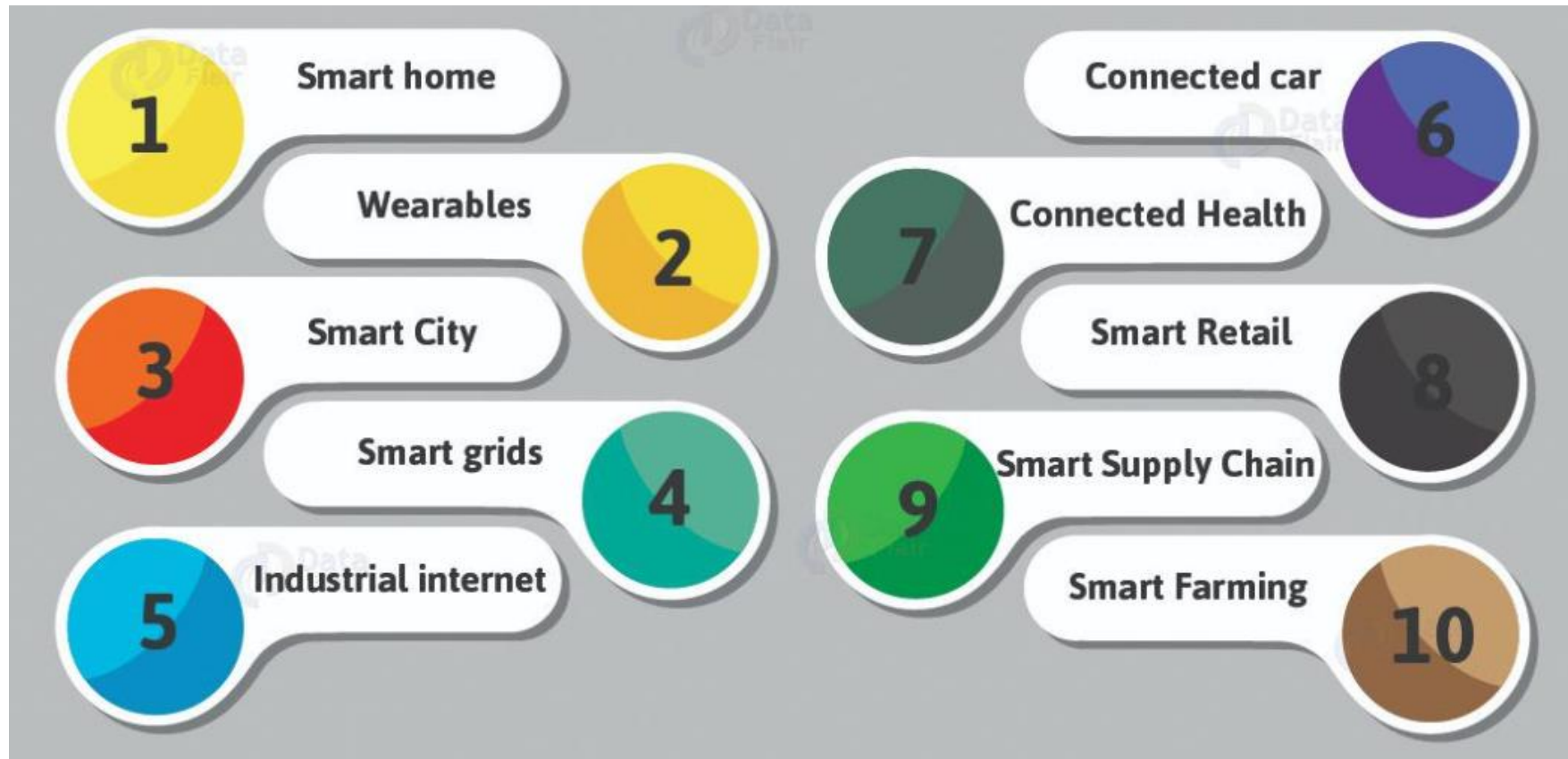




(Human) Values In Computing

Lucy Hunt
PhD Student
Lancaster University

Smart Technology



DCMS Disinformation Report



House of Commons
Digital, Culture, Media and
Sport Committee

Disinformation and 'fake news': Final Report

Eighth Report of Session 2017–19

*Report, together with formal minutes relating
to the report*

*Ordered by the House of Commons
to be printed 14 February 2019*

HC 1791
Published on 18 February 2019
by authority of the House of Commons

Internet has brought many freedoms across the world and an unprecedented ability to communicate, it also carries the insidious ability to distort, to mislead and to produce hatred and instability. It functions on a scale and at a speed that is unprecedented in human history. One of the witnesses at our inquiry, Tristan Harris, from the US-based Center for Humane Technology, describes the current use of technology as “hijacking our minds and society”. We must use technology, instead, to free our minds and use regulation to restore democratic accountability. We must make sure that people stay in charge of the machines.

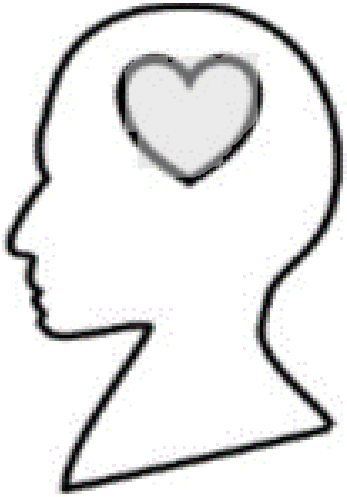
<https://publications.parliament.uk/pa/cm201719/cmselect/cmcumeds/1630/1630.pdf>

Values in Computing

Supporting software professionals with deliberative, technical, and critical skills to decide between **what is worth pursuing** – in research, education, government, and industry – from **what is potentially harmful to self and society**.



We do so by looking at values



Values are guiding principles and beliefs that we hold as important and guide our choices and actions

My story and values

- Coding on BBC Micro, ZX81, ZX Spectrum (1980s)
- MEng Engineering Science + MSc Information Systems
- Software Engineer & IT Consultant (UK wide, 10 years)
- IT Volunteer with VSO (Kathmandu, Nepal, 2 years)
- IT Business Analyst (Freelance, 10+ years)
- The National Museum of Computing (Bletchley Park)
- MSc Cyber Security (Insider Threats)
- PhD Computer Science (Whistleblowing)
- Teaching (Professional Ethics, Software Design, Group Projects)
- Volunteer (Codeclub, BCS)



High Profile “algorithm” stories in UK

Local government

🕒 This article is more than 1 year old

Councils scrapping use of algorithms in benefit and welfare decisions

Call for more transparency on how such tools are used in public services as 20 councils stop using computer algorithms

Sarah Marsh

🐦 @sloumarsh

Mon 24 Aug 2020 12.48 BST



▲ Hackney council in east London has abandoned using data analytics to help it predict which children are at risk of neglect and abuse. Photograph: Justin Setterfield/Getty Images

