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Asset paper series
Epidemics and Pandemics: The response of Society

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The Social Networks in Public Health Emergency Preparedness and Response

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SUMMARY

This 4th issue of the ASSET paper series - Epidemics and Pandemics: The response of Society, discusses the Social Networks and their application in the area of Public Health (PH) Emergency preparedness and response. Specifically Michele Bellone from Zadig, Italy, presents an overview of the current use of social networks, including in the even of emergencies, while the NCIPD team from Bulgaria discusses their findings on the potential use of social networks for the dissemination of PH messages in the Bulgarian population. Finally, Debora Serra from Zadig, Italy, discusses their analysis of the use of social media by one of the 5 largest vaccine manufacturers (Pfizer, Inc) in the framework of their communication strategy.

Enjoy!

The Institute Prolepsis team

Public engagement and trust building on social media

by Michele Bellone[1]

[1] Zadig Ltd, Italy

Social media, mobile technology, and social networks constitute an extremely rich and dynamic information ecosystem. With a world population of more than seven billion people, almost half of them have an internet connection, while the active social media users number about 2.8 billion. These are huge numbers, which clearly shows how deep these instruments are rooted into our society.

It is not a surprise, then, that social media is also increasingly present in disaster and crisis response efforts. Its growing presence in these scenarios represents an issue, but also an opportunity.

Fake news has always existed, but the debate over them has risen to unprecedented levels in the wake of events such as Brexit, Trump's election, and alleged Russian hacker attacks on the US. The lack of a mediation mechanism on social media brought a radical change in the information system, strengthening the role of confirmation bias in our information consumption. In such a context, the already criticised one-way approach in the communication of medicine and science – the so-called deficit model – further displayed its limits, for it may promote polarization and isolate echo chambers or bubbles, incapable of communicating with each other.

However, social media may also represent an opportunity, as it may be used to provide information and to engage citizens.

In some cases, social media might be a more effective communication tool than other technologies such as landline phone networks, as proved, for instance, by the violent terror attack in Paris, in November 2015, and in the police operation launched by the Belgian police few days later. During the Paris crisis, people used social media to help others find refuge during the shootout or shared information about missing persons. On the other hand, Belgian police engaged citizens in order to avoid that information shared on social media could become an issue for the secrecy of ongoing investigations. And citizens not only recognized the importance of the situation but they also soothed the tension caused by fear, by flooding the internet with pictures of cats linked to the operation but without any details, using the hashtag #BrusselsLockDown.

Being able to effectively communicate and engage the public through social media in crisis situations may thus represent a great advantage for a public institution. But such a potential advantage needs to be properly managed, in order to avoid serious mistakes.

In the field of public health, an excellent example of social media management comes from the Centers for Disease Control and

Prevention (CDC). Their page dedicated to social and digital tools is a valuable source of information, conceived to encourage people to participate and share information provided by the organisation.

CDC has many different Twitter accounts: three are national profiles, one is dedicated to the emergencies, and other 23 are related to specific health topics like hepatitis or tuberculosis. They also implemented a Twitter account for their Morbidity and Mortality Weekly Report (@CDCMMWR). On the website, a series of guidelines and best practices can be found, through which CDC "encourages the strategic use of Twitter to disseminate CDC health information and engage with individuals and partners". Something similar is also available for Facebook, posted on a page dedicated to social media tools, guidelines and best practices. The page also includes two documents of great interest: the Social Media Toolkit and the CDC's Guide to Writing for Social Media. Both these guides are downloadable as pdf documents, intended for a beginner audience and, as explained on the site, were designed "to provide guidance and to share the lessons learned in more than three years of integrating social media into CDC health communication campaigns, activities and emergency response efforts".

They provide a wide amount of useful instructions and information, from the key attributes necessary to talk about public health on social media channels – personalisation, presentation and participation – to a series of tool – buttons, badges, images, blogs – that can be used based on the purpose, be it dissemination or engagement. They also offer several practical writing tips, supported by good and weak examples: respect your audience, quickly engage your readers and tell them what to do, do not be ambiguous, limit the use of jargon, and so on.

It is interesting to note that all these guides, information, and tools are not just internal documents used only by those who manage online communication. They are freely available and easy to find on the CDC website. This is a very interesting choice, for it is part of the communication approach itself. It is a message of transparency and also a way to promote a certain approach to the use of social media to talk about public health.

And then, there are the social media campaigns.

