THE EUROPEAN UNION – GETTING SPEEDS ON THE POLITICAL AGENDA, LOSING SPEED ON THE INTERNET

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Abstract

A quick incursion in the Virtual World to explore the recent [political] history and anticipate trends on certain topics, with the help of the Big Data tools. Just a glimpse to the gross figures revealed by the analytics behind the search engines and the corresponding databases can give us a remarkably accurate prospective upon the interest of the general population [with Internet access] over time on some topics, as "European Union", "European elections", etc. As expected, the virtual world is in sync with the real world and from here we can infer that the activity of people on the Internet can predict the near future trends and stimulate us to try to learn how this trends works and how to influence it. In addition, observing the search trends can offer a fresh prospective upon the real meaning and dimension of the key events.

The objective of this paper is to illustrate how one can easily use Google Trends platform to visualize the trends of a selected topic or search term, to further analyze this trend in context and infer some conclusions upon the variations, and use the data to try to make predictions for the future trends.

Keywords: new media, European Union, European elections, Google trends, forecasting, nowcasting.

Once the Internet reached its maturity together with the increasing speeds and larger access, the virtual space became more and more a key place on the "Public Sphere" at the Global level. Through a variety of communication means – from online newspapers to the blogs and social media – the "Internet media" managed to overtake, one by one, the pillars of the "establishment", taking globally a first place in the audience polls.

But unlike its "classical" rivals (print news, television, radio), the internet, more specifically the "online media", has some unique, specific features that make it more sociologically interesting than the "classic" means of communications.

In contrast to those, the Internet is not only a medium for the dissemination of information, but a complete system in which information is received, interpreted, transformed and sent back. Briefly, online, the information produces information. And the effect is quasi-instant.

No wonder it did not take long until the Internet became increasingly attractive to communicators and marketers. In parallel, with the direct commercial use, this new media has drawn attention of the researchers in social sciences, many of whom re-focusing on the exploitation of the new resources, both by classical means and by (new) scientific methods and models dedicated to investigating the evolution of subjects in this environment.

"Big data"[22] or "Machine learning"[23] for example, are terms and technologies that - although based on not very recent scientific methods - have only made accessible with this unprecedented development and maturing of the online environment, with exponential increase in computational speeds and data storage. For those involved in social research, it became quite clear that human interaction with this emerging world may be an important indicator of the general or particular state of some systems, but also an interesting and absolutely novel predictor. With the evolution and refinement of the accessory technical means (from infrastructure, to access points) and the increasing access to the Internet, the sensitivity of this predictor has increased steadily.

One of the already established sensitive indicators of the public's interest in certain topics is their interaction with the search engines. In principle, a "search engine" is a complex information system that actively monitors websites created by third parties, inventories, indexes and sorts them according to certain criteria - specific to each operator - the result being an interrogable database, accessible to the public. The number of searches on a particular keyword or group of words reflects in the most brutal and direct way the interest in a given moment of the audience for a subject characterized by those keywords. The sensitivity of the search analysis depends and can be affected by many factors (language, regionalization, confusion of terms, erroneous or approximate entries, etc.), but for very general topics that can be characterized by well-established keywords and for which there is a very large number of results to be assessed, gross search analysis may be sufficient at least to outline some assumptions, if not even to draw (some) conclusions.

[22] "Big Data is high-volume, high-velocity and/or high-variety information assets that demand cost-effective, innovative forms of information processing that enable enhanced insight, decision making, and process automation". (Gartner.com, 2017)

[23] "Advanced machine learning algorithms are composed of many technologies (such as deep learning, neural networks and natural-language processing), used in unsupervised and supervised learning, that operate guided by lessons from existing information." (Gartner.com, 2017)

In 2006, the largest search engine operator by the date, Google Inc., with his *google.com* search engine, introduced a research tool accessible to any Google Account holder, called *Google Trends*[24]™. It allows searching one or more keywords and delivering statistics on how often they are used over time (starting from 2004), or in a given interval of given time. *Google Trends*™ can be used to track topic development in various fields and related literature has already been generated about the effectiveness or ineffectiveness of this tool.

A number of researchers in various domains have focused attention on this tool, in order to use it in a positive way, mainly by exploring or enhancing the methods to understand and predict data in domains like financial markets and biostatistics, especially by "nowcasting" – a term brought from meteorology - meaning observing the near past, the present and from here anticipating the near future.

Google itself launched a trend in using Trend in a search for predictions on certain topics. *Predicting the Present with Google Trends* (Varian, Hal, 2009; Varian, Hal, 2012) are two papers illustrating how to do this, with examples, which soon become common knowledge and first reference in such study. However, a real hit was attained by now notorious Google Trends sub-branches Google Flu Trends[25] or Google Dengue Trends, large global projects developed and run by Google Inc. between 2008 and 2014, meant to estimate the influenza and dengue fever outbreaks in particular countries, based solely on Internet search. The assumption is that a search surge on such topic and related topics is a very strong predictor for an abnormal activity of the disease and an early warning, otherwise missing, since the visits to the doctors - and the subsequent data - occurs usually late, when the symptoms are more accentuated (Ginsberg et al., 2009; Carneiro, Mylonakis, 2009). Google disrupted publishing trend data in 2014, but the data is still available for research. Likewise, the authors of a study on Lyme disease spreading concluded that the Internet searches "*may not only aid outbreak surveillance but also identify more subtle geographic spread in incidence of endemic diseases such as Lyme*" (Seifter et. al., 2010). Other scholars and experts focused their attention in predictive power of the Internet search in economics - related domains, like consumer behaviour (Carrière-Swallow, Labbé, 2013), tourism trend and tourist behaviour (Yang et. al, 2015; Bing, Yang, 2017) and, of course, financial markets (Preis et al., 2013), the authors starting from the idea that "*Google Trends data did not only*

[24] https://trends.google.com/trends/ [Accessed 09/2017]
[25] https://www.google.org/flutrends/about/ [Accessed 09/2017]

reflect the current state of the stock markets, but may have also been able to anticipate certain future trends."

More recently, some scholars revisited the topic and some skepticism arise: Is really internet search such powerful tool? In his paper "*Nowcasting with Big Data: is Google useful in Presence of other Information?*" (Li, 2016), Li has proven that forecasting on internet search is of lesser impact in economic fields like job claims and employment when real data prevails in quantity and quality. However *"(...) for countries, whose data quality is poor or where there are very few forward-looking variables (surveys) and data publication is subject to severe delay, search data might provide extra information and its timely publication can be beneficial in forecasting or even cross-validating the real economic data*" is a collateral conclusion drawn from the same study (Li, 2016).

European Union topic on the virtual world

Inspired from this prospective, we will try to switch the topic to some social issues and politics and contemplate the life of the European Union on the Internet. While the Euroscepticism[26] is constantly eroding the EU agenda for years now, the recent "-exits" like Grexit[27] and Brexit [28] has abruptly shaken the EU.

In the following paragraphs we will apply trend query to some European Union related topics within the available timeframe (2004 - present) using Google Search engine and other Google proprietary tools, as presented, and use the comparative approach to understand and explain some of those trends.

Some useful remarks about the procedure:

- Google's search algorithm is based on "relevancy," a concept that combines over 200 factors, the most important of which is "Page Rank," a measure of the importance of a page compared to another, based firstly on the number of "high prestige" valid references (links) to it (Google.com, 2017).

- Keywords have been chosen to eliminate ambiguities as much as possible. Thus, the pair of words "union" + "European" (in any form) sends first to the organization of the same name (EU), in any language. Unlike Google Search, Google Trends, in addition, makes this distinction actively and filters out irrelevant results.

[26] EU-scepticism, see https://en.wikipedia.org/wiki/Euroscepticism
[27] GReece-EXIT, see https://en.wikipedia.org/wiki/Greek_withdrawal_from_the_eurozone
[28]BRitish EXIT, see https://en.wikipedia.org/wiki/Brexit

- Google Trends analyzes part of the searches on a net topic or specific keywords. Are actively eliminated from the analysis the inputs that could corrupt the result, such as "duplicate" searches (repeated searches made by the same user within a short period of time), special characters and mistakes, searches made by a small / homogeneous group of users etc., maintaining only very popular searches.