Exams

🕒 This article is more than 1 year old

A-level and GCSE results in England to be based on teacher assessments in U-turn

Williamson and Ofqual apologise, scrapping standardisation model after outcry

Sally Weale and Heather Stewart

Mon 17 Aug 2020 16.57 BST



▲ A level students celebrate outside the Department for Education in London after it was confirmed that candidates in England will be given grades estimated by their teachers, rather than by an algorithm. Photograph: Victoria Jones/PA

Vehicle Share Project - 2035

Vision

- UK wide network of shared self-driving vehicles
- Reduce vehicle ownership
- Safer and less congested roads

Delivery Organisation


- A. Tesla
- B. Google
- C. Apple
- D. DuckDuckGo
- E. Not-for-profit tech community
- F. Government sponsored

Part 1: For your organisation (A,B,C,D,E or F)

- Your solution overview (technology aspects - hardware, networks, systems, software)
- Stakeholders and Delivery Teams
- Finance and Management

Part 2: Values priorities for your organisation

- 3 most important
- 3 least important
- What values conflicts?
 - *For your organisation*
 - *For you / your SE team (if you were delivering)*

1. we have freedom and creativity to produce new ideas	2. we build robust and secure software	3. we enjoy our work	4. we do not upset or annoy others
5. our software contributes to the public good	6. our software influences end users	7. we credit work of others, not taking undue credit	8. we address environmental issues
9. our work is respected	10. we are allowed to take risks	11. we raise public awareness and understanding of software	12. our software is a commercial success
13. our physical safety and well-being protected	14. our software does not discriminate against others	15. we know and apply software industry rules	16. we make our own decisions
17. we produce high quality work	18. we respect and promote principles of industry	19. we are honest and trustworthy	

Group Discussion....

Differences between organisations and teams – solutions and values?

Organisation

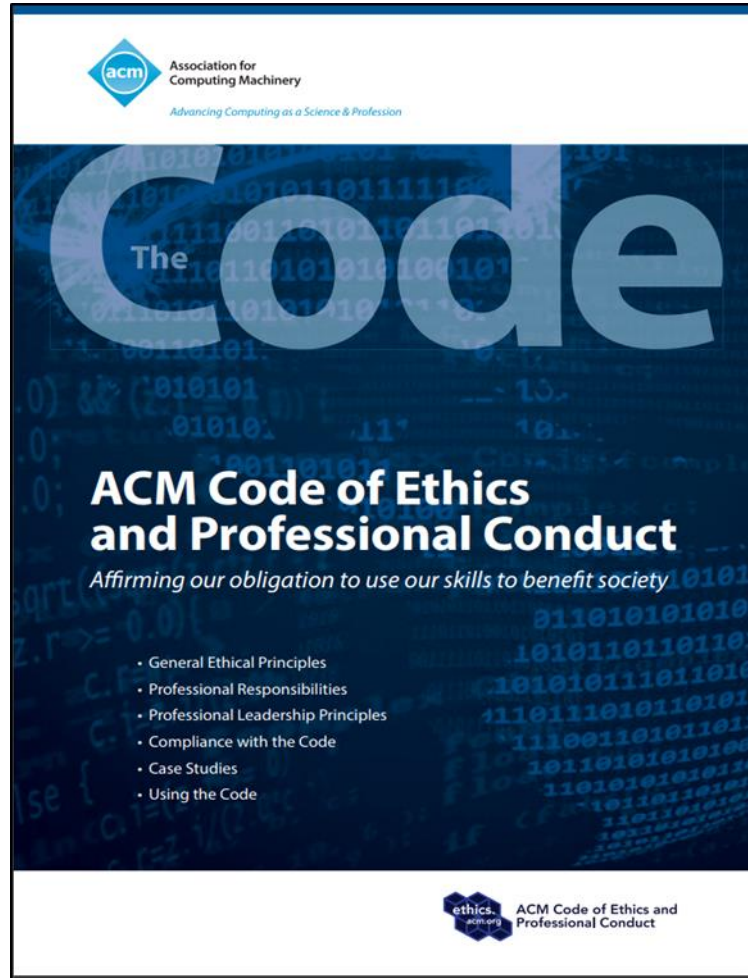
- A. Tesla
- B. Google
- C. Apple
- D. DuckDuckGo
- E. Not-for-profit
- F. Government backed

1. we have freedom and creativity to produce new ideas	2. we build robust and secure software	3. we enjoy our work	4. we do not upset or annoy others
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17. we produce high quality work	18. we respect and promote principles of industry	19. we are honest and trustworthy	

5 minute break....

The ACM Code of Ethics – public interest

....designed to inspire and guide ethical conduct



Software Engineers
shall...

....act consistently
with the public interest

...act in the best interests of their
client and employer consistent
with the public interest

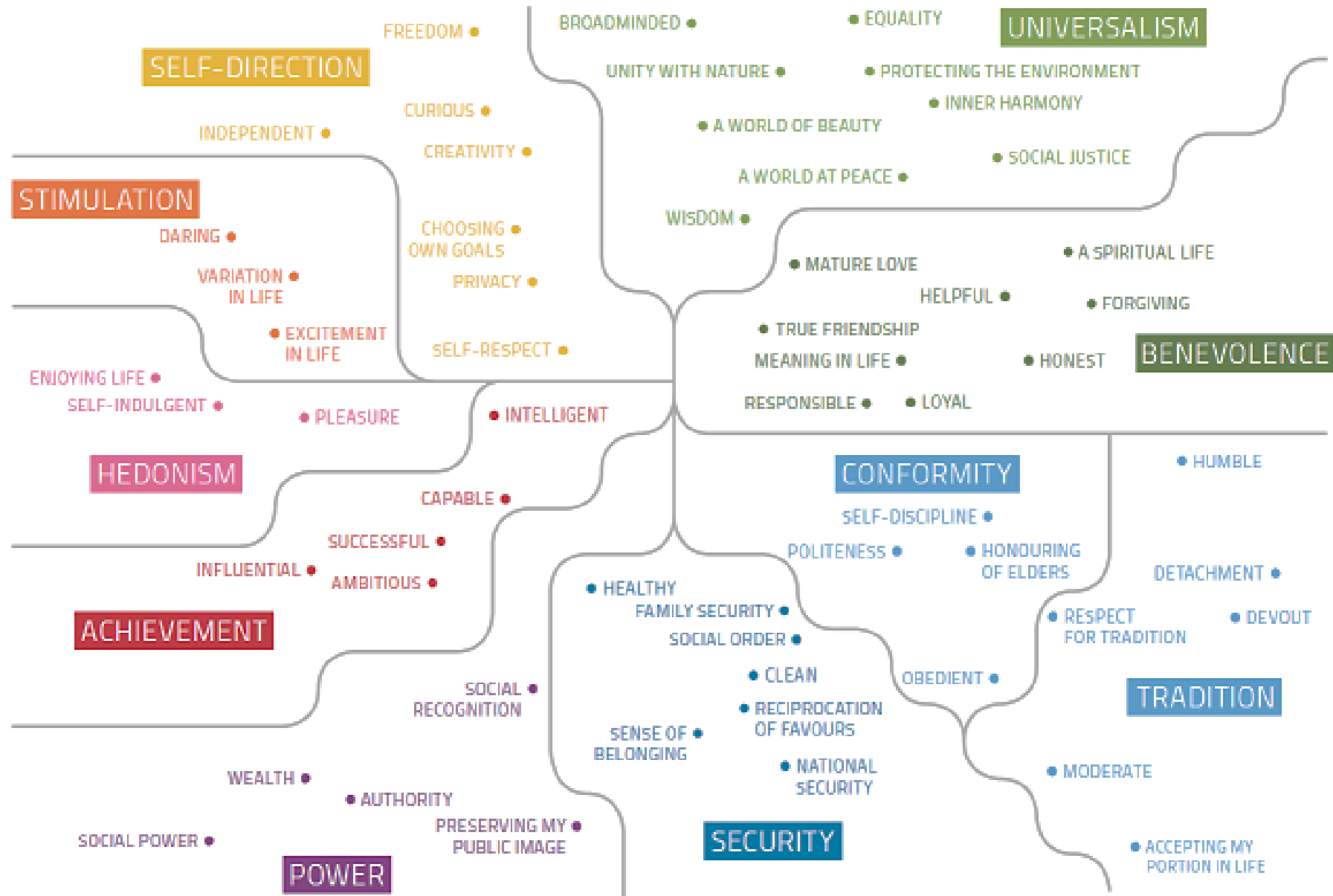
....advance the integrity and reputation
of the profession consistent
with the public interest