In 2011, the CDC issued an unusual warning: people should better be prepared, for a zombie apocalypse is coming. It was the beginning of a viral campaign that was not referring or reacting to any specific disaster. Its aim was to engage people and to talk about preparedness, combining an efficient social media marketing and a powerful symbol from pop culture like zombies. Needless to say, it was a success.

In 2014, CDC launched the Public Health Nerd online campaign to mobilize people who are passionate about public health, in order to promote awareness about CDC's work, and to encourage learning and increase knowledge about health topics. The main motto of the campaign was "You are a Public Health Nerd if you…", and most of the pictures and tweets (with the hashtag #PHNerd) contained questions and sentences aimed to boost conversation, not just to give information in a strict top-down approach. Not meaning that such an approach is wrong per se, as it is effectively used in other sections of the

website, but communication and engagement on social media clearly requires a two-way approach.

What emerges from this overview is a highly coordinated and carefully planned two-way communication strategy. A strategy, based on a long-term perspective, aimed at engaging different kind of stakeholders into a network and at trust building is necessary.

Reciprocity, engagement and trust are the fundamental pillars for an effective public health and risk communication, whatever the instrument. This is why the CDC example is a powerful lesson for anybody in this field.

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5. Social Media Toolkit. https://www.cdc.gov/socialmedia/tools/guidelines/pdf/socialmediatoolkit_bm.pdf

6. CDC's Guide to Writing for Social Media. https://www.cdc.gov/socialmedia/tools/guidelines/pdf/GuidetoWritingforSocialMedia.pdf

Is social media a realistic information channel during epidemics and pandemics? Results from the citizen consultation conducted in Bulgaria

by Veronika Dimitrova[1], Anna Kurchatova[1], Antoaneta Minkova[1], Teodora Georgieva[1], Emilia Naseva[1], Mira Kojouharova[1]

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Abstract

In the present article, the results from the Citizen consultation conducted in Bulgaria on October 1-st, 2016 are analysed regarding the citizen evaluation of the most appropriate channels and sources of information. We are trying to answer the question to what extend social media platforms are an appropriate channel of information in case of epidemics or pandemics. The results show that social media platforms are not effective source of information in Bulgaria due to the low overall confidence of citizens in them.

Key words: ASSET project, Citizen consultation, preparedness and response, epidemic, pandemic, social media, can best ensure public cooperation and trust.

1. Introduction

Internet is broadly used in medicine, healthcare and public health. Diversity of usages are enormous and vary from Google checks for specific illnesses, public campaigns [11], illness subcultures such as rear diseases activist's groups [3], support groups, possible use of internet-data for public health surveillance [13, 15] and even data collection [5]. The main application of internet in public health could be summarized as: campaigns to raise awareness about particular topics (vaccines, public health emergencies, antibiotics, etc.). Public health surveillance is also possible through internet generated information and the possible use of social media as a channel of information in emergent situations. However, the impact of social media upon public health communication is not carefully assessed. Here we would like to consider the possible use of social media as a mediator for Public Health announcements in epidemics and pandemics in Bulgaria as a pivotal part of Preparedness Plans.

Influenza pandemics occur unpredictably, without strict cyclical patterns and cannot be avoided or stopped, but the consequences could be significantly mitigated if the global healthcare system is prepared for coordinated action [12]. A main policy of the WHO is the development of comprehensive, long-term

strategy for communication during a pandemic [9, 14, 16].

The international research project "ASSET – Action plan in Science in Society in Epidemics and Total pandemics" is developed on lessons learned after the flu pandemic in 2009-2010. The tasks set by the project are related to the communication and cooperation between science and society.

These opportunities can be better utilized only if we succeed in mobilizing all participants in the social processes and open up the public health system to the civil society, by overcoming the conventional top-down approach based on decide, announce, defend (DAD) principles. A mechanism for rebuilding the trust between scientists, researchers, politicians and society as a whole is needed, allowing bottom up societal participation in creating and realizing preparedness plans for epidemics and pandemics.

Public discussions are one such mechanism that provides an opportunity for better understanding of citizen's positions on those questions, related to epidemic and pandemic preparedness and response. Citizen consultations were held in 8 countries – Bulgaria, Denmark, Ireland, Italy, Norway, Romania, France and Switzerland.

The purpose of this article is to analyse the conclusions drawn from the Citizen consultation conducted on October 1-st, 2016 in Bulgaria, regarding the citizen's evaluation of the most effective channels and sources of information, and to answer the question: to what extend the social media platforms are an adequate information channels in case of epidemic or pandemic.