- Data is adjusted by Google Trends algorithm in a way to compensate the differences in volume, by proportionate them by time and location.[29]

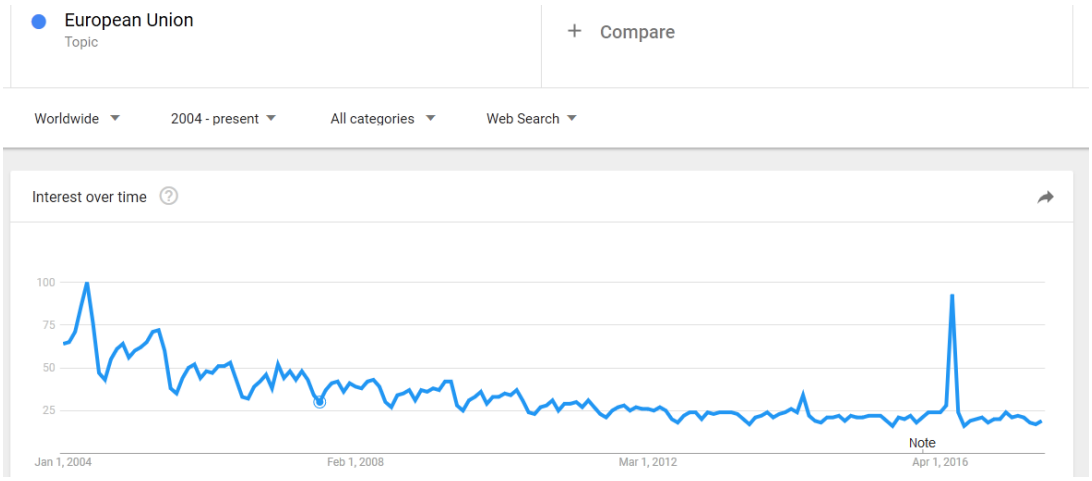
- The results in this study are collected from global search database ("Worldwide"), restrictions by regions being possible. However, for the scope of this paper the worldwide setting is sufficient and the results are illustrative.

Preliminaries

A search on Google.com with the words *European* + *Union* generates over 280 million results[30] (accessible pages) and the search for the acronym "EU" somewhere over 2.7 billion, of which perhaps a very large part is due to ambiguity. The result itself is not surprising, nor is the fact that the first pages of suggestions are almost exclusively directed to the official sites of European bodies, large encyclopaedias and portals of European media malls that have treated and treats the subject in the current news. Such a general search can only reveal the huge amount of information we are talking about, impressive only through its magnitude. As a matter of fact, a similar search for the words *United* + *States* + *of* + *America* generated almost instantly 846,000,000 results, and for *China* 3,390,000,000 results (in this case the ambiguity pointing to zero), which can put the EU's memory on the Internet in a comparative light.

More interesting results, however, are provided by *Google Trends*, a tool that does not refer the number of pages that contain this term, but to the interest of those who used the search engine on this topic.

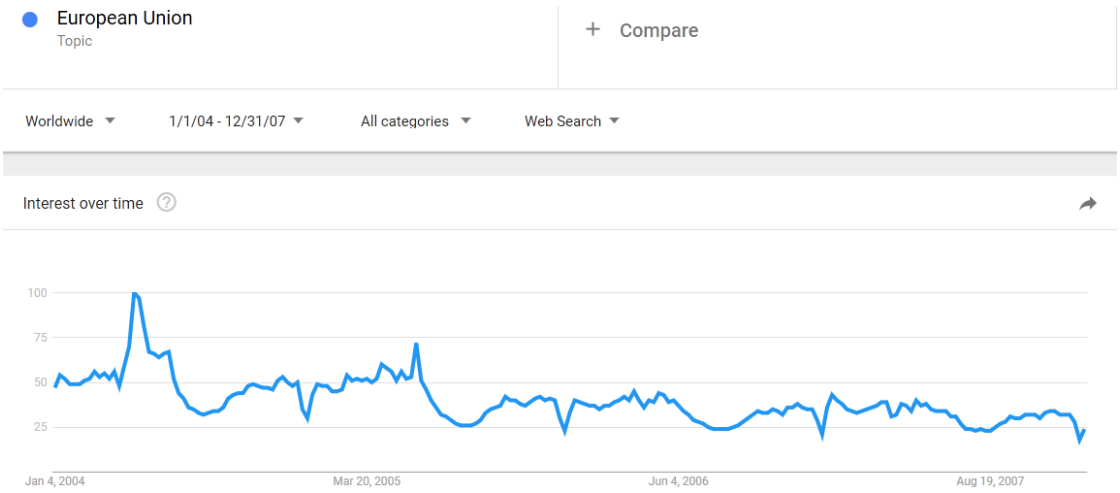
[29] https://support.google.com/trends/answer/4365533?hl=en&ref_topic=6248052 [Accessed 09/2017]
[30] Search time September 2017 – the search results may vary, usually with increasing numbers over time.



Graph 1. Google Trends – Topic "European Union" 2004 – present, Worldwide,
Data source: Google Trends 09/2017 (www.google.com/trends)

The graph above (Graph 1) gives us the popularity of the topic "EUROPEAN UNION" from 2004 to the present. In Google Trends logic, the graph points indicate the "popularity" of a search, that is, the total number of searches per topic or keyword at a given time, relative to the total number of searches on Google at that time. Thus, a downward trend-line shows that the relative popularity of the search term has fallen. This does not necessarily mean that the total number of searches has dropped (less probable since from 2004 the global volume of searches has massively increased), but only that its relative popularity is decreasing.

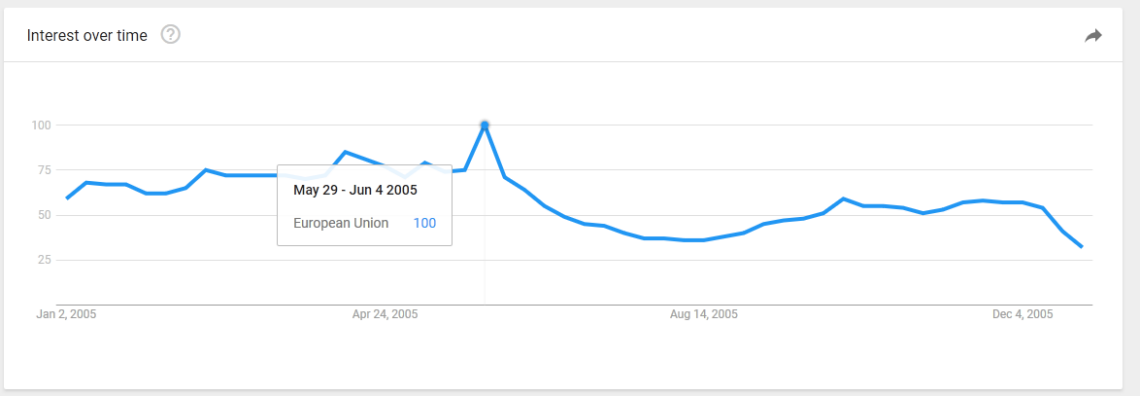
The breakdown over time allows us to view the trend in detail and make certain assumptions about the upward or downward tendencies of the trend-line in the chart. If we focus on January 2004 - Dec 2007, the situation looks like this:



Graph 2. Google Trends – Topic "European Union" Jan 2004 – Dec 2007, Worldwide,
Data source: Google Trends 09/2017 (www.google.com/trends)

Graph 2 illustrates that the peak of popularity is recorded in May 2004. On 1st of May 2004, a historic event took place, the accession of 10 countries to the EU[31], the largest enlargement of the Union in numerical terms as well as population and territory. After this turning-over event in the history of the EU, the search-trend drops again, perhaps to a "normal" of the era.

Looking deeper, is eye-catching that the peaks of Internet searches with the topic "EU" are usually in May. Thus, the next year, in May 2005, is the second "peak" of importance for the period 2004 – present (see Graph 3 for details), preceded by a small jump in October 2004. Looking retrospectively, we notice that on 29 October 2004 the 25 Member States sign, in Rome, Italy, "The Constitutional Treaty" - *Treaty establishing a Constitution for Europe* (Europa.eu, 2005) - a brave and unprecedented step in European construction. The ratification process started successfully the following spring in Spain and succumbed suddenly to France's rejection vote on May 29, 2005. (On July 10th, the Netherlands and Luxemburg symbolically, but unnecessarily, approve the first European Constitution, already dead.)



Graph 3. Google Trends – Topic "European Union" 2005, Worldwide,
Data source: Google Trends Sep 2017 (www.google.com/trends)

Simply by breaking down this graph of searches on the Internet we can witness the fate of the Constitutional Treaty and the idea of a Constitution for Europe from its launch to the bitter end.

Further, Google Trends provides us the means to explore certain interests over regions.