....temper all technical
judgments by
the need to support and
maintain human values

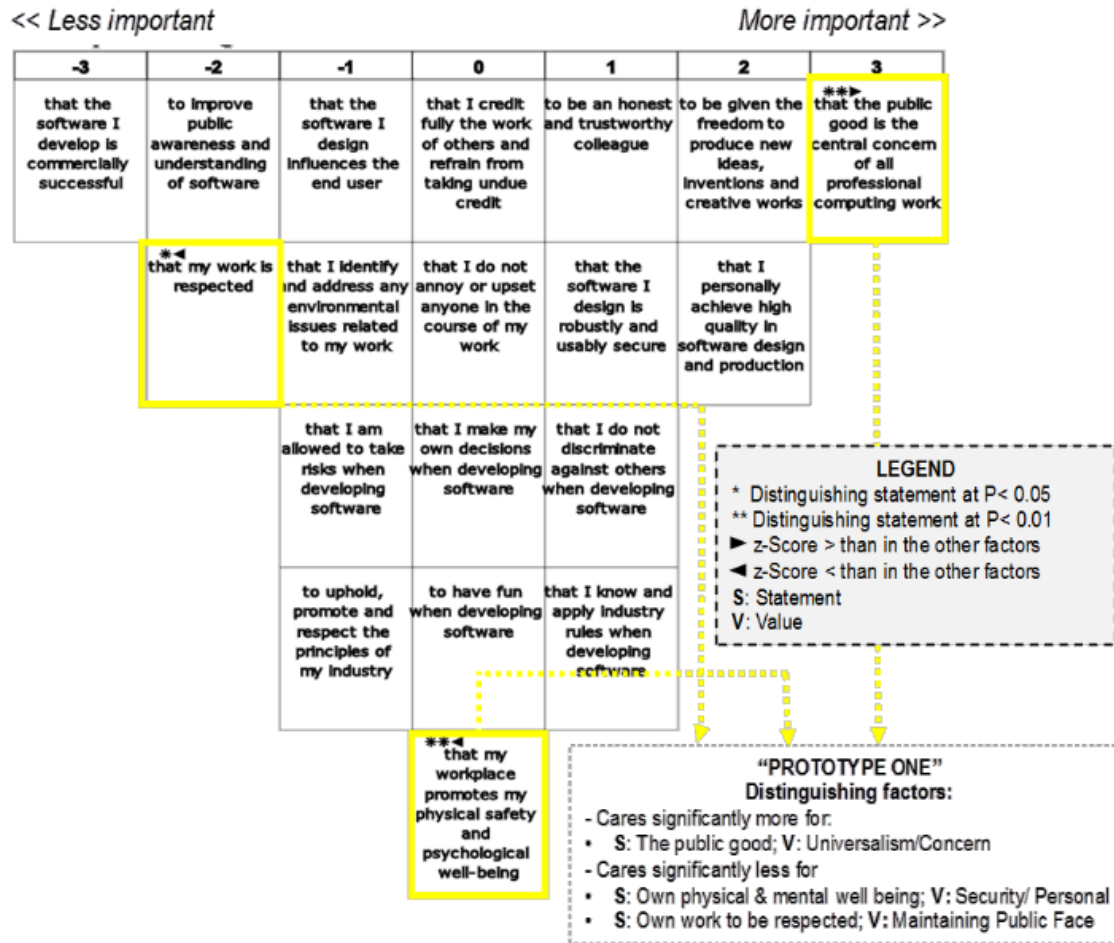
Statements (ACM code of ethics) and Human Values

N	Q-Sort statement (it is important to me...)	Schwartz value
1	to be given the freedom to produce new ideas, inventions and creative works	Self-direction: autonomy of thought
2	that the software I develop is robustly and usably secure	Security: societal
3	to enjoy the process of developing software	Hedonism
4	that I do not annoy or upset anyone in the course of my work	Conformity: interpersonal
5	that the public good is the central concern of all professional computing work	Universalism: concern
6	that the software I develop influences the end user	Power: over resources
7	that I credit fully the work of others and refrain from taking undue credit	Humility
8	that I identify and address any environmental issues in my work	Universalism: nature
9	that my work is respected	Face (i.e. public image)
10	that I am allowed to take risks when developing software	Stimulation
11	to improve public awareness and understanding of software	Benevolence: care
12	that the software I develop is commercially successful	Power: resources
13	that my workplace promotes my physical safety and psychological well-being	Security: personal
14	that I do not discriminate against others when developing software	Universalism: tolerance
15	that I know and apply industry rules when developing software	Conformity: rules
16	that I make own decisions when developing software	Self-direction: autonomy of action
17	that I personally achieve high quality in software design and production	Achievement
18	to uphold, promote and respect the principles of my industry	Tradition
19	to be an honest and trustworthy colleague	Benevolence: dependability