2. Methodology

The goal of the conducted Citizen consultation in Bulgaria was to examine opinions and evaluations of Bulgarian citizens on four topics, related to preparedness and response in case of epidemics and pandemics. In this article, the results obtained for two of these topics are analysed and presented: communication between citizens and public health authorities, and access to information.

Invited to participate in the Citizen Consultation were 90 persons, selected by a quota corresponding to a main demographic distribution based on age, gender, education level and professional occupation. A total of 67 people participated in the discussion, among which 46 were women (68.7%). The prevailing age group was 25-44 years of age – 35 participants (52.2%). Below 24 years old, and the elderly, over 65 years, were the groups, most poorly represented (3 participants respectively, 4.5% and 8 participants, 11.9%), and one third of the participants (21; 31.3%) was between 45 and 64 years of age [8].

The main method used in the study is citizen consultation, which allows open discussion on chosen research topic with pre-selected participants. Being based on the idea of deliberative democracy, this method gives voice to the public opinion and communicates the results to the public officials [6].

Unlike the common approaches in studying public opinion through surveys, where the respondents are randomly selected to share their opinion on topics not necessarily part of their area of interest [1], in citizen consultation this problem is overcome. Consultations allow better consideration on positioning of each opinion by supplying materials in advance and

conducting discussions. In this way, participants are able to form opinions on topics they have never thought before and approbate these opinions in wide public discussion. Citizen consultation as a data collection method is the most closely related to focus groups surveys, but they also allow collecting of quantitative results by conducting quick polls after each discussion.

3. Results

Inquiries that cover the research criteria are the following topics: 1. Information sources and public trust in them; 2. Information channels that the public use to obtain certain message/content; 3. Ways to provide information.

According to the participants, the best way to give information during epidemics/pandemics is through one-way communication from the public health authorities - 62.7%. The opinion of 17.9% (12 persons) is that this is a conversation with their General practitioner (GP) while only 13.4% (9 persons) prefer dialogue in social media or other platforms. In age group 25-44 "clear one-way communication from the public health authorities" is preferred by 69%, unlike the people in age group 45-64 (40%). In age group 25-44yrs the option "conversation with the GP" is chosen on fewer occasions (15%), than in age group 45-64 (40%). People over 44 years of age do not consider dialogue through platforms as a way of obtaining information. Women most often prefer dialogue through the platforms (17% of women and 5% of men). Social media platforms as preferred information channel are mentioned relatively rarely. This is complemented by the fact that very few of the participants consult with the internet when ill - 4.5% (3 persons). Answering the question "Whom do you consult with first when you are ill?" participants in age group 45-64 indicate their GP – 76%. A general tendency is outlined here – men are more willing first to consult with relatives (29%) and only 48% of them first with their GP; 78% of the women first consult with their general practitioner and only 7% of them turn to relatives first. This is probably due to the fact that in the family women more often are those, responsible for taking care of the sick, and are more likely to be the decision makers in this area of the family dynamics.

Next question, relevant to the research topic is: "What are the communication channels you prefer for the government to use in cases of pandemic or outbreak?" With only one answer possible, television (20 persons; 28.4%) and state owned media (19 persons; 28.4%) come out first. Only 10.4% (7 persons) indicated the government websites, 7.5% (5 persons) – the social platforms and 6% (4 persons) – the radio. Men more often indicate radio (10%) than women (4%) and official government websites (19% of men and 7% of women). The participants in the consultation have more trust in the traditional information sources like television and radio.

On the question about sources of information "To what extend you trust each of the following sources of information regarding the ongoing outbreak of Zika virus?" the answers are distributed as follows: the highest is the trust in the general practitioners (76.1%), followed by the competent European and national health organizations (respectively 69.4% and 66.4%). The lowest confidence is indicated towards the newspapers – 41.8%. The different age groups have varied confidence in internet sources: highest with

people between 24 and 44, which are the most frequent users of the web, and secondly – the oldest participants – those over 65 years of age.

4. Discussion

The results obtained by the survey indicate that the highest confidence people have in information received by their General practitioner and the European and national health authorities, and the preferred information channels are television and state-owned media. The research also shows that the role of internet and social networks in communicating information to the citizens on medical issues is limited to certain age and gender groups in Bulgaria.