[31] Cyprus, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Malta, Poland, Slovakia, Slovenia;

	Country	European Union: (2005)
1	Luxembourg	100
2	Lithuania	48
3	Latvia	48
4	Malta	42
5	Bulgaria	37
6	Slovakia	37
7	Czech	36
8	Romania	34
9	Austria	34
10	Cyprus	33
11	Poland	32
12	Hungary	32
13	Ireland	31
14	Estonia	29
15	Portugal	27
16	Belgium	27
17	Germany	27
18	Greece	25
19	Palestine	24
20	Denmark	23
21	Slovenia	22
22	Serbia	21
23	Sweden	20
24	Turkey	19
25	Ukraine	19
26	France	18
27	Finland	18
28	Croatia	17
29	Netherlands	15
30	Norway	15
31	Spain	14
32	Switzerland	14
33	United Kingdom	12
34	Italy	12
35	Ecuador	11

Table 1. Google Trends – Topic "European Union" 2005, Interest by region, Worldwide,

Data source: Google Trends 09/2017(www.google.com/trends)

Table 1 shows the interest over "European Union" Topic in year 2005 by region (country level)[32]. We can see an increase in relative queries, in general, in the former "Eastern-Block" countries and in the new members, and a less interest in Western countries and "old" members. The trending search term over the year 2005 related to the European Union was "Constitution" (see Table 2) which can enable us to say that the European Constitution was really a "hot" topic of the year, observation further sustained by the "rising" metric of the same report[33] (*Table 3*), where terms like "Constitution", "Referendum" or "Voting" related to the EU general topic are trending.

	TOP – Top	
1	Europe	100
2	Constitution	20
3	Member state of the European Union	15
4	European Commission	15
5	Country	10
6	Directive	10
7	Turkey	5
8	Poland	5
9	Treaty	5
10	Import	5
11	European Economic Community	5
12	Euro	5

Table 2. Google Trends – Topic "European Union" 2005, TOP Related topics, Worldwide, Data source: Google Trends 09/2017 (www.google.com/trends)

[32] Values are calculated on a scale from 0 to 100, where 100 is the location with the most popularity as a fraction of total searches in that location, a value of 50 indicates a location which is half as popular, and a value of 0 indicates a location where the term was less than 1% as popular as the peak. Note: A higher value means a higher proportion of all queries, not a higher absolute query count. So a tiny country where 80% of the queries are for "bananas" will get twice the score of a giant country where only 40% of the queries are for "bananas". (Google Trends Help, 2017)

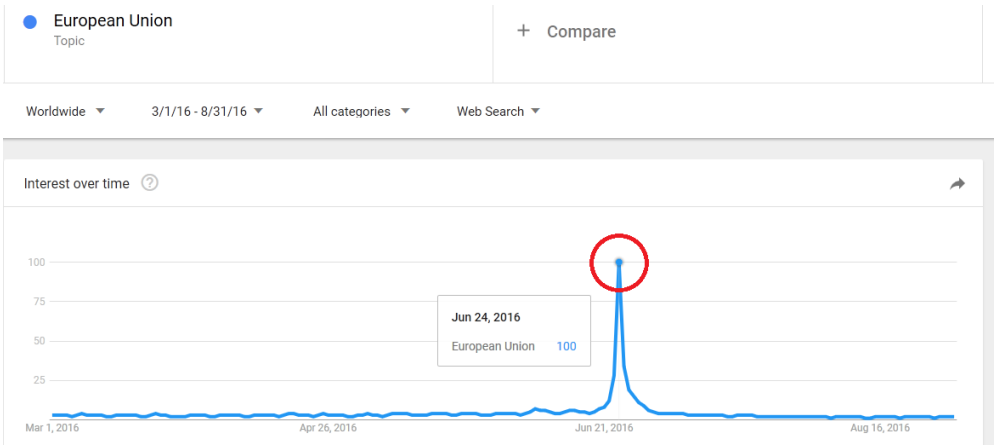
[33] Related topics: Users searching for your term also searched for these topics. You can view by the following metrics: * Top - The most popular topics. Scoring is on a relative scale where a value of 100 is the most commonly searched topic, a value of 50 is a topic searched half as often, and a value of 0 is a topic searched for less than 1% as often as the most popular topic. * Rising - Related topics with the biggest increase in search frequency since the last time period. Results marked "Breakout" had a tremendous increase, probably because these topics are new and had few (if any) prior searches. (Google Trends Help, 2017)

Related topics	Rising
1 Referendum - Topic	+200%
2 Constitution - Topic	+200%
3 Domain name - Topic	+100%
4 Voting - Topic	+70%
5 Negotiation - Topic	+60%

Table 3. Google Trends – Topic "European Union" 2005, RISING related topics, Worldwide,
Data source: Google Trends 09/2017 (www.google.com/trends)

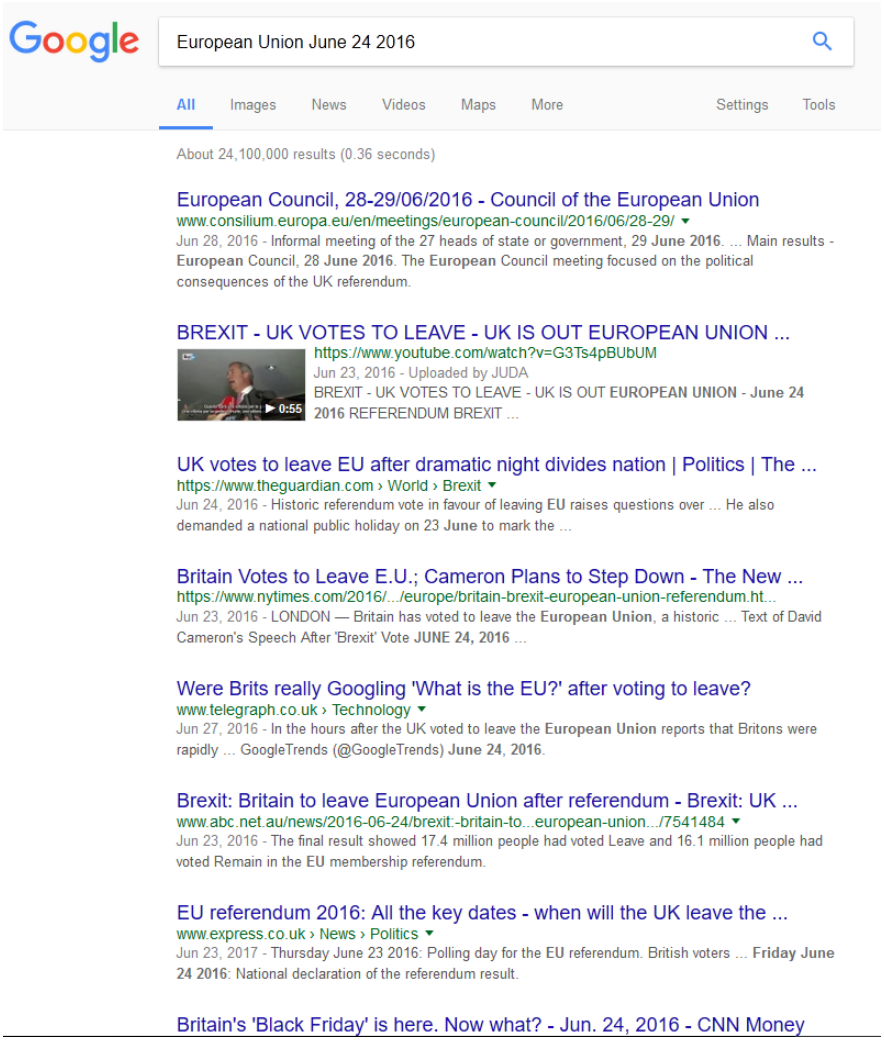
In 2007, on May 1st, two more countries joined the European Union - Romania and Bulgaria - the trend line registering a new jump, but not as spectacular as the previous one. At the same time, a new EU Council is taking place in Brussels.

The 2009 and 2014 elections are the latest "twists and turns" of interest in the subject, notably the performance of the 2014 elections, with a peak for the 2010-2015 period, a period that is lingering from this perspective (Graph 1). However, a major "spike" over this sea of calm emerges in 2016 (see Graph 1). Without any exploration, one can say that this would be a (very) notable event in the history of the European Union. Zooming-in we can put the finger on the tip of the spear (Graph 4):



Graph 4. Google Trends – Topic "European Union" 2016 (May-Aug), Worldwide,
Data source: Google Trends 09/2017 (www.google.com/trends)

What happened with the EU on June 24th, 2016? A brief Google search provides the answer in milliseconds (*Picture 1*):

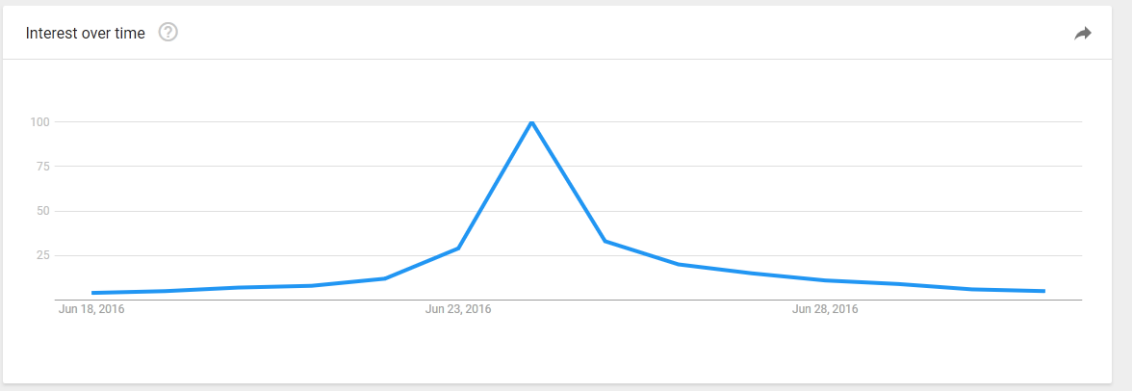


Picture 1. Google Search European + Union + June + 24 + 2016 [09/2017]

The referendum in UK sends a key member of the European Union outside the organization in an unprecedented event in its history, the "BREXIT" leaving the whole world stunned. It's not surprising that millions of searches over the Internet focused on the subject on that day.