Schwartz - Universal Human Values, a research framework



Factor Analysis



The intrinsically driven, socially-concerned software engineer

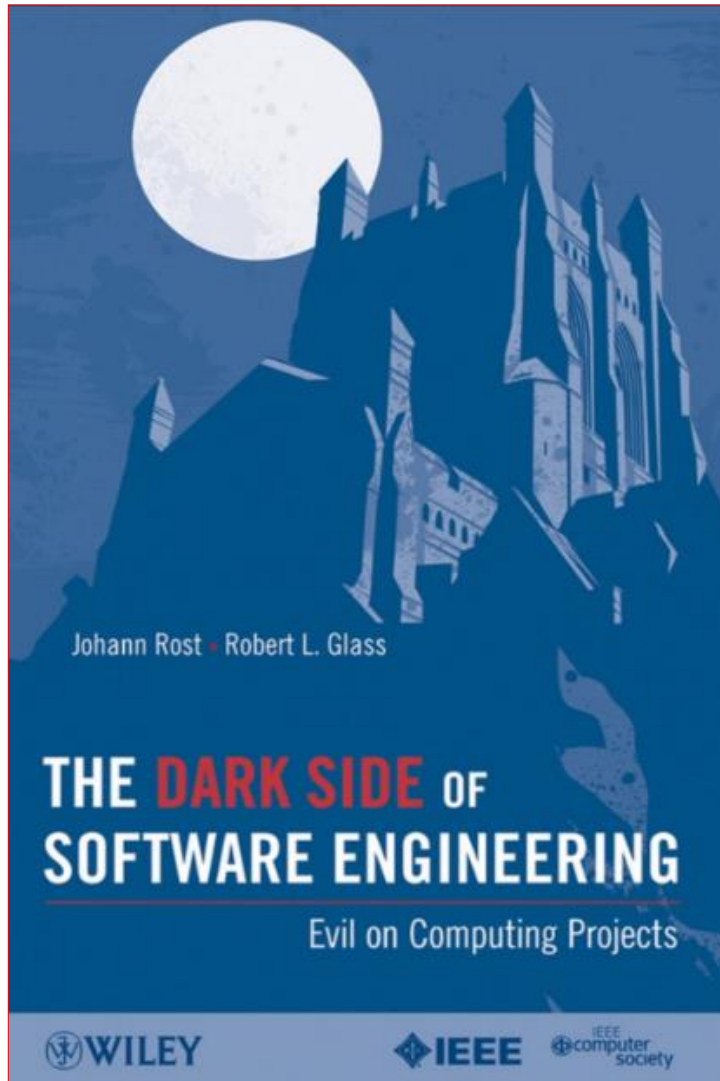
Participants who loaded on this factor rated doing “public good” as significantly more important than quality of their workplace and having their work respected.

There's no one type of software engineer...

We are carrying out exercises with software engineers in industry, research and the public sector and have found the following types...

- **Type 1:** Socially-concerned, intrinsically motivated
- **Type 2:** Autonomous, non-conforming risk-taker
- **Type 3:** Fun-loving, extrinsically motivated

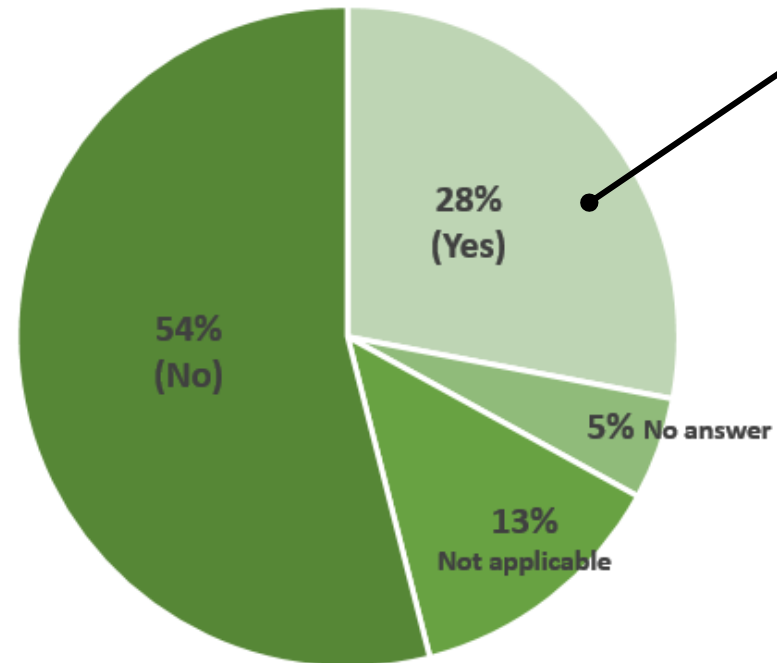
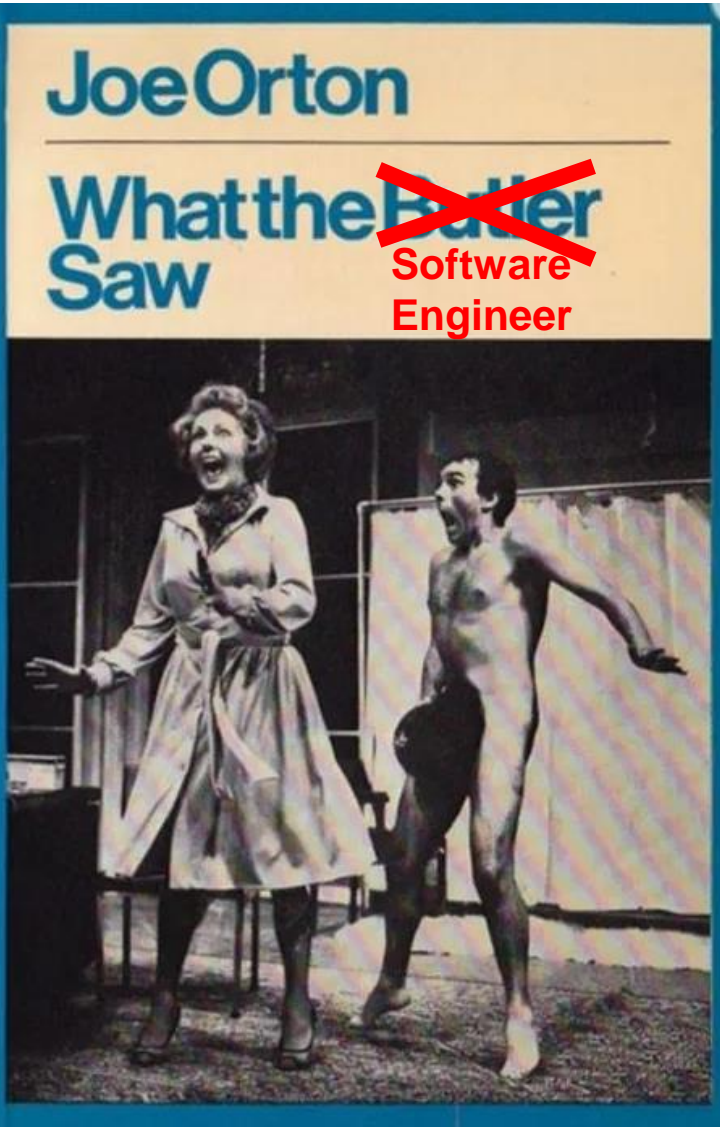
The dark side....



- What harmful activities might happen on SE projects and why?

In practice: Do IT Professionals see harmful situations?

Have you experienced a situation at work where *decisions* were made about the design, creation or marketing of technology that you felt could have negative consequences for people or society?