With regard to information sources the results of European values research can be analysed. This research demonstrates that levels of confidence towards the government authorities are going down (between 1999 and 2008) and are at their lowest compared to the police, church, educational system etc. [7]. 38.5% of the people state they have no confidence in the public health system. The same research also registers the highest mistrust in political parties and government.

On the other hand, the institutions of the European Union have the highest confidence index. Hence adequate communication approach must be selected when there is an outbreak or a probability of one. The most effective source for the primary information would be an institution from the European Union.

Social media examinations show that when used as a source of information, basic ethics principles are often violated and message content distortion is possible [11]. The utilization of social media as a warning channel could be considered separately in the context of a social network analysis. The analysis of offline social networks demonstrates that people identified as having many social contacts are more likely to be infected earlier with communicable diseases, because of their large base of social interactions [2]. The possible conjunction between online and offline networks during an epidemic may lead to re-configuration of the online social environment, as Christakis has shown that "the peak incidence of flu is shifted forward in time for the friends group by 13.9 days" [2]. These are consequences difficult to predict. However, other research marks the possibility of mitigating the outcomes of an emergency situation through the strategic use of new technologies and social networks [15], particularly new applications with geo-location functionality.

5. Conclusion

The presented data from the conducted Citizen consultation in Bulgaria is not representative because of the recruitment of participants. The results show that, according to the citizens, one of the best ways to supply information in times of epidemics/pandemics is through one-way communication from the public health authorities.

Social media and networks are not preferred information channels, probably because the content is often considered distorted and closed information groups are formed. Information coming from the General Practitioner and the competent European and national public health authorities is most highly regarded. The preferred channels for obtaining

information are television and state-owned media.

The results from this first of its kind discussion on public attitude in relation to the preparedness and response measures during epidemics and pandemics in Bulgaria could be used in forming hypotheses, to be verified in other research studies.

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Social media activities in pharmaceutical industries: the case of Pfizer, Inc

by Debora Serra[1]

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1. Introduction

Within the ASSET project, social media is one of the main activities and one of the tasks required to "collect data on the social reach of the main vaccine and antiviral drug manufacturers, and their social marketing strategies".

For this reason, we analysed the social media activity of the five largest vaccine manufacturers in terms of corporate identity and social media accounts. This article shows a preliminary work with data on Pfizer, Inc, one of the 5 manufacturers under investigation (a more thorough analysis will be available in the final reports of the ASSET project).

2. Methodology

In order to first identify the main vaccine manufacturers, we analysed global vaccine revenues. Data collected in 2013[1] revealed that the five biggest companies in terms of revenues were Merck, Sanofi, Pfizer, GSK and Novartis (Novartis stepped back from vaccines in 2014, trading away the bulk of its vaccines portfolio for GlaxoSmithKline's oncology unit and sealing its exit from the vaccine space by finalizing the sale of its flu vaccines unit to CSL). According to the Financial Times[2], in 2016, Pfizer, GlaxoSmithKline, Sanofi, and Merck reported stronger sales growth in vaccines than in pharmaceuticals.

For each one of these companies we collected data from their websites (corporate images) and from their social media accounts (numbers and national distributions).

3. Results

At first, we analysed their corporate identity by studying their national websites[3] and their similarity with the company main page. In the page[4] "Pfizer Global Sites" there are 46 national websites:

- 3 of 46 websites were unavailable.
- 6 of 43 websites are similar to Pfizer.com.

Further considerations include:

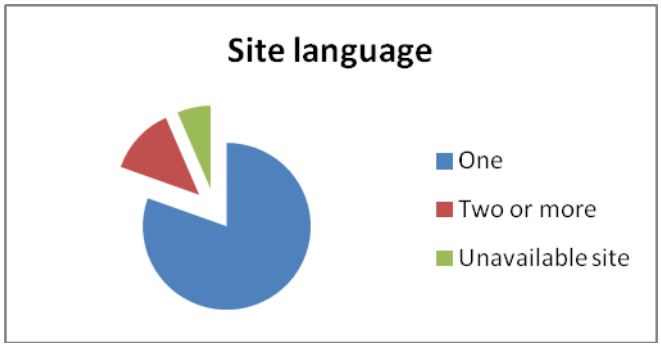
- 6 of 43 used two or more languages.

