Europe’s rude awakening to big data politics

To many in the Brussels bubble, the big data revolution came as a rude awakening, with revelations of mass-scale eavesdropping by US intelligence. Although EU policymakers have now embraced the economic potential of big data, privacy fears are never far in the distance.

Politicians across Europe tend to look suspiciously at the big data revolution as an imported American trend, which encroaches on their privacy.

And with good reason. Revelations that American intelligence services had tapped the servers of internet companies have prompted EU regulators to tighten privacy laws and request a new agreement to oversee data transfers with the US.

In Brussels, some European Commissioners joked at the US spying scandal by starting private press briefings with a customary word of welcome for potential listeners in Washington.

Things have moved on since then. EU policymakers have now become champions of “big data” – both as a driver of economic growth and as a support tool in some policy fields.

Countering terrorism and Russian propaganda

One key area is counter-terrorism. Interest in big data analytics picked up significantly after the attacks in Paris last year.

EU initiatives have sprung up to monitor social media websites for posts that spread radical messages and aim to recruit fighters for extremist groups, particularly in Syria.

A forum bringing together internet firms and law enforcement agencies to combat online extremism was launched in December last year, and is said to include delegates from Google, Facebook, Twitter and Microsoft.

Earlier, Members of the European Parliament voted a report calling for criminal charges to be pressed against the likes of Facebook and Twitter if they do not remove posts by jihadists on their websites.

Another flagship project is the creation of a special unit at the European Commission dedicated to countering Russian propaganda, launched in the wake of the crisis in Eastern Ukraine and the annexation of Crimea.

The nine-person unit at the Commission’s External Action Service was created last year. It focuses on “correction and fact-checking of misinformation” on the Internet, based on data gathered by a network of 400 contributors from across the EU and Eastern Europe.

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Making sense of the data

But making sense of the huge amount of information posted on social media requires more than humans. “Social networks produce such a volume of data that it is impossible to be processed by the human brain purely by reading,” explains Laurentiu Vasiliu, Founder and CEO or Peracton, a company that provides real-time “sentiment analysis” for investors.

“So we do need machines to analyse and process this data for consumption,” said Vasiliu who was speaking at a recent EurActiv.com event on big data mining.

Peracton’s tool was initially developed to track “hype” about a particular stock and help traders make decisions on whether to buy or sell.

But the software can be applied to any other area. Counter-terrorism officials for instance may want to track occurrences of particular words or phrases used by jihadists when recruiting online and associate those with geographical locations or specific social media accounts. For politicians running for election, it might involve tracking positive or negative sentiment on social media around some of their campaign themes and help them adapt their message accordingly.

“The opportunities are huge: From politics to economics, people can see in real time what’s going on,” Vasiliu said.

Economic potential hampered by copyright, privacy issues

On the regulatory side, the European Commission wants to promote the data-driven economy as part of its Digital Single Market strategy.

“Some say big data is the currency or the oil of the digital single market,” says Beatrice Covassi, deputy head of unit in charge of the data value chain at the Commission’s directorate for digital affairs, DG Connect.

“Yet, only one in twenty top big data companies in the world is European,” she told a EurActiv event last year, saying the Commission was trying to set in place the right conditions “to create a community around big data” and exploit those technologies in Europe.

“Data and data processing already represents about 5% of the total input that we use in terms of resources in the manufacturing process,” said Hosuk Lee-Makiyama, director for digital economy at ECIPE, a think tank. “This means data is already as important as electricity or labour,” he told the same event, held in June last year.

Even Julia Reda, a German MEP from the Pirate Party, believes big data mining “can have a huge potential” – as long as citizens remain in control of the private information they share online. Some might want to share their medical data online for example because they want to find patients with the same diseases and interact with them. Others might be interested in “quantifying” their social media behaviour, she explained.

But Reda said there are “many legal obstacles” preventing individuals from engaging in such online activities, chief among those being the uncertainty over material shared on social media, which might be protected by copyright.

Privacy issues are also never far in the distance, with fears that data can be harvested without people’s consent.