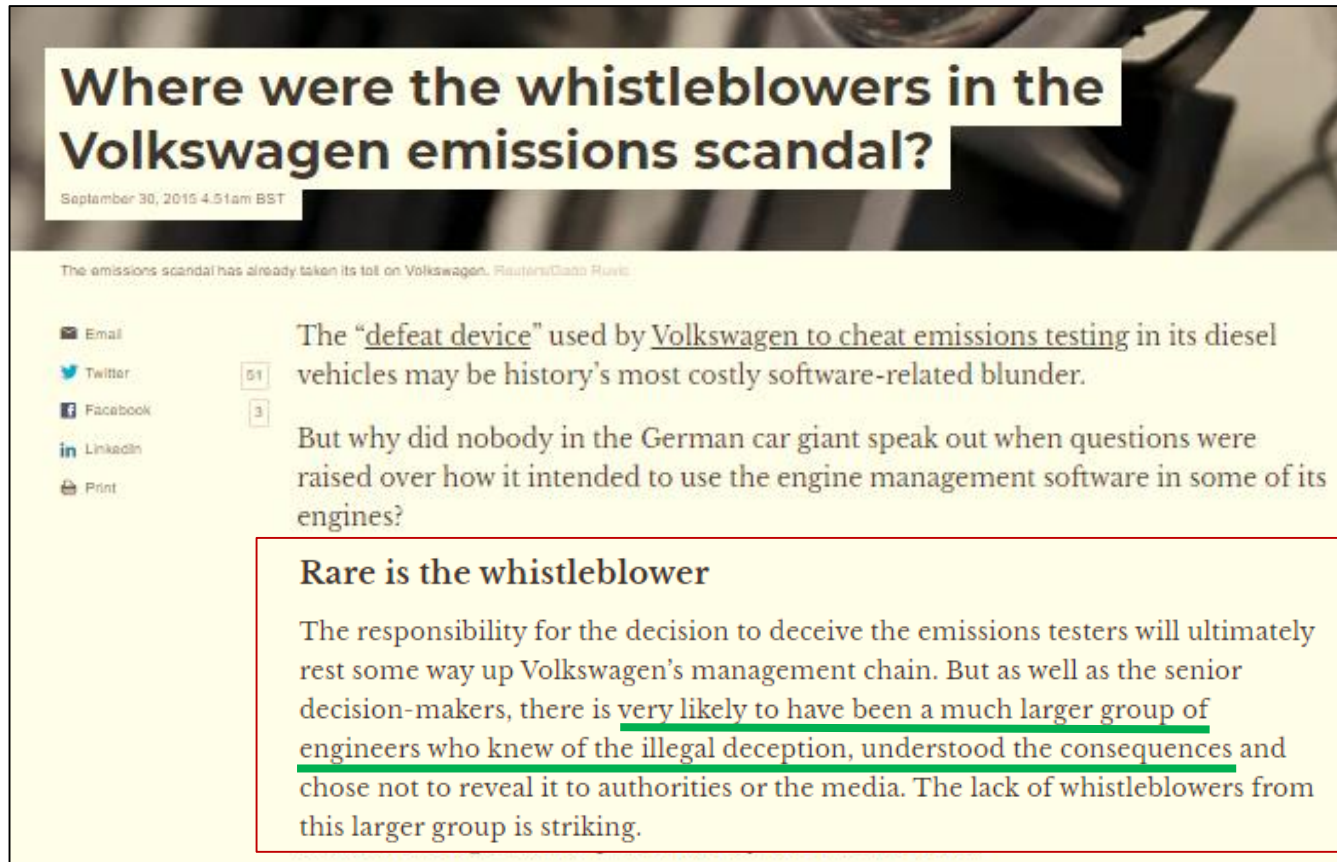
Consequences / harm:

- safety and security failures
- testing practice failures
- end user isolation or addiction
- job losses due to automation
- putting profit before people
- lack of knowledge and training
- lack of choice and control
- reliance on machines
- immoral practices
- misuse and abuse

Miller and Coldicott. People, Power and Technology: The tech workers' view (Ipsos MORI surveyed 1010 technology professionals, 2019)
385,000 programmers and software development professionals in the UK (UK Office for National Statistics, 2019)

Volkswagen – DieselGate (2015)

Volkswagen disclosed defeat devices and engine management software when not-for-profit researchers published results of emissions road tests. Volkswagen initially described issues as *inadvertent errors* and *rogue software engineers*.



Where were the whistleblowers in the Volkswagen emissions scandal?
September 30, 2015 4:51am BST

The emissions scandal has already taken its toll on Volkswagen. Reuters/Dado Ruvic

Email
Twitter
Facebook
LinkedIn
Print

51
3

The “defeat device” used by Volkswagen to cheat emissions testing in its diesel vehicles may be history’s most costly software-related blunder.

But why did nobody in the German car giant speak out when questions were raised over how it intended to use the engine management software in some of its engines?

Rare is the whistleblower

The responsibility for the decision to deceive the emissions testers will ultimately rest some way up Volkswagen’s management chain. But as well as the senior decision-makers, there is very likely to have been a much larger group of engineers who knew of the illegal deception, understood the consequences and chose not to reveal it to authorities or the media. The lack of whistleblowers from this larger group is striking.

Volkswagen – DieselGate

Root causes found:

- Pursuit of unfeasible objectives
- Cheat rather than solve a problem
- Suppression of open communications
- Intolerance of dissenting views and bad news
- Dishonesty in the chain of command

“People who report misconduct act courageously and responsibly”



The Volkswagen Group has reorganized its whistleblower system with effect from November 1. Its aim is to detect and stop serious violations of laws and internal rules of conduct. In this interview, Kurt Michels, Head of Group Compliance, explains how the new system works and how it protects whistleblowers, implicated parties and the Company.

Whistleblower system – that sounds a bit sinister. What's it all about?
Every company has an interest in detecting serious misconduct early, process the information gained and put a stop to the misconduct as soon as possible. Otherwise, major loss or damage and legal consequences may ensue for the company and its

VOLKSWAGEN
AKTIENGESELLSCHAFT

United Kingdom English OK

If you would like to send your **first** report, please click here:

Submit report

If you have already set up a postbox, you may login here:

Login

- **Why should I submit a report?**
- **What can I report?**
- **What is the process of submitting a report? How do I set up a postbox?**
- **How do I receive feedback and remain anonymous at the same time?**
- **I seek advice**
- **What does protection of the whistleblower and affected parties entail?**
- **Information about Cookies**
- **Information about data protection**

Protection. Fairness. Trust.

You want to report a violation. The following pages provide a technical area which only you and Volkswagen can access for submitting a report. You can submit your information to Volkswagen AG's Investigation Office in confidence. Your report will be handled by a team of specialist and experienced lawyers.

We respect your decision if you do not wish to provide your name. If this is the case, you can set up a special secured postbox in order to communicate with us. This is important because questions often arise which we will need your help to clarify, and which may prove decisive in how the report is handled.