1. http://www.fiercepharma.com/special-report/top-5-vaccine-makers-by-2014-revenue

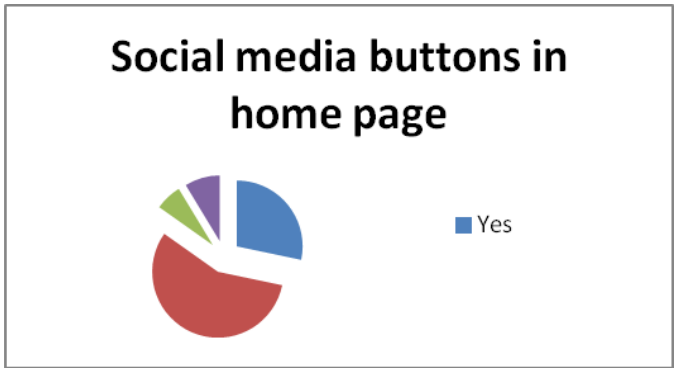
2. https://www.ft.com/content/93374f4a-e538-11e5-a09b-1f8b0d268c39

3 http://www.pfizer.com/general/global_sites

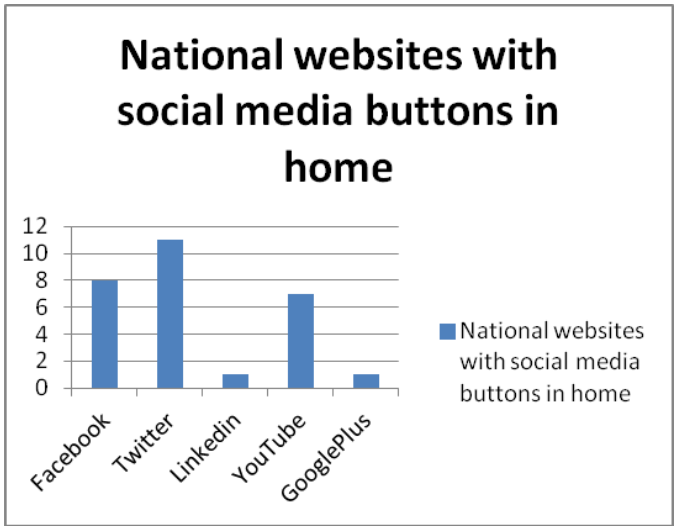
4 www.pfizer.com



- 26 of 43 have no social media buttons in their home page (in four other websites we could not run the investigations because of the language – Israel, Japan, Korea and Taiwan):



- Social media buttons in the home pages of national websites:



The second part of the investigation was focused on social media accounts.

We analysed social media[5] accounts in the home page of Pfizer.com (last check: June 2 2017):

Social Media	Account Name	No Followers/ Fans	No Tweets/ Posts	No Views	Date of registration
Twitter	Pfizer	205,000	6,274		July 2009
Face book	Pfizer	269,852			
Linked in	Pfizer	1,517,949			
Insta gram	PfizerInc	4,451	130		
You tube	PfizerNews	10,275		3,036,986	July 15, 2009

Then we analysed the page "Pfizer in social media" (last check: June 2 2017), finding some unavailable accounts:

Social Media	Account Name	No Followers / Fans	No Tweets / Posts	No Views	Date of registration
Youtube	PfizerNews	10,275		3,036,986	July 15, 2009
	PfizerMexico	472		2,133,516	July 7, 2011
	PfizerUK			5,829,641	December 10, 2008
	PfizerPortugal	unavailable			
	PfizerEspana	555		4,507,190	April 21, 2010
	PfizerRussia	1,062		11,011,492	August 20, 2012

5. http://www.pfizer.com/news/social_media/social_media

	PfizerBelgium	346		4,922,876	March 2, 2011
	PfizerBrazil	no information			
	PfizerTurkiye	144		640,499	March 20, 2010
	PfizerColombia	19,194		11,216,663	July 14, 2010
	PfizerNorge	267		1,506,439	June 30, 2011
	PfizerSverige	237		1,271,195	October 3, 2012
Facebook	Pfizer	269,852			
	PfizerTurkey	106,307			
	PfizerKariyer (Finland)	unavailable			
	PfizerCanada	13			
	PfizerRussia	unavailable			
	PfizerSweden	unavailable			
Twitter/Weibo	PfizerNews	10,900	639		March 2012
	PfizerAustria	1,552	998		June 2010
	PfizerDeutschland	2,597	2,099		October 2010
	PfizerFrance	3,877	616		January 2011
	PfizerMexico	unavailable			
	PfizerEspana	17,000	6,430		March 2010
	PfizerTurkey	12,000	1,515		March 2010
	PfizerBelgium	1,032	520		March 2011
	PfizerCanada	2,538	4,541		September 2013
Slideshare		6,588	15		
Linkedin		1,517,949			