“The challenge is privacy. If you’re looking at Twitter, Facebook and so on, people need to be comfortable that their data is being used for such analysis – and if not, opt-out,” Vasiliu explained.

Data protection reform

Lawmakers in the European Parliament sought to soothe those fears when they adopted a reform of EU data protection legislation last April, after years of arduous negotiation.

Green MEP Jan Philip Albrecht, who represented the Parliament in negotiations with the 28 EU member states, hailed the agreement as “historic”, saying the new General Data Protection Regulation is “future-proof and open to innovation”.

The new GDPR “will enable people to regain control of their personal data in the digital age,” Albrecht claimed in an opinion article co-signed with Věra Jourová, the EU Commissioner for Justice, Consumers and Gender Equality.

“The economy will also greatly benefit from this reform, which is a key foundation of the Digital Single Market,” the pair wrote, saying the reform will reduce costs and increase legal certainty for businesses, with a single set of rules across Europe replacing 28 diverging national laws.

But Julia Reda is also keen to remind enthusiasts about the limits of big data analytics.

“We need a lot of education about what you can do with data but also about the limits of data analysis and where we need to rely on other methods of finding out the truth or making moral judgements,” she said.

“If data protection is respected then big data mining can have a huge potential.”
EU politicians convert to ‘big data’ as campaign weapon

US politicians are the acknowledged forerunners when it comes to using digital technologies in election campaigns. But Europeans are making strides in their attempt to catch up, with the 2014 EU election providing a testing ground for big data analysts.

The Howard Dean campaign for the 2004 US presidential election is considered as a kind of year zero of data analytics applied to political campaigning. Although he lost the Democratic party nomination to John Kerry, Dean is remembered for pioneering internet-based fundraising and grassroots mobilisation, which inspired others after him.

Echoes of the Dean campaign are still being heard today, but with an added twist called big data analytics. Political campaigners have long sought to segment their electorate according to income, ethnic origin, age group or any other socio-demographic factor that can play a role in an election.

This ability to identify and target specific parts of the population was taken to a new level during the 2012 US election. And it was made possible by big data analytics.

‘Knock the vote’ campaign

The Schulz team had done their math before the campaign, based on turnout figures, to measure the size of their electorate. Whereas national elections register between 65 and 80% turnout, European elections tend to score 43 to 50% at best, Synnott said. “So that opened up a much higher percentage of the electorate that would be your core base,” he told EurActiv.com.

Based on these calculations, the PES launched what they called the ‘knock the vote’ campaign. “Knock the vote’ was about how you digitally go knocking on people’s doors – not just to encourage them to go and vote but also to campaign and mobilise,” Synnott said.

“Put simply, you could say: Facebook for mobilisation, Twitter for information,” Synnott said.

Voter records

But how do you identify those potential voters?

One big difference between Europe and the US is access to voting records. In the US, campaigners can consult registers of previous elections, allowing them to identify neighbourhoods – individual houses, and people – who are likely to back their candidate.

These records contain information such as age, gender, and income, but
also participation in previous elections, including voting preferences. For some individuals, these records can be extremely detailed. Digging through this data allows predicting the probability that individuals will vote for a candidate and target undecided voters in the hope of turning around an election.

“This is really big data: a table with one million people, and each of them with 7,000 entries,” says a Brussels insider with knowledge of digital campaigning tools and methods.

Matching these voter records with profiles developed by data brokers allows campaigners to grow a database of potential voters who can then be approached in several ways: via social media, on the phone, or in person, knocking on their doors.

“If you have information about how old they are, how much they earn and where they live, then you look for people who are similar and approach them,” the Brussels insider explains.

**Data misuse**

In Europe, most countries don’t allow access to voter records, so campaigners look for their data elsewhere.

It can be obtained from electoral polls, but also from “surveys, interviews, door to door, focus groups, applications in social networks, web statistics, data obtained by local campaign staff, etc.” says Xavier Peytibi, a political consultant who has run various campaigns for presidential, regional, and local elections in Spain and Latin America.

However, this can prove legally borderline, for example when individuals are identified by website “cookies” tracking their online activity, sometimes without them realising.