You can report all violations that have been committed:

- by employees of the Volkswagen Group in connection with their work;
- by suppliers of the Volkswagen Group.

Such violations can be breaches of legislation or internal regulations as well as, in the case of suppliers, a violation of the Code of Conduct for Business Partners.

In case of violations in the context of data protection regulations, we would like to ask you to contact the Data-Breach-Hotline (05361-9-28479) of Volkswagen AG.

Volkswagen AG is committed to protecting whistleblowers. We do not tolerate any bullying or discrimination against whistleblowers. The suspected person is presumed innocent until convicted of a violation.

Please note that we cannot handle any questions you may have about customer service in relation to your vehicle. Please direct any such queries to Customer Care (customercare@volkswagen.de).

★ Bookmark this page

Volkswagen Aktiengesellschaft • Compliance Central Investigation Office
Brieffach 1717 • 38436 Wolfsburg • Germany

Legal notice

VW engineer jailed for emissions scandal

25 August 2017

f b t e Share

Diesel emissions scandal



AFP/GETTY

Diesel Volkswagen and Audi vehicles that VW bought back from consumers sit in Pontiac, Michigan.

US District Court Judge Sean Cox:

Unless individual actors are also punished, future corporate employees and contractors may be tempted to justify their behaviour as just 'doing their jobs' or 'following orders'.

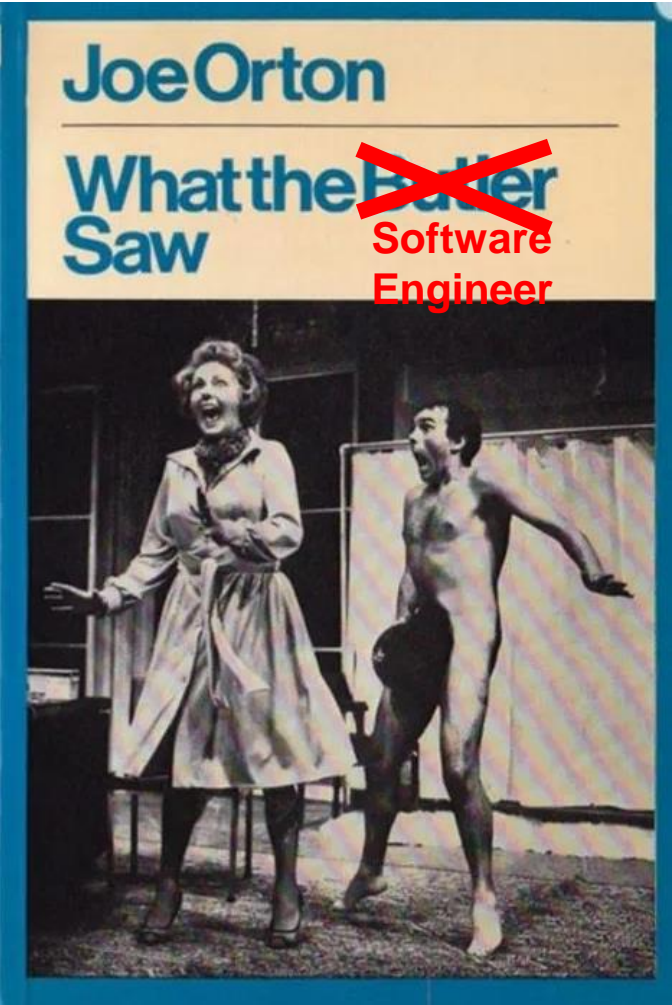
Q1. Did you know a VW engineer was jailed?

Q2. Do you think they should have been jailed?

<https://www.bbc.co.uk/news/business-41053740>

What actions do IT Professionals take?

[of the 287 people that indicated they had seen potentially harmful situations]



90%
took
some action



Miller and Coldicott. People, Power and Technology: The tech workers' view (Ipsos MORI surveyed 1010 technology professionals, 2019)

Issues serious enough to leave or report outside of company

Joe Orton

What the Butler
Saw

~~Software
Engineer~~

Q3: Have you observed a harmful technology situation?

- harmful software, IT systems or services
- harmful processes or SE practices (in software lifecycle)
- harm to codebase, team, organisation, end users or others

YES

NO

What did you do?

My research: Capturing whistleblowing stories with SE experts

Software
Engineer

The ~~Tiger~~ Who
Came
to Tea



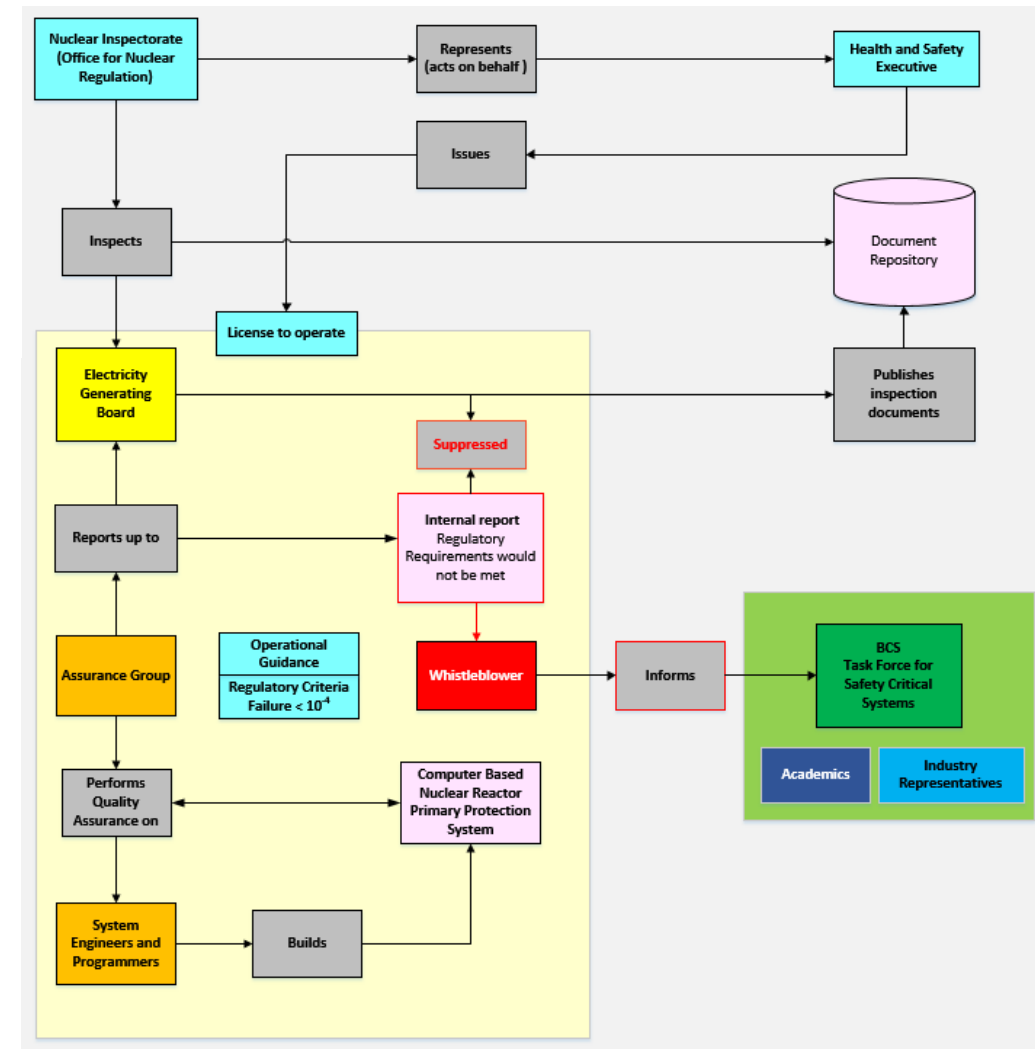
Judith Kerr

Reflect on

- Products, systems and services
- Codebase and SE practices / processes
- Individuals, SE teams and organisations
- End users and wider society
- Facts, feelings and decisions

