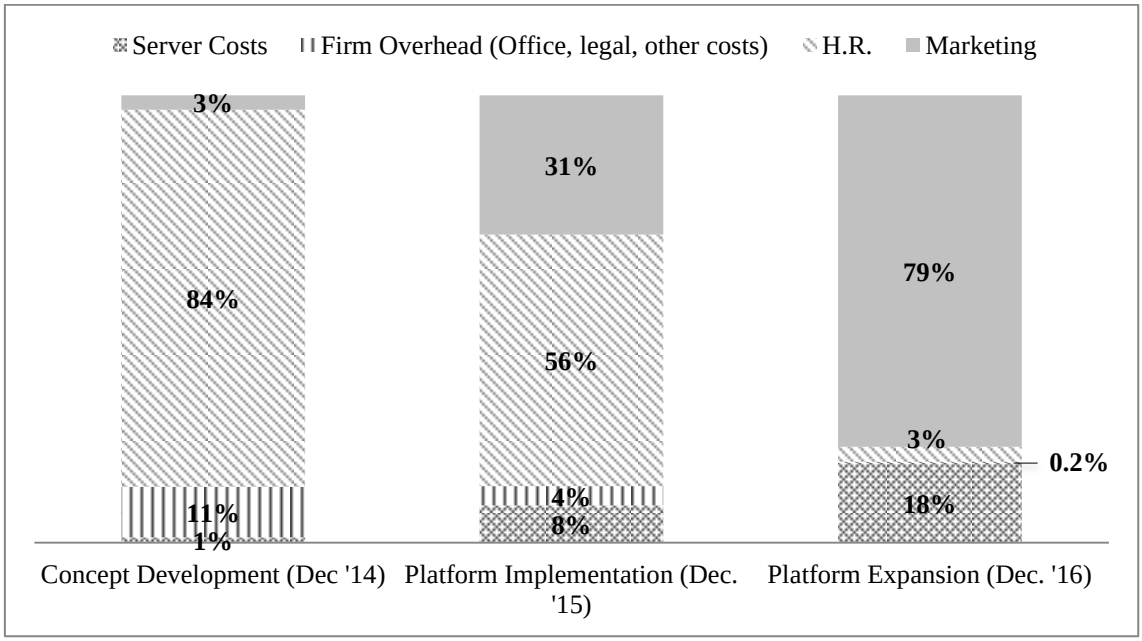


Table 9: There App's Financial Results – Concept Development Phase

	Oct-14	Nov-14	Dec-14
Number of Users	100	100	387
Number of Events	0	0	0
Advertis. Revenue (€)	0	0	0
Event Revenue (€)	0	0	0
Total Revenue (€)	0	0	0
User Server Costs (€)	37	37	37
Event Server Costs (€)	0	0	0
COGS (€)	37	37	37
Operating Profit (€)	-37	-37	-37
Gross Margin (percent)	-	-	-
Legal (€)	300	300	300
HR (€)	2600	2600	2600
Other (€)	50	50	50
Marketing (€)	100	100	100
Total Overhead Costs (€)	3050	3050	3050
EBITDA (€)	-3087	-3087	-3087
Cumulative EBITDA (€)	-3087	-6173	-9260

Table 10: There App's Financial Projections – Platform Implementation Phase

	Jan-15	Feb-15	Mar-15	Apr-15	May-15	Jun-15	Jul-15	Aug-15	Sep-15	Oct-15	Nov-15	Dec-15
Number of Users	927	1715	2878	4595	7133	10884	16428	24622	36733	54633	81089	120191
Number of Events	0	0	0	0	0	0	0	0	0	0	0	0
Advertis. Revenue (€)	0	0	364	581	902	1376	2078	3114	4645	6909	10255	15200
Event Revenue (€)	0	0	0	0	0	0	0	0	0	0	0	0
Total Revenue (€)	0	0	364	581	902	1376	2078	3114	4645	6909	10255	15200
User Server Costs (€)	37	38	62	98	151	230	346	509	749	1104	1629	2364
Event Server Costs (€)	0	0	0	0	0	0	0	0	0	0	0	0
COGS (€)	37	38	62	98	151	230	346	509	749	1104	1629	2364
Operating Profit (€)	-37	-38	302	483	751	1147	1732	2605	3896	5805	8626	12836
Gross Margin (percent)	#DIV/0!	#DIV/0!	82.9	83.1	83.2	83.3	83.4	83.7	83.9	84	84.1	84.4
Legal (€)	500	500	500	500	500	500	1000	1000	1000	1000	1000	1000
HR (€)	2600	15800	15800	15800	15800	15800	15800	15800	15800	15800	15800	15800
Other (€)	50	100	100	100	100	100	200	200	200	200	200	200
Marketing (€)	162	810	881	986	1140	1369	2408	2908	3646	4738	6353	8738
Total Overhead Costs (€)	3312	17210	17281	17386	17540	17769	19408	19908	20646	21738	23353	25738
EBITDA (€)	-3349	-17248	-16979	-16903	-16790	-16623	-17676	-17302	-16750	-15934	-14727	-12903
Cumulative EBITDA (€)	-12609	-29857	-46836	-63738	-80528	-97151	-114827	-132129	-148879	-164813	-179539	-192442