“Data can be misused in many different ways,” warns Aurélie Valtat, an official in charge of digital strategy at the European Commission’s development directorate (DG Devco), which manages multi-million international assistance programmes in the world’s poorest countries.

“It can be misused because it hasn’t been captured in an honest and legal way,” she told a EurActiv event on big data mining, held in March. “It can also be misused because the people supplying the data are not representative of the population that you’re trying to capture,” she said. Another challenge, Valtat pointed out, is whether the private records of individuals can be stored legally or not, and for how long.

Diego Naranjo, a privacy campaigner for the European Digital Rights initiative (EDRi), is more alarmist. “Data brokers have our personal data and they are already trafficking with it,” he told the EurActiv event, pointing to what he calls “pregnant data” stored on databases and ready to be sold without consideration for privacy or fundamental rights.

For political campaigners desperately looking to expand their electorate, the temptation to buy dubious databases can be difficult to resist.

But surprisingly, a lot of the personal information is also provided voluntarily by grassroots campaigners or party sympathisers on social media.

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By building a database of people with similar socio-demographic attributes. “By building a grassroots campaign through a tool like NationBuilder, you’d be able to build up your profiles that way and then apply them on different platforms,” Synnott explains.

**From data to persuasion**

For some, data has turned into an obsession, if not an addiction.

“Big data, today, is an essential tool for an election campaign,” says Xavier Peytibi. “In any city, in any election, it is essential to meet your voters, and it is also essential in order to get your message across to impact them in a more direct way,” he told EurActiv.

“Data is information and information is power to discern what message by a party or candidate can get closer to a supporter or a voter, either to mobilise him or to get him to vote,” he said.

The hunger for data by political campaigns has fostered a growing industry of analytics start-ups and political consultancies. One of them is Liegey Muller Pons, a Paris-based firm, which claims to be the first campaign technology start-up in Europe.

As you would expect, the firm draws much of its inspiration from field trips it made to the US. “The most recent political campaigns [in the US] were targeting mainly two groups: the democrat ‘abstentionist’ and the hesitant ‘participationist’," Liegey Muller Pons wrote in a blog post reflecting on the 2012 Presidential election.

“Today, the latest innovations are aimed at improving persuasion models to identify even more precisely what fractions of the electorate can change their minds after a campaign contact and what messages and arguments are able to produce that change,” the firm wrote.

Liegey Muller Pons is close to the Socialist family and advised the PES during the 2014 EU election campaign. It currently counts French Economy Minister Emmanuel Macron among its most prestigious clients.

But the centre-right European People’s Party (EPP) is equally keen on digital tools.

**Juncker campaign goes digital**

During the 2014 election, the campaign team of EPP candidate Jean-
Claude Juncker – now President of the European Commission—made heavy use of Twitter, Facebook, Instagram and Flickr to spread its message.

“The Juncker campaign had a team of 25 e-campaigners who sat in the ‘war room’ of the EPP headquarters and oversaw the campaign’s numerous Facebook pages and Twitter,” recalls Juncker’s spokesperson Natasha Bertaud, who was among the key figures in the Juncker team.

“Contrary to the other campaigns, the EPP had Twitter accounts and Facebook pages for every EU member state we were campaigning in,” allowing targeting local audiences in their native language, Bertaud told EurActiv.

The multilingual dimension of the Juncker campaign allowed “generating the most ‘buzz’ around the EPP candidate,” Bertaud claims. Within weeks, Juncker’s Twitter account had already gained 20,000 followers, she said.

Limits of big data

But Bertaud is also quick to remind the limits of digital campaigning, especially in a European election context, where interest is lower than for national elections.

“You have to be realistic about what you can expect in terms of reach – this was not a US presidential election and Juncker was never going to rival Justin Bieber for followers,” she said.

Social media buzz is indeed no accurate proxy to predict who will win an election, according to Wired, America’s longest-running tech culture magazine. Still, online activity “does give us a previously unseen window into the types of issues Americans care about most,” the magazine writes.