However, what it is further remarkable and of interest is how a topic evolves on the people agenda, seen from the prospective of the Internet search. Graph 5 focuses on the days

before and after the event, following the same search terms: European + Union. (As a matter of fact, searching on *Brexit* and *United + Kingdom* returns exactly the same "interest" pattern for the given period).



Graph 5. Google Trends – Topic "European Union" 2016 (Jun 18 – Jun 30), Worldwide, Data source: Google Trends 09/2017 (www.google.com/trends)

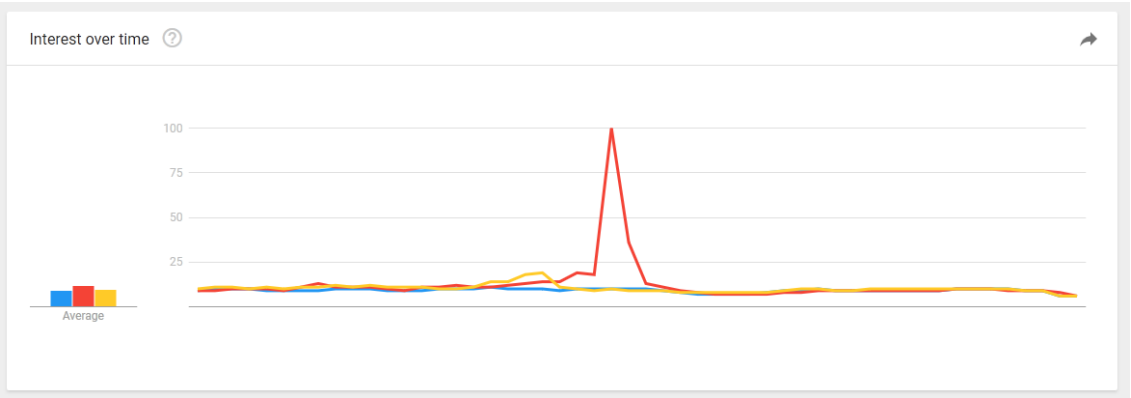
In the days before the British referendum people start to actively search the internet, the trending sub-topics being illustrative (Table 4):

RISING	
Nigel Farage	Breakout
Voting	1750%
Member state of the European Union	1150%
David Cameron	800%
European Union	700%
United Kingdom European Union membership referendum, 2016	650%
Boris Johnson	600%
Referendum	550%
Independence	350%
Gibraltar	300%
Gross domestic product	300%
Europe	300%
UK Independence Party	250%
Prime minister	250%
Stock market	200%

Iceland	180%
Countries of the United Kingdom	170%
Parliament	140%
Scotland	120%
Great Britain	100%

Table 4. Google Trends – Topic "European Union" 2016 Jun, RISING - Related topics, Worldwide, Data source: Google Trends 09/2017 (www.google.com/trends)

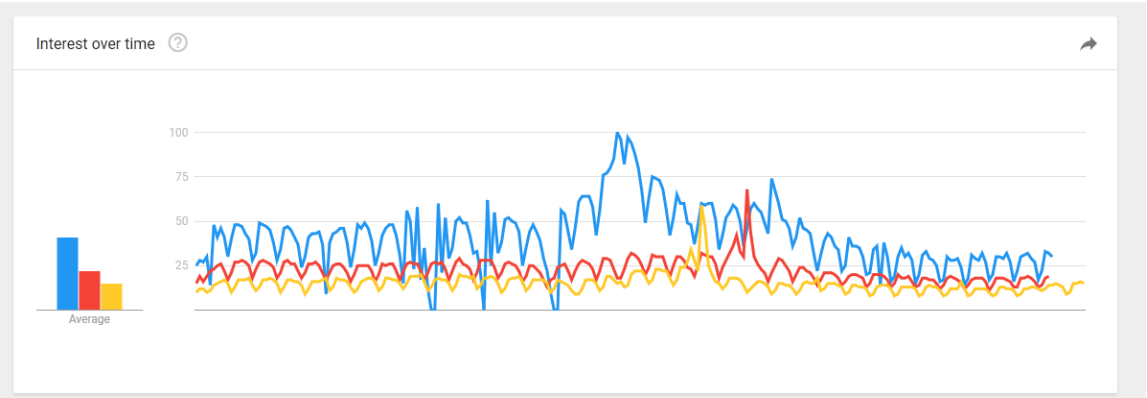
Almost any of the top 20 search keywords recorded are directly related to the subject of the British Referendum. But if the interest rapidly builds-up in the eve of the event, it vanishes with the same speed right after it. In less than one week, the topic "European Union" returns to its "normal" values, as recorded at the beginning of the same month (Graph 6)



Graph 6. Google Trends – Topic "European Union" 2014, 2015, 2016, Worldwide, Data source: Google Trends 09/2017 (www.google.com/trends)

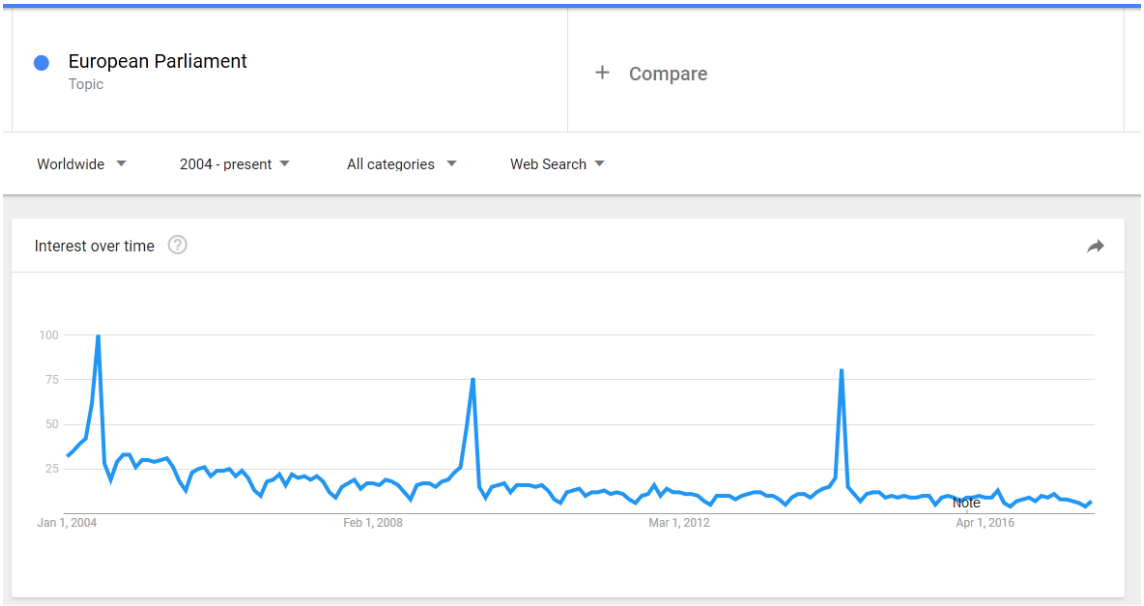
Aside the extraordinary events present as extraordinary inflexion points in this timeline, the all-time evolution of the trend of the topic we investigate follows a non-linear pattern, with drops during the vacations and holidays, and rises once the people return to activities.

