The Visual Design of Network Data to Enhance Cyber Security Awareness of the Everyday Internet User

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Security and Privacy

Privacy

The older I get, the more
I realize the value of privacy,
of cultivating your circle and only
letting certain people in. You can
be open, honest, and real while
still understanding not everyone
deserves a seat at the table of
your life.

WomenWorking.com

Digital Footprint

Professor Luciano Floridi (University of Oxford) suggest that ***we own our digital footprint and that in a very real way, we are our digital footprints.*** He suggests that we feel harmed if our data is taken, shared or stored without our permission.

Do online companies value our privacy?
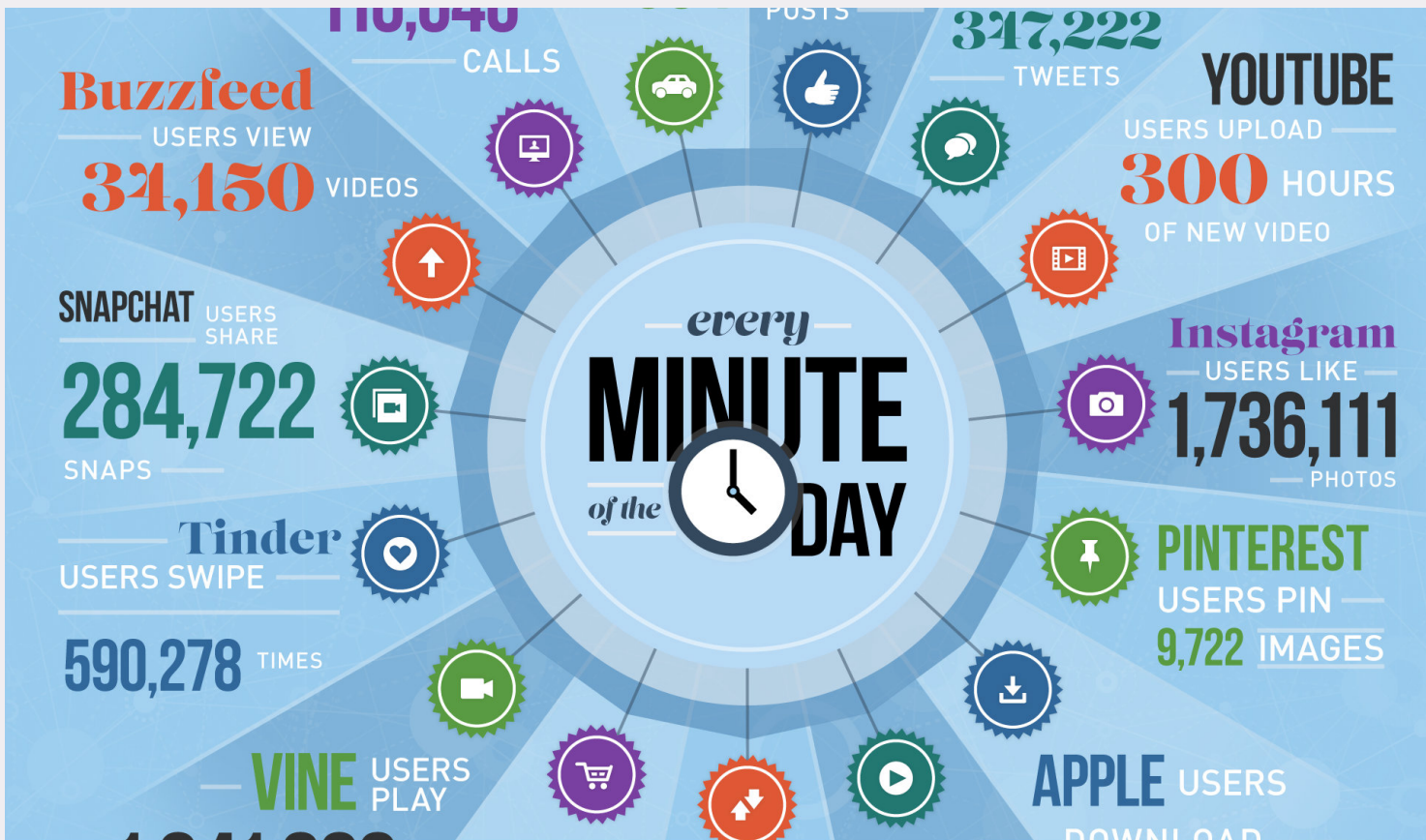
In a 2009 CNBC documentary, Inside the mind of Google, about whether people should trust Google with their most personal secrets. Schmidt replied, "I think Judgement matters. If you have something that you don't want anyone to know, maybe you shouldn't be doing it in the first place." Translation: Your privacy isn't our problem.
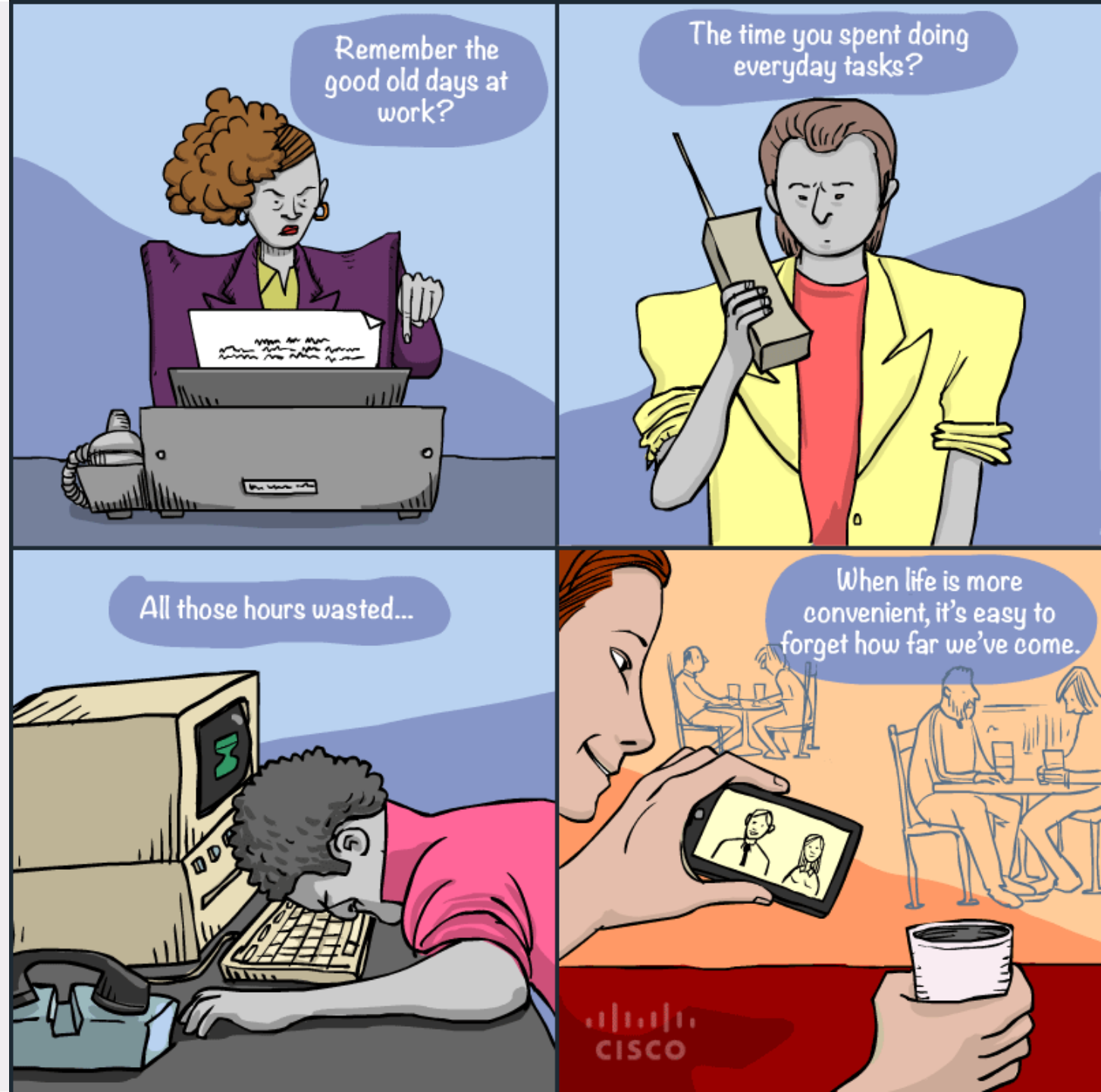
(Extract from *Don't be Evil: The case against Big Tech*, Rana Foroohar,2019)