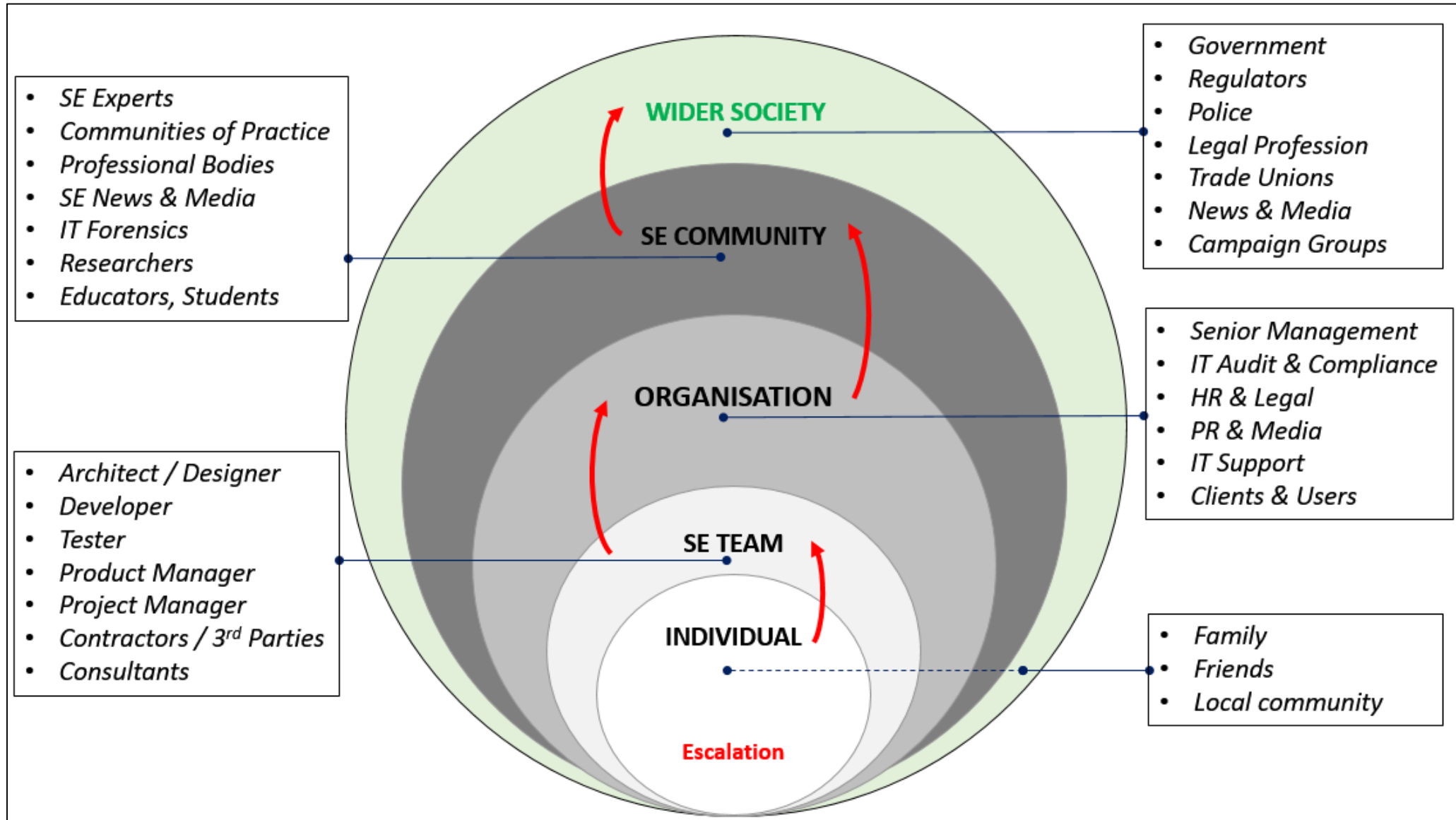
Participants report

- Unintended consequences
- Key functionality missing or defective
- Incorrect calculations
- Known security vulnerabilities
- Poor coding standards
- Poor incident response
- Falsifying test results
- IT project failures and overrun
- People keeping quiet (mum effect)
- Management not listening (deaf effect)



Story modelled from interview transcript

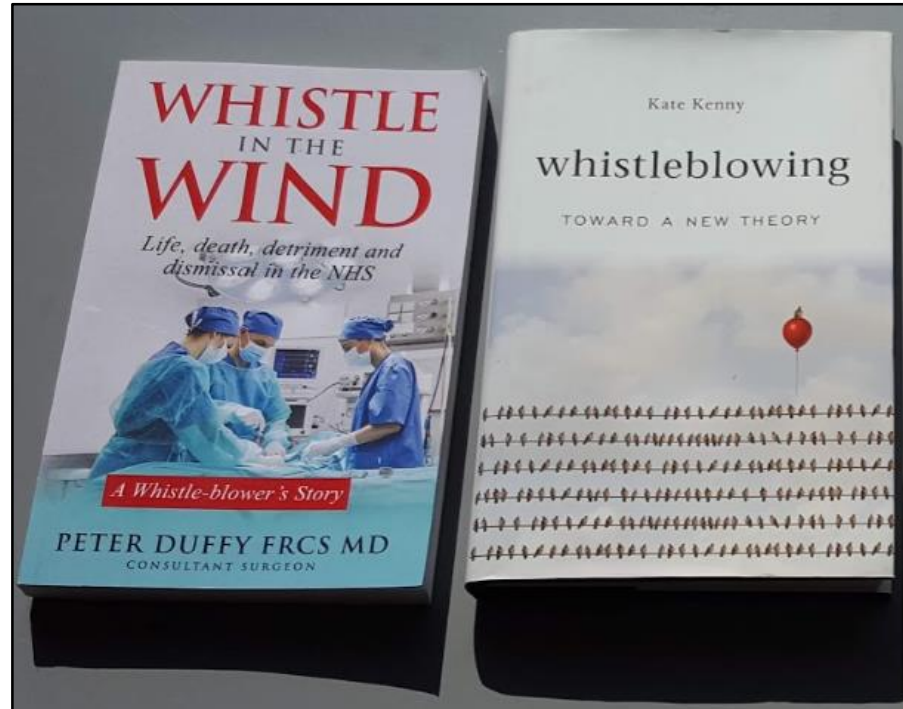
Specifically I look at interaction and escalations



Whistleblowers – heroes or villains?