Table 11: There App's Financial Projections – Platform Expansion Phase

	Jan-16	Feb-16	Mar-16	Apr-16	May-16	Jun-16	Jul-16	Aug-16	Sep-16	Oct-16	Nov-16	Dec-16
Number of Users	177983	263400	389646	576238	852021	1259628	1862070	2752478	4068501	6013581	8888407	25540538
Number of Events	90	162	220	266	302	332	356	374	390	402	412	420
Advertis. Revenue (€)	22509	33311	49277	72874	107751	159300	235488	348094	514525	760511	1124078	3230000
Event Revenue (€)	4500	8100	11000	13300	15100	16600	17800	18700	19500	20100	20600	21000
Total Revenue (€)	27009	41411	60277	86174	122851	175900	253288	366794	534025	780611	1144678	3251000
User Server Costs (€)	3447	5033	7260	10551	15373	21663	30960	44701	65010	95027	139392	396369
Event Server Costs (€)	893	1607	2183	2639	2996	3294	3532	3710	3869	3988	4087	4167
COGS (€)	4340	6640	9442	13189	18369	24957	34492	48412	68879	99015	143479	400536
Operating Profit (€)	22669	34771	50835	72985	104482	150942	218796	318382	465146	681596	1001199	2850464
Gross Margin (percent)	83.9	84	84.3	84.7	85	85.8	86.3	86.8	87.1	87.3	87.5	87.7
Legal (€)	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000
HR (€)	75100	75100	75100	75100	75100	75100	75100	75100	75100	75100	75100	75100
Other (€)	500	500	500	500	500	500	500	500	500	500	500	500
Marketing (€)	16464	21675	29378	40762	57588	86456	123211	177536	257827	376497	551892	1760563
Total Overhead Costs (€)	97064	102275	109978	121362	138188	167056	203811	258136	338427	457097	632492	1841163
EBITDA (€)	-74396	-67505	-59143	-48377	-33706	-16114	14984	60247	126719	224499	368707	1009301
Cumulative EBITDA (€)	-266837	-334342	-393485	-441863	-475568	-491682	-476697	-416451	-289732	-65233	303474	1312775

Figure 18: There App's Projected Cumulative EBITDA (Oct. 2014 – Dec. 2016)

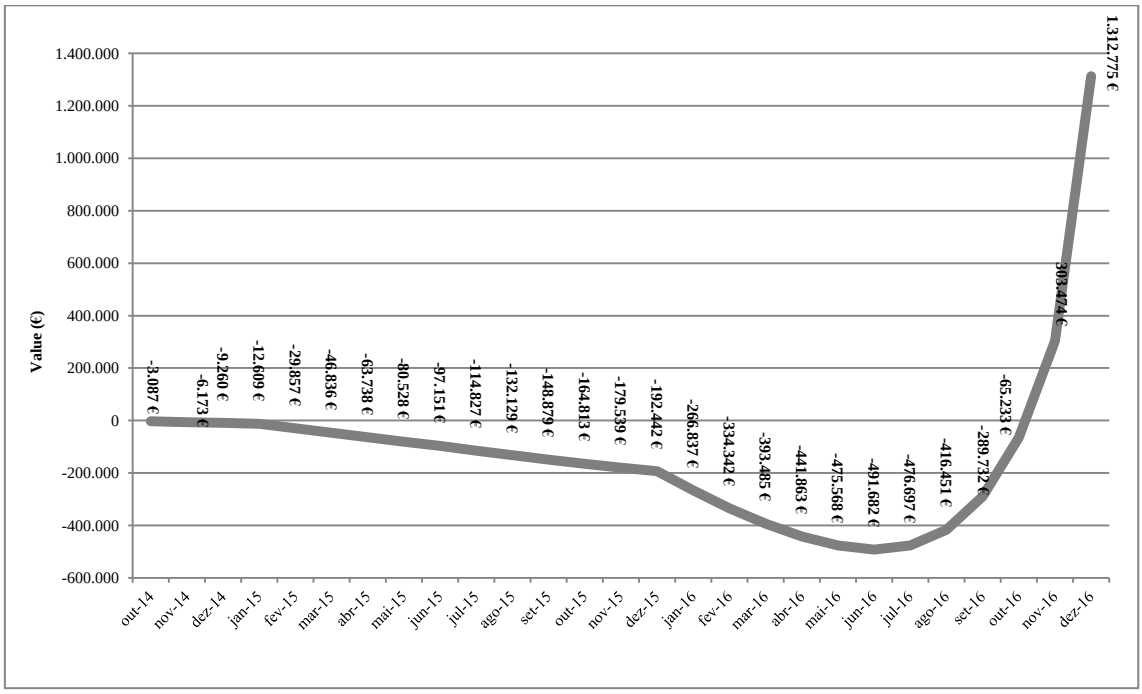


Table 12: Strategic Objectives and respective KPIs

	Strategic Objectives	KPIs
1.	Acquire 18,000+ monthly active users by mid 2015.	Number of weekly new users acquired through online marketing efforts (e.g. Facebook Ads). Number of weekly new users acquired through student union events. Number of referrals by each new user. Conversion rate of referrals. Time to Complete Full Viral Cycle. Viral coefficient. User monthly retention rate. Average user connection rating.
2.	Maintain 10% weekly user growth.	Same as in Objective 1.
3.	Maintain daily active users above 20%.	Total daily user sign-ins. Ratio between daily active users and total users.
4.	Integrate advertisement on There App by mid-2015 and optimize user engagement levels for current average CPM market values - €3 (banners) and €18 (video).	User click-through rate. User session length. Screens per session. Time per screen. Display banner ads CPM (Cost per thousand impressions). Video ads CPM.
5.	Bring 200+ medium-sized event managers (E.M.) onboard by end of 2016.	E.M. trials per month. Average monthly contacts per business developer E.M. conversion rate (percent). Average number of monthly events per E.M. Total events promoted per E.M. E.M. monthly churn rate.
6.	Optimize engagement levels between users and event managers, all through rollout period.	Total events viewed per month. Average events viewed per user per month. Average number of monthly events per E.M. Average event duration. Average spectators per event. Average user viewing time. Average rating of events. Average rating of events per E.M. Average revenue per event.