Convenience

Disconnecting from the network would mean disconnecting from much of society. No hospital care, no TV, no news services, no telephone. Some will attempt it but most will not.
HUME WINZAR

Humans don't have to be the weak link..

Alice enters a twelve-digit alphanumeric passcode to access her account. Then she curses and re-enters a different twelve-digit alphanumeric code several times. Numbers, capital letters, special characters, no repeats—it's all just a little too much....

After this torturous series of steps, Alice receives a text message and enters another four-digit verification code to prove she has access to the phone number she listed. Finally, Alice enters her new account securely after fifteen minutes of hassle.

Meanwhile, Bob touches a screen with his fingers. A camera turns on and verifies that the face peering at the screen matches the fingerprints provided. A moment later, Bob has secure access to the system

Study1

Study 1 explores people's thoughts and feelings on their own online privacy and security and how it might be improved.

• 83% of the participants clearly stated that they did not think that their data was safe online.

They felt that a range of personal data was collected: 'everything they can, type from websites e.g. shopping online, education categories etc.'

This included personal information (i.e. names, ages, addresses, mobile numbers, friends) to shopping records to 'habits, related info, personal details, likes, wants, needs, recent searches, contact relationships...Limitless'.
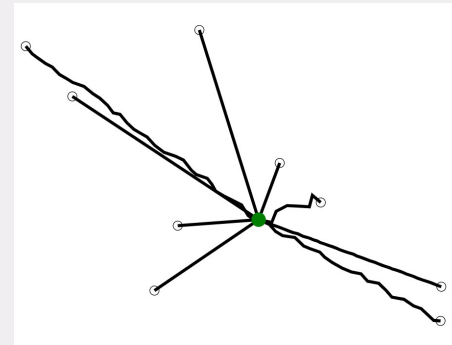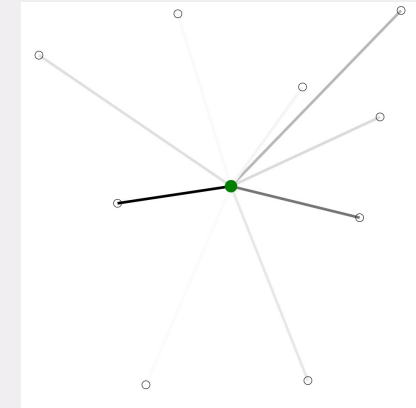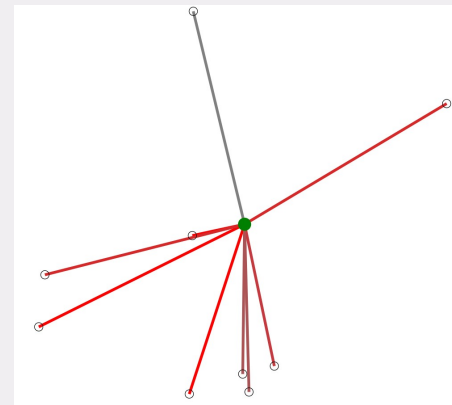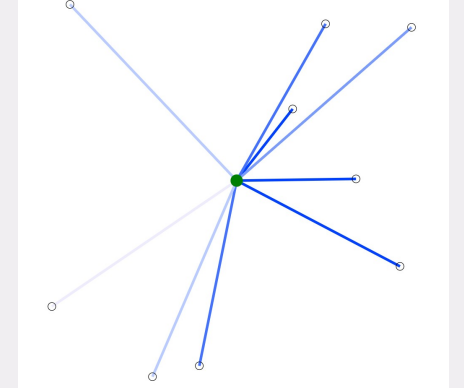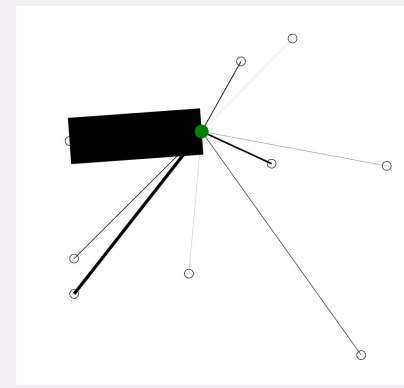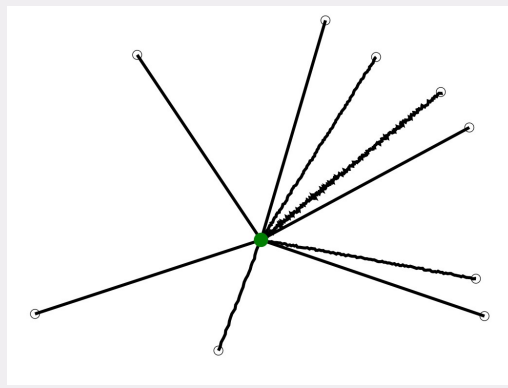
Uncertainty

'Uncertainty has the power to improve trust and decision-making in everyday contexts' (Kay, 2016)

An enhanced network visualization - focusing on the representation of uncertainty - could be used to support the confirmation of analytical facts whilst also help to discover yet unknown abnormalities within the raw data.

By better understanding how people cognitively work with uncertainty in the knowledge-construction and decision-making process, it could be possible to better direct the efforts to represent uncertainty in network visualisations.

Study2

Study 2 explores the visual design of a Network Denial of Service (DoS) attack (using an edge and node structure) to afford uncertainty amongst participants.

Any Questions?

Thank you