“It’s trends,” Valtat summarised. “Big data mining can give you information about trends in elections, trends in public opinion and what it means for the people involved. But it’s not a reflection of the real world – it’s just an image through social media”.

Synnott agrees, and cautions about focussing election campaigns too heavily on digital and big data.

“Digital is not something that exists in isolation,” he said. “It’s a tool that’s part of an overall strategy. So you have to combine it with grassroots, with face-to-face, in a way that people can relate to it”.

He is also keen to assuage concerns by conspiracy theorists who see big data as a dangerous tool for government surveillance or electoral brainwashing.

“Some people get scared and see this just as big data. But it’s also genuine engagement with real people who can get a sense of their own stakes in a political campaign,” Synnott said.

“Most importantly, I think there was a template established that I think could be used in 2019.”

An analysis of over one and a half million tweets mentioning Brexit over the last two weeks indicates that Twitter users in the UK tend to support remaining in the EU.

As of Tuesday morning (21 June), 62% of tweets expressed support for the UK staying in the EU, according to data analysed by a group of researchers. Britons will vote in a referendum tomorrow on whether to stay in or leave the EU.

The SSIX consortium is a small group of data researchers and tech companies focused on data analytics. The group measured English-language tweets about Brexit from around Europe, counting 73.1% of activity from Twitter users in the UK.

After the UK, Twitter users in the Netherlands were most vocal about Brexit, sending out more than 10% of all the tweets measured.

Tweets from Ireland made up around 3% of the total, while Greek Twitter users accounted for 2% of tweets. Belgium, France, Germany,
Spain and Italy each made up less than 2% of the total number of tweets on Brexit.

‘Remain’ wins Tweeter volume battle

The data researchers involved in SSIX starting mining tweets on 10 June, measuring whether they expressed strong or weak support of Brexit, or strong or weak support of remaining in the EU.

SSIX partnered with EurActiv.com and shared the data it aggregated on Brexit. German newspaper Handelsblatt is also a partner in the consortium.

Laurentiu Vasiliu, CEO of Peracton, a Dublin-based software company specialised in financial data analysis and part of the SSIX consortium, said British humour made it hard to judge whether some Twitter users were for or against Brexit.

“Irony and sarcasm were challenges,” Vasiliu said.

“You'd see a tweet that says ‘vote leave’ but when you click on the link you'd see Donald Trump saying something and it was clear the user was definitely not making the case to vote for leave,” he added.

The software set up by SSIX also counted tweets that were neutral or expressed disinterest in Brexit, but those weren't calculated in the number of tweets that expressed clear support for one side.

Vasiliu said the researchers used anonymous data and set up an algorithm to categorise tweets automatically. They didn’t record Twitter profiles or whether tweets were retweeted, liked or went viral.

But based on the one he saw, Vasiliu estimated that the tweets aggregated over the last two weeks were likely written by Twitter users from different age groups, and most were young or middle aged.

Vasiliu is gearing up the data mining project to use again ahead of the US presidential election this November and during the German Bundestag election campaign in autumn 2017. By then, he hopes to also aggregate data from other social media platforms to monitor what candidate voters are leaning towards.

Other social media outlets have already started collecting their own data on how users communicate about Brexit. But while SSIX uses data mining software to try to detect social media users’ political tendencies, Facebook and Google measured the popularity of topics. The companies did not indicate whether more of their users supported Brexit or remaining in the EU.

Facebook and Google data point to ‘Leave’

More than 525,000 people like the ‘Vote Leave’ Facebook group, while around 521,000 like the group ‘Britain Stronger in Europe’. That could mean Facebook users are more likely to support Brexit than active Twitter users, since SSIX pointed to more tweets in support of remaining in the EU.

Among Facebook users in the UK, the most common topic of discussion related to Brexit between 5 March 5 and 7 June was the economy, followed by immigration and health.

Most people in the UK who posted about Brexit on Facebook were between the ages of 25 and 44—and more than 52% of them were men.

Facebook drew on more of its users' personal data including age and gender, whereas the SSIX project only registered Twitter users' geographical locations if they made that public.