- In theory (survey) - 81% of adults supportive
- In practice - whistleblowers victimised and ostracised, even when vindicated
- Employment tribunals and court cases take years to resolve

(Vandekerckhove. 2012.UK public attitudes to whistleblowing. Technical Report. University of Greenwich, UK)



Post Office (Fujitsu) Horizon IT system....

2019

Bankruptcy, prosecution and disrupted livelihoods - Postmasters tell their story


Rebecca Thomson reports on claims that the Post Office has failed to recognise a potential IT problem.



By Rebecca Thomson, Computer Weekly

Published: 11 May 2009 1:01

2009



Police open criminal investigation into potential perjury by Fujitsu staff in Post Office IT trials

Current and former Fujitsu staff could face prosecution for giving false evidence in the trials of subpostmasters accused of theft and false accounting

2021

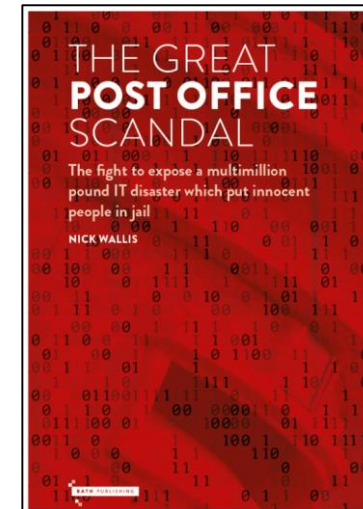
Thursday, 14 March 2019

Horizon Trial: day 4 - They Could, And They Did Change Branch Transaction Data

Richard Roll, the Fujitsu whistleblower, spent just shy of a full day in the witness box today after giving evidence for most of yesterday afternoon, and boy it was gruelling.

At one point I thought he'd developed Stockholm syndrome - agreeing with everything the Post Office QC said in the hope someone would make it stop.

Mr Roll came forward after seeing the BBC Inside Out South investigation I fronted in 2011. He did so for exactly the right reasons. He felt from his time working at Fujitsu Horizon support that some Subpostmasters might well have been held responsible for losses which weren't their fault. As someone who was very close to the action, he felt it was his moral duty to speak up, especially when he saw the people in the programme who claimed to have been affected.



Extraordinary time and cover up

Whistleblower protection – it's complicated

Protection depends on:

- Country or region you work in
- Who you work for (e.g. government, military, public or private)
- Type of employment contract you have (permanent, temp, contract)
- What you are disclosing


In the UK, protection for whistleblowers is in the **Public Interest Disclosure Act 1998**. If a worker makes a protected disclosure compensation can be claimed for any victimisation following such disclosures (through **Employment Tribunals**). These can take years to resolve.

- **policy** (what should be reported)
- **procedures** (how to take action, to collect and share evidence, safe channels)
- **advice, support, legal protection** (for individuals, teams and organisations)

Check organisational policies and procedures

Professional Bodies and Charities

There are professional bodies, trade unions and whistleblower charities for advice and support. BCS has legal advice service as part of membership.



My
BCS


Search MyBCS

Career development Knowledge and resources Communities and events Get involved

Legal advice

As a BCS member you can access legal advice whenever you need it, for both personal and professional matters.

Legal helpline: +44 (0)1275 370 041






UNITED TECH & ALLIED WORKERS

United Tech and Allied Workers is a branch of the Communication Workers Union which seeks to represent and fight for workers interests in the tech industry.

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Membership & Registration Career & Learning Intelligence & Research Events Get Involved Impact & Society

Membership & Registration > Professional values > Resources full > Whistleblowing: resources

Whistleblowing: resources

Further resources regarding whistleblowing.

We have gathered together some suggested web links and introductory texts for those who would like to explore whistleblowing further.

Whistleblowing - external links

Professional values

Resources full


Whistleblowing: guidance for employers

Whistleblowing: guidance for members

Whistleblowing: resources

HSE PDF document on the personal protective equipment at work regulations 1992

HSE Noise at Work guidance leaflet



Free, confidential whistleblowing advice
Get In Touch

DONATE


Advice for individuals Business Support Law & Policy News About us

Protect aims to make whistleblowing work for individuals, organisations and society.

Every year, we support around 3,000 whistleblowers who call our Advice Line. In addition, we work with organisations on improving their speak up arrangements and campaign for better legal protection of whistleblowers.

View our case studies

Our impact in 2020



Fortunately, my claims were taken seriously and investigated
Osita Mba, former HMRC solicitor

Seek expert advice



Thank you for
listening and
taking part...



L.Hunt1@Lancaster.ac.uk

Google & Project Maven Walk Out



<https://static01.nyt.com/files/2018/technology/googleletter.pdf>

Dear Sundar,

We believe that Google should not be in the business of war. Therefore we ask that Project Maven be cancelled, and that Google draft, publicize and enforce a clear policy stating that neither Google nor its contractors will ever build warfare technology.

Google is implementing Project Maven, a customized AI surveillance engine that uses "Wide Area Motion Imagery" data captured by US Government drones to detect vehicles and other objects, track their motions, and provide results to the Department of Defense.

Recently, Googlers voiced concerns about Maven internally. Diane Greene responded, assuring them that the technology will not "operate or fly drones" and "will not be used to launch weapons." While this eliminates a narrow set of direct applications, the technology is being built for the military, and once it's delivered it could easily be used to assist in these tasks.

This plan will irreparably damage Google's brand and its ability to compete for talent. Amid growing fears of biased and weaponized AI, Google is already struggling to keep the public's trust. By entering into this contract, Google will join the ranks of companies like Palantir, Raytheon, and General Dynamics. The argument that other firms, like Microsoft and Amazon, are also participating doesn't make this any less risky for Google. Google's unique history, its motto *Don't Be Evil*, and its direct reach into the lives of billions of users set it apart.

We cannot outsource the moral responsibility of our technologies to third parties. Google's stated values make this clear: *Every one of our users is trusting us. Never jeopardize that. Ever.* This contract puts Google's reputation at risk and stands in direct opposition to our core values. Building this technology to assist the US Government in military surveillance – and potentially lethal outcomes – is not acceptable.

Recognizing Google's moral and ethical responsibility, and the threat to Google's reputation, we request that you:

1. Cancel this project immediately
2. Draft, publicize, and enforce a clear policy stating that neither Google nor its contractors will ever build warfare technology

DuckDuckGO: “tracking is *creepy*”

The search engine & the value of privacy

www.wired.com/2011/01/duckduckgo-google-privacy/