But there is more: we can notice increases in the trend line in some particular years (2004, 2009 and 2014) and some particular periods of those years overlapping – somewhere in May (Graph 7)

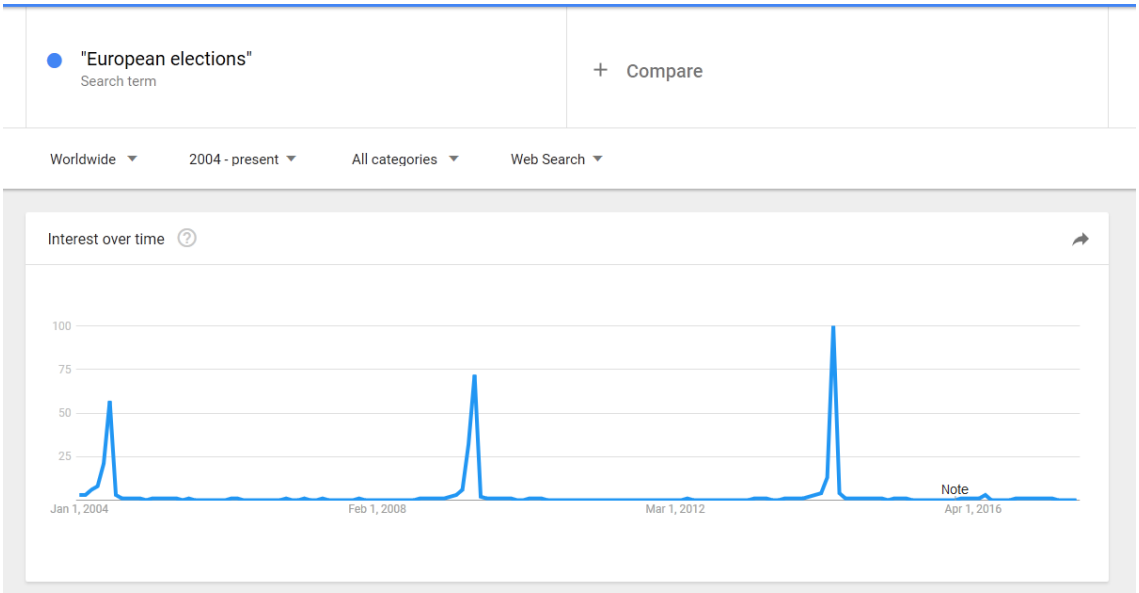


Graph 7. Google Trends – Topic "European Union" 2004, 2009, 2014, Worldwide,
Data source: Google Trends 092017 (www.google.com/trends)
Legend: Yellow: 2014, Red: 2009, Blue: 2004

Filtering-out the confounder(s) for the 2004 outstanding trend – i.e. the already mentioned accession to the club of the ten countries – the single major event of the period, being 1) related to the topic and 2) recurrent with a five years periodicity is the election for the European Parliament. We can verify this more accurately by switching the analysis to the related search terms / topic: As we see, the general trend of the interest for the topic "European Parliament" over the years is closely related to electoral periods (Graph 8).



Graph. 8. Google Trends – Topic "European Parliament" 2004 - present, Worldwide,
Data source: Google Trends 09/2017 (www.google.com/trends)



Graph. 9. Google Trends – "European elections" search term, 2004 - present, Worldwide,
Data source: Google Trends 09/2017 (www.google.com/trends)

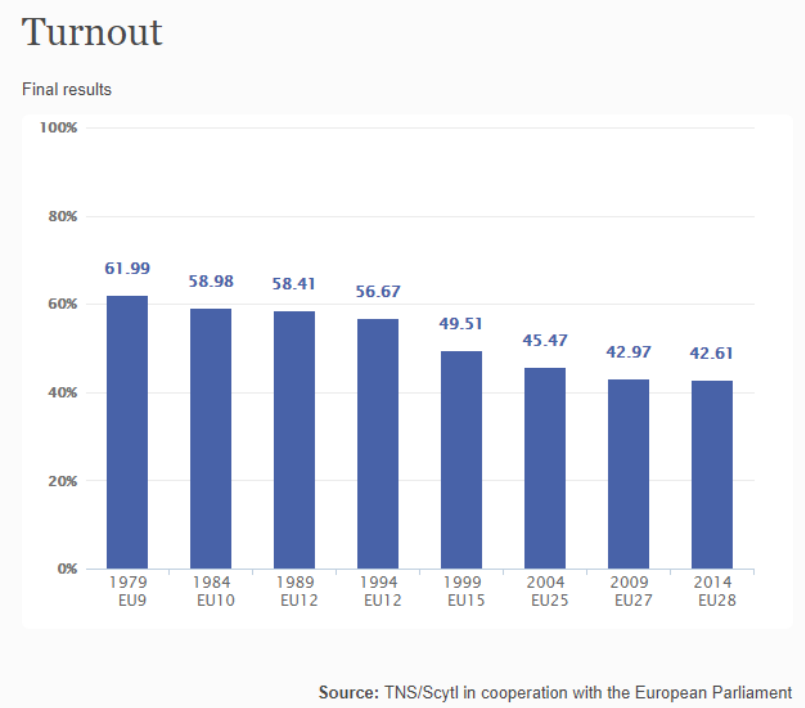
Graphs 8 and 9 depicts with high precision the European election periods in the 2004 – 2017 timeframe.[34]

In Graph. 8 we can notice the general decrease in search (relative to the total searches) over this topic, "European Parliament", which is not surprising that a sub-topic follows the trend of the main topic. Let's compare this topic with a related one: "European Parliament" vs. "European elections" (restricted search term)[35].

While the interest for the general topic "European Parliament" follows the general and already observed decreasing trend of the EU topic, the search term "European elections" (Graph. 9) appears to be more present from 2004 to 2014. Even if the analysis was restricted to the exact phrase, the result may be biased, mainly by disambiguation. However, this observation needs further attention, beyond the scope of this presentation.

Superimposing the above figures with the turnover in European elections over time, we can notice a match (see Graph. 10).

[34] Elections for the European Parliament – a.k.a. "the European elections" – are held each 5 years in May. Each member state is free to choose the election dates in a given interval in that month.
[35] In Google search, quotes restricts search to the exact phrase



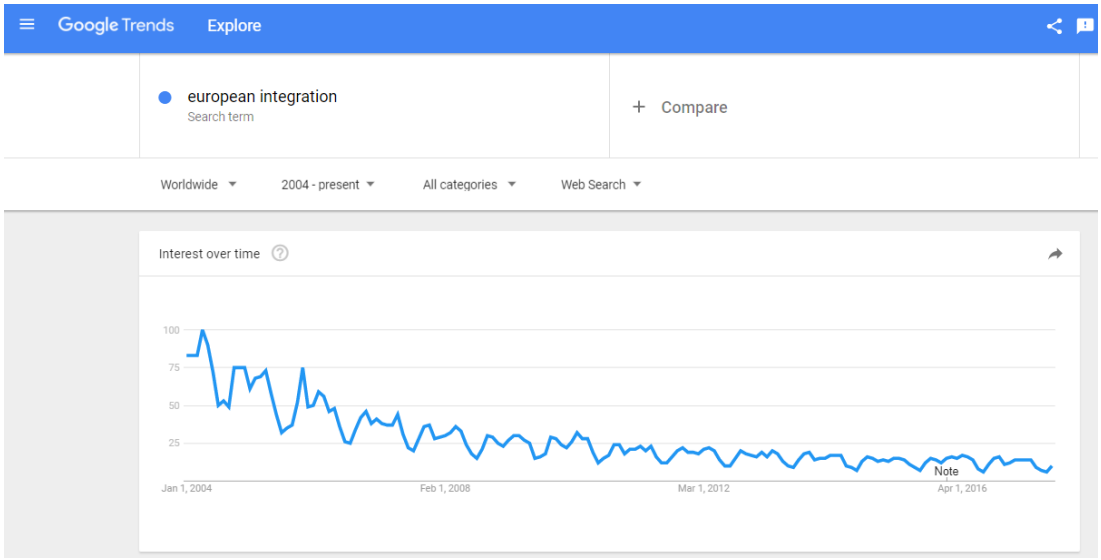
Graph. 10. Europarl.eu – Elections Turnout 1979 - 2014

Data source: TNS/Scytl in cooperation with the European Parliament (http://www.europarl.europa.eu/elections2014-results/en/turnout.html)

The descending trend in search terms or topic is consistent with the voter turnout as registered in the past three rounds of EP elections. The right tail of the trend-line in Graph. 8 indicates a less pronounced decrease which is, again, in line with the turnout figures in the last elections (2009, 2014). This enables us to consider the internet search of general population as a weapon of choice, in the future, in forecasting electoral behavior of the EU citizens facing the EP elections. Considering a larger and deeper access to the internal databases for feature refining and selection, and with the aid of the emerging technologies, i.e. machine learning, a predictive model for the future of the EP and EU based on Internet queries looks more than promising.