Google's data on how often people in other EU countries searched for information about the UK referendum places Ireland at number one. Malta comes in at second place, followed by Cyprus and Luxembourg.

Google search interest focuses on immigration

Since late May, Google users in Britain have most frequently searched for how Brexit will affect immigration, followed by the national health service and the economy as shown in the graph below.

Google's data on how often people in other EU countries searched for information about the UK referendum places Ireland at number one. Malta comes in at second place, followed by Cyprus and Luxembourg.
Big data revolutionises Europe’s fight against terrorism

The threat of terrorism has greatly accelerated the exchange of data between European states. Social media has become indispensable, both for investigative purposes and to fight propaganda.

The “Fraternity Taskforce”, a group of some 20 investigators, has been probing into the Paris attacks of 13 November 2015 since late last year. But this team, based at Europol headquarters in The Hague, has no high-tech surveillance equipment or bullet-proof vests. Its main weapon and its biggest resource is data, vast quantities of data.

Data exchange explodes

The European police organisation’s focus on terrorism has quickly taken off with this investigation. While Europol’s database only contained 1.5 million terrorism entries before 2015 – compared to 25 million for organised crime, for example – the “Friday 13” investigation alone already accounts for 1.1 million data entries.

In isolation, each individual piece of data concerning the nine terrorists that killed 130 people and injured 413 others in Paris is almost meaningless, be it a telephone number, a flight booking, a message on a social network or a notice of arrest. But when compiled, sorted, grouped appropriately or even entered into special data-mapping, drawing or analysis software, they take on a very different meaning.

Such is the complexity of the task at hand that only a trained analyst is able to make sense of the data. And even then, often only with the help of artificial intelligence.

“On my own I am just a human. I remember obvious things like an unusual make of car, for example. The machine is much more efficient, it can check vehicle registrations and ownership, and establish a link between suspects, or redirect the investigation towards other profiles,” an analyst from the organisation explained.

The scale of the “Friday 13” investigation may be exceptional, particularly due to the strong mobilisation of Europe’s police forces against the terrorist threat, but it borrows heavily from the practices of Europol, which relies on the sharing and processing of information.

Thanks to the contribution from the pan-European police organisation, this approach appears to have been particularly effective: the organisation’s contribution enabled investigators rapidly to dig up the past of the Paris terrorists and identify their contacts.

Artificial intelligence Vs classic investigation

Does this mean that artificial intelligence has become an indispensable tool in the fight against terrorism?

Europol is visibly becoming a high-tech organisation. Access to its ultra-high security premises is controlled by blood flow recognition hand scanners – a more secure system than fingerprint recognition, as fingers can be chopped off.

The large numbers of analysts currently being recruited by the agency are largely tech wizards. They constantly develop new search engines, adapt existing tools and, more prosaically, translate and enter data into the organisation’s servers. Whether these are mini files or hard drives of five terabytes (80 times the capacity of an iPhone 6), the task is immense.

The main risk for the investigators is that they may become swamped in data they cannot process. This is a criticism often levelled at 21st century investigation techniques.

“There is no miracle solution and certainly no software that can allow us to predict anything. Because we are dealing with a chaotic phenomenon. Of course we use spreadsheets and visualisation tools, but the investigation remains human, a question of intuition,” a French terrorism investigator specialised in social networks told EurActiv France.

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Guillaume Liegey: ‘Big data is cheaper for electoral analysis than polls’

Political campaigns can be refined by the analysis of “big data” to analyse and target voters. The challenge is knowing how best to use the data, Guillaume Liegey told EurActiv France.

Guillaume Liegey is the founder of LiegeyMullerPons, a start-up specialised in electoral strategy that helps candidates and their activists target their activities, with the help of databases.

Access to electoral data is vital if big data is to be used in electoral campaigns.

Is it as easy to access this information in Europe as it is in the United States?

Open data has greatly expanded
in recent years: administrations have made lots of administrative data available. There is a certain convergence between the data available in Germany, France, Italy and Spain, for example. This can be sociological, economic, demographic information, etc.

