



SCL Tea & Tech – 8 July 2020

"API's - how they work, and their contribution to the downfall of democracy" with Simon Forrester

In the final tea and tech session before the summer break, Simon gave another very interesting talk following his talk about cookies a few weeks ago. This time it was the role of APIs and their apparent role in influencing elections in 18 countries in the last two years.

Simon started by talking about what APIs are and how they work. API stands for Application Programme Interface. "User interfaces" are used for humans to talk to software, and APIs are essentially for software to talk to other software. Simon demonstrated how they work with reference to the Virtual Arbitration and NASA websites as well as the Restcountries API, with which you can call up information about countries, either by name or country code.

APIs use REST (representational state transfer) – they have a structured path and use HTTP methods. For example, they use commands such as get/head/put/patch/delete/track/connect – effectively using verbs to say what happens with data. An example would be Twitter's use of the GET favorites/list.

This all allows people to use databases and interrogate data. APIs are also used for authentication using the OAUTH protocol, which is very complicated to use. APIs also have so-called "rate limits" to protect themselves from robots, eg the NASA API only updates where the International Space Centre is every second, so it asks for the API to only be interrogated in line with that frequency.

APIs are extremely useful and for example, the SCL website uses the Stripe API to take payments and the Xero API to issue invoices. Web.02 would not exist without APIs to join together services.

However, APIs have their dark side. They can be misused by cybercriminals and Simon outlined how they can be used to undermine democracy. He gave the example of a fake sales promotion which encourages you to like, share and follow a page. The promotion is bogus but the page goes quiet and they hope that you will forget you are following it. Just before an election it changes its name and pops up with political statements of some kind. The various fake accounts start to build a narrative and tweet or post many times and can reply to each other. Trending becomes a self-fulfilling prophecy.

APIs make this happen, for example they can make the process of registering an account very quick. The numbers of fake accounts on social media are estimated to be astonishingly high:

Twitter – 4% - 20 million

Instagram – 9% - 95 million

Facebook 5% - 137 million.

The Cambridge Analytica scandal is linked to this – they used personality tests rather than promotions to harvest data, but it was difficult for Facebook to police how the API was being used.