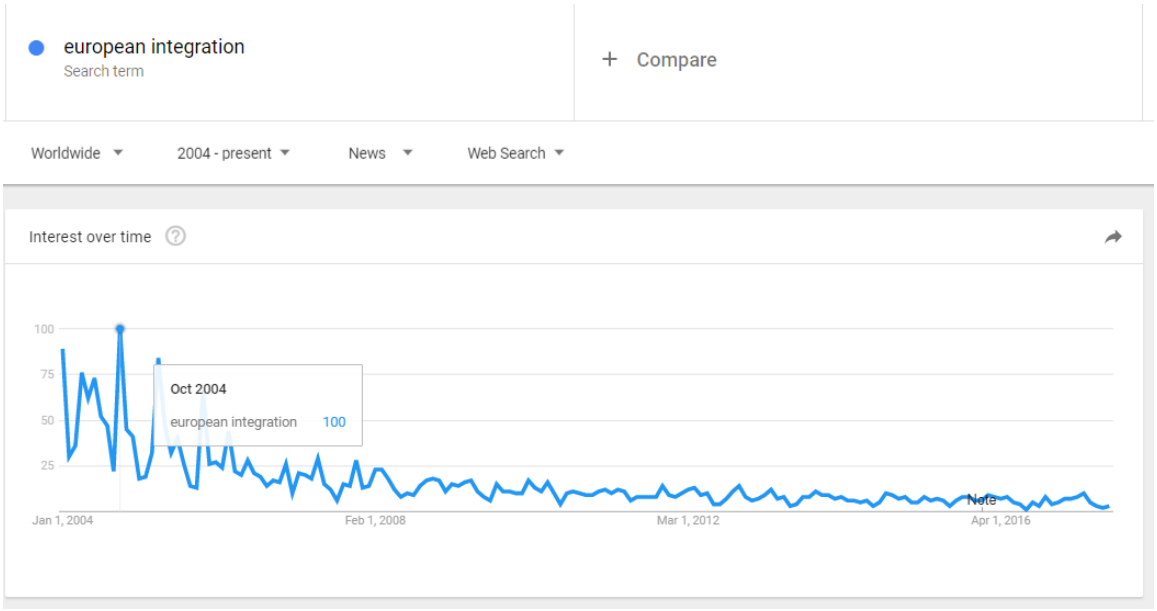
Stepping a bit further, we can briefly analyze some other topics or keywords, the results being particularly interesting and inviting for possible more detailed studies.

As an example, the search popularity of the "European + integration" keywords follows a similar trend as the EU topic. (Graph. 11)



Graph. 11. Google Trends – "European integration" search term, 2004 - present, Worldwide, Data source: Google Trends 09/2017 (www.google.com/trends)

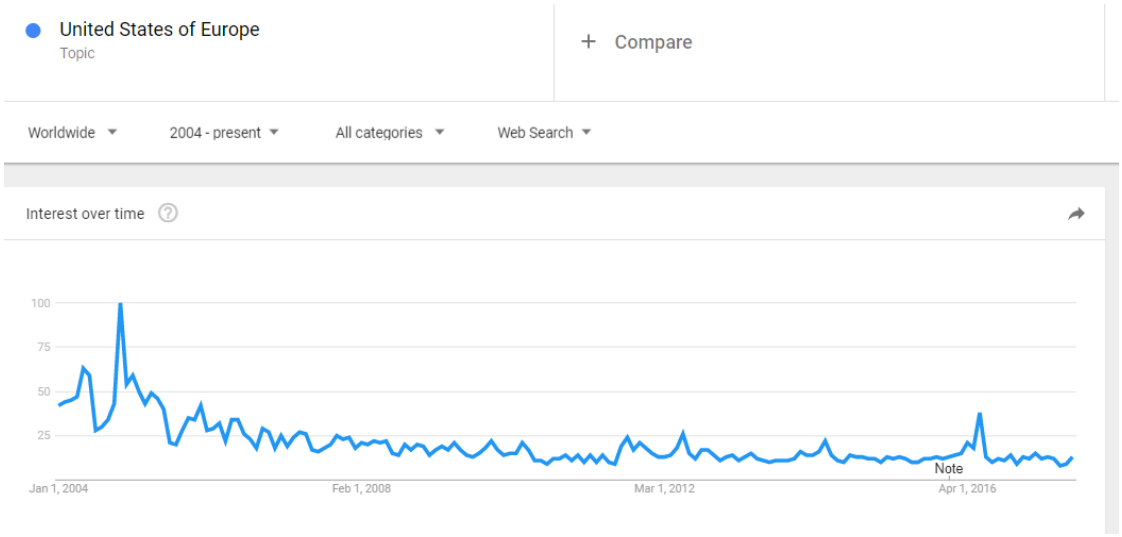
The tip from which this chart starts is (also) the spring of 2004. But Google Trends provides a suplimantary time-line analysis feature, through media coverage (News - Graph. 12). From this prospective – of how the term/topic was reflected in the news-related-searches – a different point of flexion is in highlight, somewhere in October 2004. More precisely around the end of the month. In that particularr month, on October 29, "The heads of state and government and the EU Foreign ministers sign the Treaty establishing a Constitution for Europe" (Europa.eu, 2017). That event was a trigger for people's interest in the European politics.



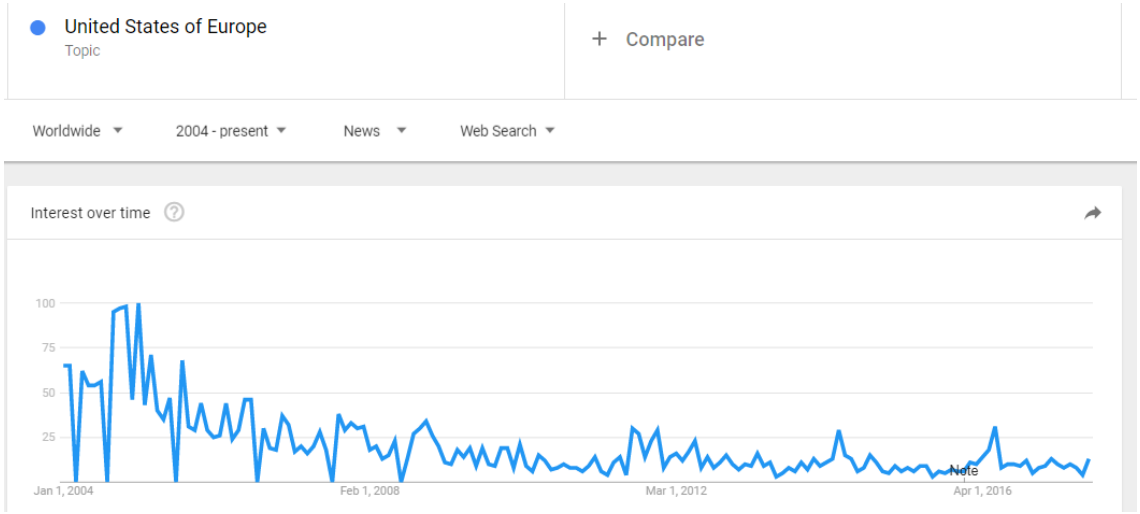
Graph. 12. Google Trends – "European integration" search term in the News, 2004 - present, Worldwide, Data source: Google Trends 09/2017 (www.google.com/trends)

GoogleTrends, unfortunately, does not have enough information to solve the ambiguity of searching under the terms "multi-speed Europe" or "two-speed Europe". It would have been interesting to see a trend of this topic revived by European politicians lately.

But the instrument gives us an unexpected picture of another "Euro-subject", which is more of a romantic outlook on the Union and which, in those days, seems completely out of the debate: the "United States of Europe" (Graph. 13, Graph. 14):



Graph. 13. Google Trends – "United States of Europe" Topic, all categories, 2004 - present, Worldwide, Data source: Google Trends 09/2017 (www.google.com/trends)