But electoral data is different. We do not have any individual data on the electorate because it is prohibited, except in the United Kingdom.

**Does this fact affect how political parties deal with big data?**

We do not have the same analytical finesse. We act at the level of the voting booth: we know who voted which way in a given population.

But this kind of precision is not useful for making targeted phone calls or sending letters, which are not necessarily the most effective techniques. We do a good deal of our work by going door-to-door, and in this case we do not necessarily need to know people's previous choices.

**Has the use of big data been important in the Brexit campaign?**

Yes, data has been important. For example, the Labour Party used databases created during last year’s general election.

**By making electoral campaigns more technological, doesn’t the use of big data risk dividing the rich and the poor parties?**

Actually, data analysis is not very expensive. It costs around 20 times less than conducting a poll. And the data is quite reliable, whereas people can lie in polls, particularly over abstention and support for extreme parties.

But then it is also true that a well-filled database is not enough to win an election. The focus should be on quality: it is better to have 200,000 good quality contacts than a million less relevant entries.

**The 2017 French presidential campaign is coming up. Will new technologies play an important role in this election?**

It all depends on technology. Effective technologies are those that enable the mobilisation of activists, and for that we need to ally data and technology with human contact. Email campaigns have absolutely no effect for collecting votes: at best people just wonder how their email address ended up in the database. If we had the email addresses of everyone in France, it would have no effect.

On the other hand, email works for fundraising by communicating with the relevant population. The same is basically true of social networks: they are good for mobilising activists and communicating with certain target groups, like journalists and politicians.

**We are seeing Europe’s traditional parties losing influence and citizens becoming depoliticised, with falling numbers of activists. Can technology revive people's interest in politics?**

On its own, not necessarily. Technology can help activists in their work. But that is all. To revitalise politics we need new people with new ideas. We would need dozens of Obamas... But there is no magic software to gain votes.

**The traditional parties have deeply-rooted campaign habits and practices. How do party activists view this new approach with big data?**

Political activists need to do interesting things. If you ask them to go campaigning on public transport at 6am, they will not be very motivated. And it is utterly pointless. But if we develop a technique to make contact direct and efficient, the activists will be very interested.

**What is the benefit of door-to-door campaigning? Isn’t it rather an old-fashioned technique?**

Direct contact was reintroduced in campaigns in the United States, and then in Europe. We need software that helps us target populations. This is something we used a lot during Hollande's 2012 campaign and which has developed in recent years, since Obama's election in 2008, in which I was an activist.

**You are currently working for the French Minister for Economy Emmanuel Macron’s “En Marche” campaign. What is your strategy?**

Firstly, we are organising a big door-to-door campaign to reach 100,000 people. We identify sample areas of 1,500 people, for example in the 11th district of Paris we have three such areas. Then we share the addresses with our activists, who are not chosen at random but based on socio-demographic criteria, with the aim of representing the population of the district. The activists then talk to the citizens and enter their responses into their smartphones with a specially-created application. We will start analysing the data at the end of August.

**Is this a comparable strategy to the one used by Ségolène Royal in 2008?**

Yes, that is an appropriate comparison, with a couple of differences: we do not ask people to contribute to our manifesto and we talk to everyone. Royal's campaign targeted only party activists and sympathisers.

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During the French regional elections, you quite accurately predicted the National Front’s progression to the second round. How did you do this? What data did you use?

We created a model to extrapolate the carry-over of votes between the two rounds in the regional elections. This is econometrics. We can identify a constituency, we understand the political evolution of the voters depending on the socio-demographic criteria.

You have worked all over Europe, are the political practices very different or can your electoral marketing models be adapted everywhere with no problem?

All countries think they are special. Of course there are some differences, but they are mostly in the legal detail. It depends on the local data protection authorities. But otherwise, our analysis techniques are the same and work in the same way.

Is it possible to recycle data from one campaign to another, and so to keep data for electoral purposes?

The French data protection authority is very vigilant: if we want to re-use data, the people concerned must explicitly agree. France is without doubt the country with the strictest data protection rules in the world, and we regularly work with our European partners on this subject.