After that, we looked for social media accounts not reported in the Pfizer main website:

- General accounts:

Social Media	Account Name	No Followers/ Fans	No Tweets/ Posts	No Views	Date of registration
Twitter	PfizerCareers	1,486	2,058		December 2013
	PfizerGrants	323	105		April 2014
	FundacionPfizer	2,945	2,399		September 2010
	pfizercareersmy	31	1		January 2013
Facebook	PfizerPharmaceutical	31,105			
	PfizerCritica	320			
	PfizerNutrition	144			
YouTube	Pfizer Consumer Healthcare	204		1,369,151	May 19, 2015
	Pfizer - Topic	31			December 23, 2013
	Laboratório Teuto|Pfizer	245		53,715	February 10, 2014

- National accounts:

Social Media	Account Name	No Followers/ Fans	No Tweets/ Posts	No Views	Date of registration
Twitter	PfizerlifeUK	771	532		March 2012
	Pfizer_Ireland	1,156	896		Sep 2014
	PfizerBr	426	1,210		August 2012
Facebook	Brasile	33,787			
	Finlandia	1,782			
	Egypt	7,586			
	Russia	623			
	India limited	6,574			
	Maroc	193			
	Colombia	12,145			
	Ireland	3,467			
	Türkiye	106,311			
	Danmark	984			
	Belgio				
	Belgique Luxemberg	1,263			
	Mexico	11,195			
	Norge	8,079			
	Canada	13,117			
	PfizerProChile	3,484			

	Pfizer Thailand & Vietnam Careers	1,075			
You Tube	Pfizer Ireland				February 17, 2015
	Pfizer France	165		237,952	Nov 7, 2009
	Pfizer Europe	151			Sep 15, 2009
	Pfizer Centroaméri ca y Caribe				March 17, 2016
	Pfizer Deutchland	610		5,038,9 81	August 24, 2015
	Pfizer Thailand	1149		4,684,4 92	October 29, 2014
	Pfizer Austria	29		54538	Nov 30, 2016
	Pfizer Portugal	473		2,464,8 24	October 11, 2011
	Pfizer Brasil	393		109009 1	Sep 6, 2012
	Pfizer Nederland	41		676893	August 17, 2016

4. Discussion

It is interesting to note that the page with all social media is not updated: some links were unavailable and we found more accounts than the ones reported. This should suggest that there is a lack of communication between different webmasters and social media managers, and that social media activities are more important than website maintenance. For example, the Twitter account in home page is @Pfizer (over 200,000 followers) and the one in the page Social media page is @PfizerNews (almost 11,000 followers).

Moreover, each country seems to work independently and the perception is that the communication offices do their own work without any central strategy. Each country has a different number of social media accounts, each with different strategies and different number of posts/tweets. For example, Pfizer.com reported only five Facebook national accounts (three of which – Finland, Russia and Sweden – are unavailable), but we found 17 more national accounts (among which Facebook pages of PfizerRussia and PfizerFinland).

Among the different social media, Linkedin is the one with more fans (1,517,949), followed by Facebook (269,852) and Twitter (205,000).

Some considerations on Twitter accounts:

- @Pfizer is the most followed and the oldest account (205K since July 2009).
- @PfizerEspana is the second account in terms of followers and data, but the most active in terms of tweet activity (6,430 tweets published since March 2010).
- @PfizerTurkey is third in terms of followers and data (12K since March 2010) and it is also interesting to note that Turkey is the 8th in terms of tweet activity.

Some considerations on Youtube accounts:

- Despite PfizerUK being the oldest account (December 2008), PfizerColombia is the one with most followers and the highest number of views (19K and 11M).
- With 10K followers, PfizerNews is second in terms of followers and date of registration (10K since July 2009).

Facebook accounts:

- Pfizer is the page with most fans (269K).

5. Conclusion

We ran this analysis in order to obtain a better understanding of the pharmaceutical industry's social media activities, since ASSET aims to target researchers and to collect data on the social reach of the main vaccine and antiviral drug manufacturers.

Collected data suggests that Pfizer is more involved in social media activities than in website maintenance and this confirms the fact that social media is a medium between the public and the industry in the field of Research and Innovation on vaccines and antiviral drugs.