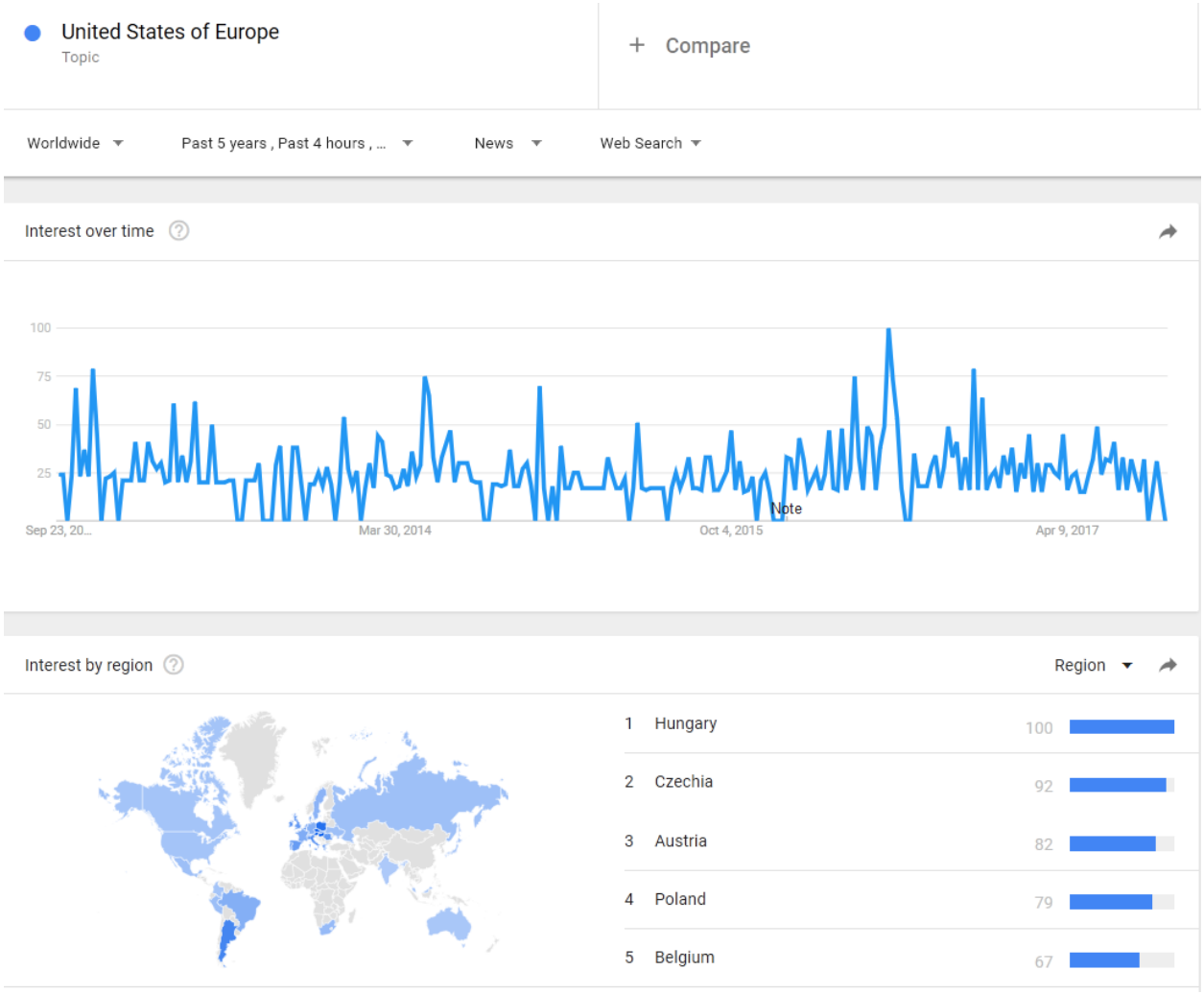


Graph. 14. Google Trends – "United States of Europe" Topic, in News, 2004 - present, Worldwide, Data source: Google Trends 09/2017 (www.google.com/trends)

Even if this topic looks obsolete or out fashioned to those following the EU politics, in an optimistic note for the supporters of a stronger EU, if a restrictive Internet search (exactly these words) still gives more than 30 million results - many of which of recent date -, it could suggest that this topic has not yet exhausted its fuel.

More, while Poland's, Czech Republic's and Hungary's democratic elected leaderships placed those countries' foreign politics in the last years on what is categorized as

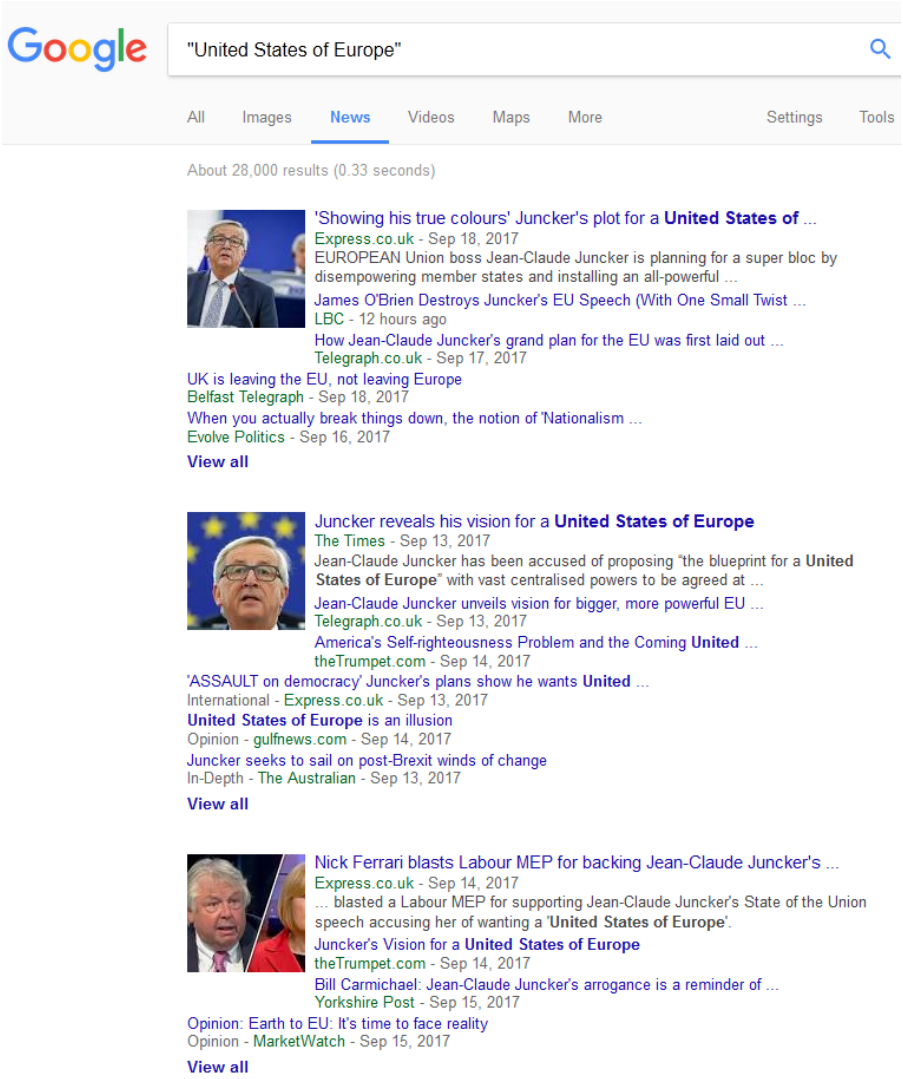
an Eurosceptic orbit, some of the highest hit rates on the topic on Google Trends News comes in the past five years from Hungary, Czech Republic and Poland (Graph. 15). It's interesting to know what citizens of this three countries are exactly looking for and expecting when querying the Internet about or how. While we can only speculate on this, the quantitative data only let someone to infer that is a certain elevated interest for the subject of the United States of Europe in that part of the EU.



Graph. 15. Google Trends – "United States of Europe" Topic, in News, 2012- - present, Trend and interest by Region, Worldwide,

Data source: Google Trends 09/2017 (www.google.com/trends)

What people are getting by querying the Internet on this topic? A quick search on Google returns plenty of entries – both on general topics and the News -, from those explaining what "The US of Europe" is about as a theoretical concept, to Junker's[36] "plot" for a United Europe - subject covered, almost entirely, by the post-Brexit UK media. (Picture 2)

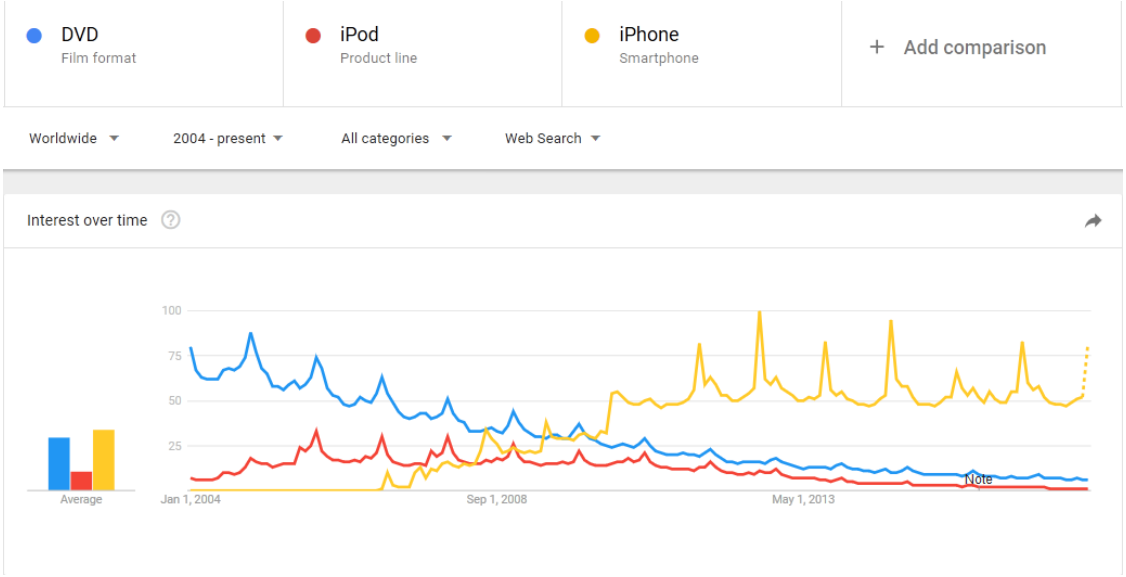


Picture 2. Google Search "United States of Europe", News section [Sep 2017]

[36] Jean-Claude Juncker

Conclusions. A glimpse in the future

"Out of sight, out of mind", is a popular saying, meaning that what is less present, will be soon forgotten. Having that in mind, is a topic of less and less interest - in internet search ranking logic - condemned to disappear from the public agenda? In other words, is the declining interest in Internet searches over a topic a predictor for the expiration of the object of this topic? Apparently yes. Looking at the figures below (Graph. 16) we can contemplate the fate of once a popular and beloved support for music and films (the DVD), the short life of one of its challengers (iPod) and the rise of the new realm of personal media, the iPhone.



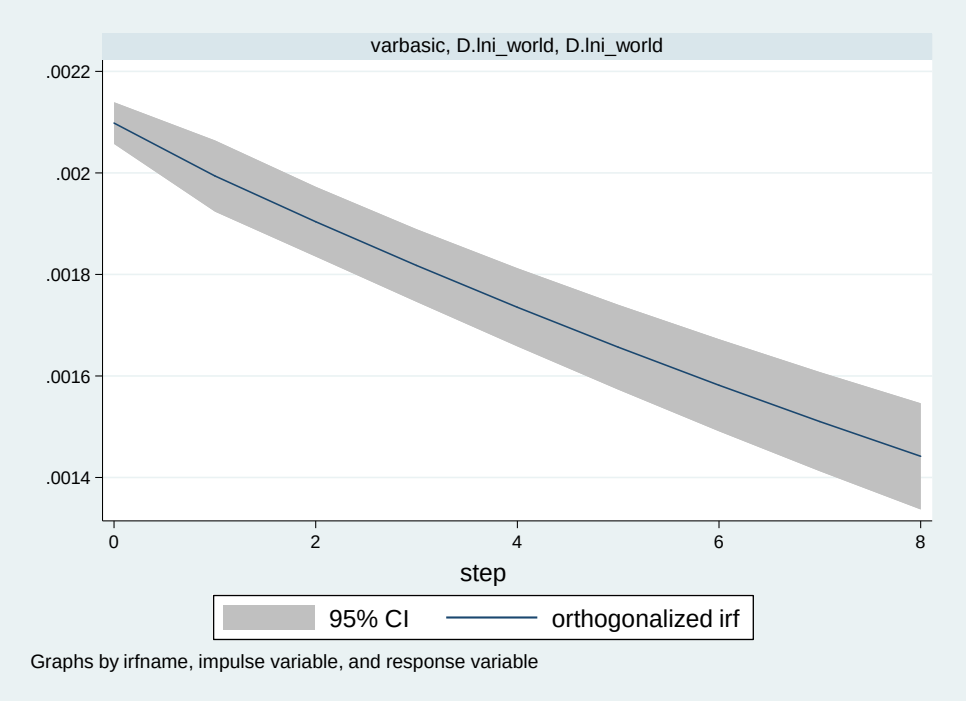
Graph. 16. Google Trends – DVD Vs. iPod vs. iPhone, Web search 2004 - present, Worldwide, Data source: Google Trends 09/2017 (www.google.com/trends)

Can we generalize this observation?

Back to the base one (Graph. 1), we can notice a downwards trend and naïvely expect that the trend line will keep going down, but is this a valid prediction, or is just "predicting the present"? (Varian, Choi 2009). What Varian and Choi outline in their paper is how playing around with Google Trends one more likely can verify the present, instead of making an intuition on the future: "*We are not claiming that Google Trends data help predict the future. Rather we are claiming that Google Trends may help in predicting the present. For example, the volume of queries on a particular brand of automobile during the second week in June may be helpful in predicting the June sales report for that brand, when it is released*

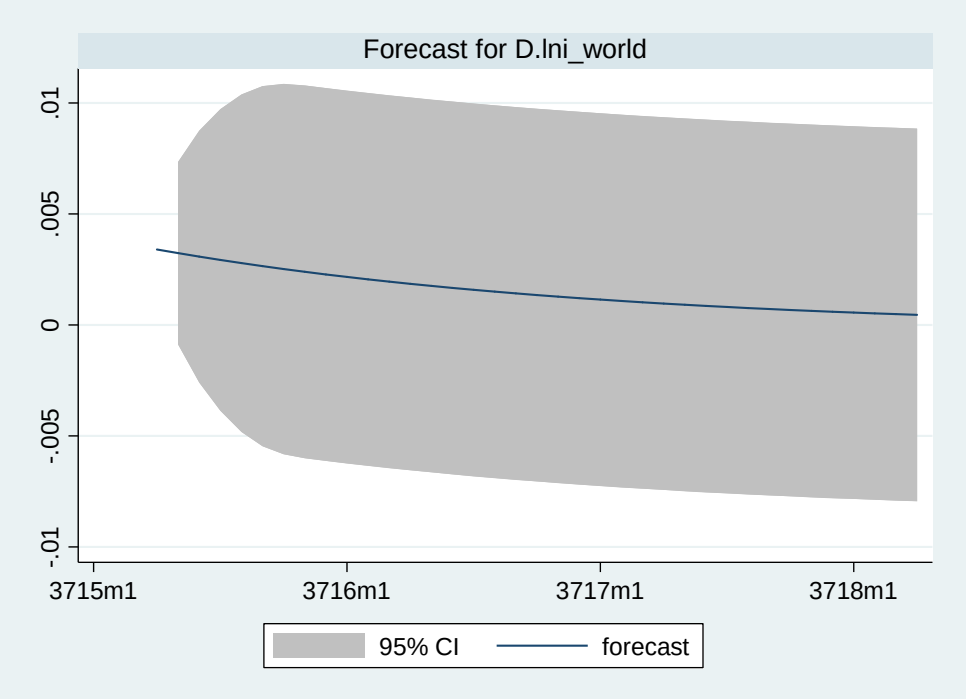
in July." However, as a footnote, the authors let the door open: "*It may also be true that June queries help to predict July sales, but we leave that question for future research*."

But can one really predict on this data? Basically what Google Trends provides us is a time series database we can see as a graph, but also download and play with. Statistics are offering all the tools necessary to handle such database, interrogate and make predictions on it. Applying time series analysis[37] on the database Google Trends produced for the Topic "European Union" on searches from 2004 to date, we tried to forecast the near future trend on this topic. For this demonstrative purpose we used ARIMA[38] and dynamic forecasting after VAR[39] in STATA[40] to predict the topic's trend in the next months after the date of data collection (Sep 2017). Both methods gave us the idea that for the next period (36 months) the World-wide search trend for the topic "European Union" on Google engine will keep dropping. (Graphs. 17, 18)



Graph 17. VAR trend for "European Union" topic trend data, TS Lag 3 periods (36 months),
Data source: Google Trends 09/2017 (www.google.com/trends), Analysis Stata15 / Vector autoregression

[37] https://en.wikipedia.org/wiki/Time_series
[38] https://en.wikipedia.org/wiki/Autoregressive_integrated_moving_average
[39] https://en.wikipedia.org/wiki/Vector_autoregression
[40] StataCorp. 2017. Stata Statistical Software: Release 15. College Station, TX: StataCorp LLC



Graph 18. Dynamic forecast trend for "European Union" topic trend data, TS Lag 3 periods (36 months), Data source: Google Trends 09/2017 (www.google.com/trends), Analysis Stata15 / fcast

Autoregressive models are generally performing fine in extrapolating /predicting trends based on raw data. However, the Internet search specificity makes things a little harder. Sophisticated statistics above only tells us what was already in plain view and is already known for decades: the interest over that particular topic is far from rising.

But looking at details, what we can really learn by contemplating this figures is that a game changer – even if not a happy moment for the EU, like the Brexit – can rapidly and intensely re-focus the public opinion's attention back on the topic. The same analysis proves that recurrent moments in the life of the Union – like the European Elections, the 9th of May etc. – constantly triggers the public attention. And this is worthy information, serving in understanding of how a topic can be kept alive and revived.

Analysis of the Internet searches is a relatively new player in the field of social research, gaining more and more attention. Vast resources are allocated to understand and make a potential profit from the new world where, more and more, the real world is moving

rapidly. But even a brief and shallow exploration of this vast and continuously expanding resource unveils the huge analytical potential behind it. The more people get access to the Internet and interact with it, the more one observer can find about those people and their actions in the real world.

As seen in this paper, just using the free "basic" access to the resources, with publicly accessible tools and without any tuning and some common sense to match the obvious inflexion points on the graphs with the relevant corresponding historical data, one can immediately observe how the real world resonates with specific subjects at certain times. This is encouraging as a starting point for future and more focused studies meant to understand and even predict social, political and electoral trends.

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