



Ethics, technology, and unintended consequences

Kate Carruthers

Version 1.0
Aug 2018



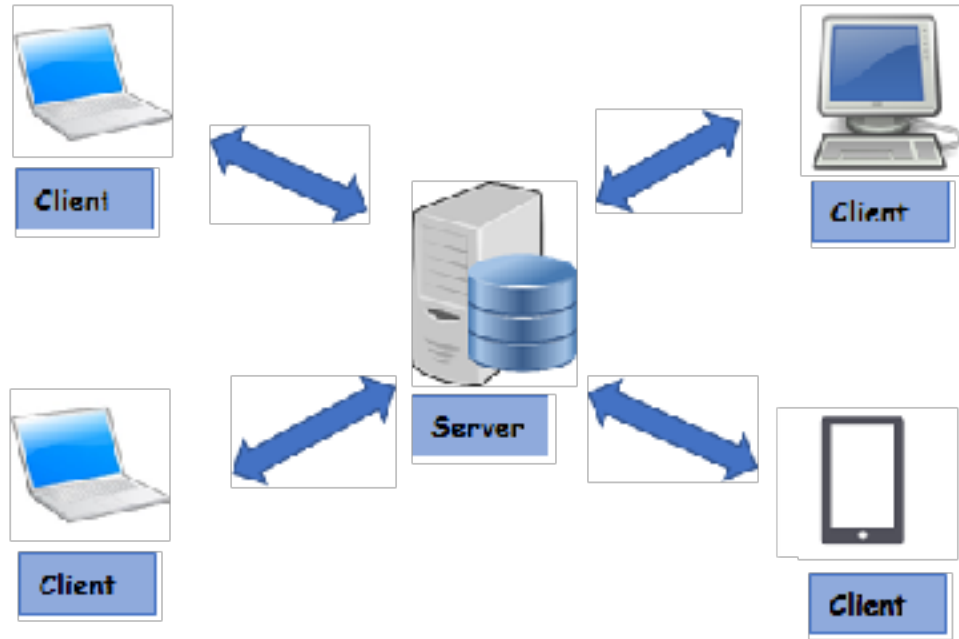
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Australians know all about unintended consequences

The old world



Source: <http://toolsqa.com/client-server/client-server-architecture-and-http-protocol/>

New world



RabbitMQ



docker



Amazon EC2



redis



 serverless



AWS Lambda



AWS SNS



Amazon RDS



Terraform



Amazon RDS



AWS IoT

Source: <https://read.acloud.guru/our-serverless-journey-part-2-908d76d03716>



The world's most valuable resource is no longer oil, but data

David Parkins

Source: <https://www.economist.com/news/leaders/21721656-data-economy-demands-new-approach-antitrust-rules-worlds-most-valuable-resource>

Aug 2018

Kate Carruthers | UNSW

5 Propositions about data

1. Data is not neutral
2. There is no such thing as raw data
3. The signal to noise ratio has changed
4. Data is not inherently smart
5. The more data we have the less anonymity

2 Propositions about tech ethics

1. Technology has no ethics. People demonstrate ethics.
2. Technology inherits the biases of its makers - therefore we need diversity and formal mechanisms to reduce bias.



Casey Newton ✓

@CaseyNewton

Google Maps now shows you which NYC subway entrances and exits to take and I would like to formally nominate the team for the Nobel Peace Prize

9:57 am · 25 Apr 2018


at 5:46 PM
at 5:48 PM

Follow

Fulton St

Enter via Broadway & John St at SE corner


4 5

 **Maintenance**

2 stops (9 min)

14 Street - Union Square Station

Exit via 4th Ave & 14th St at NE corner

 Walk 0.4 mi (7 min)

MAP



What can I help you with?

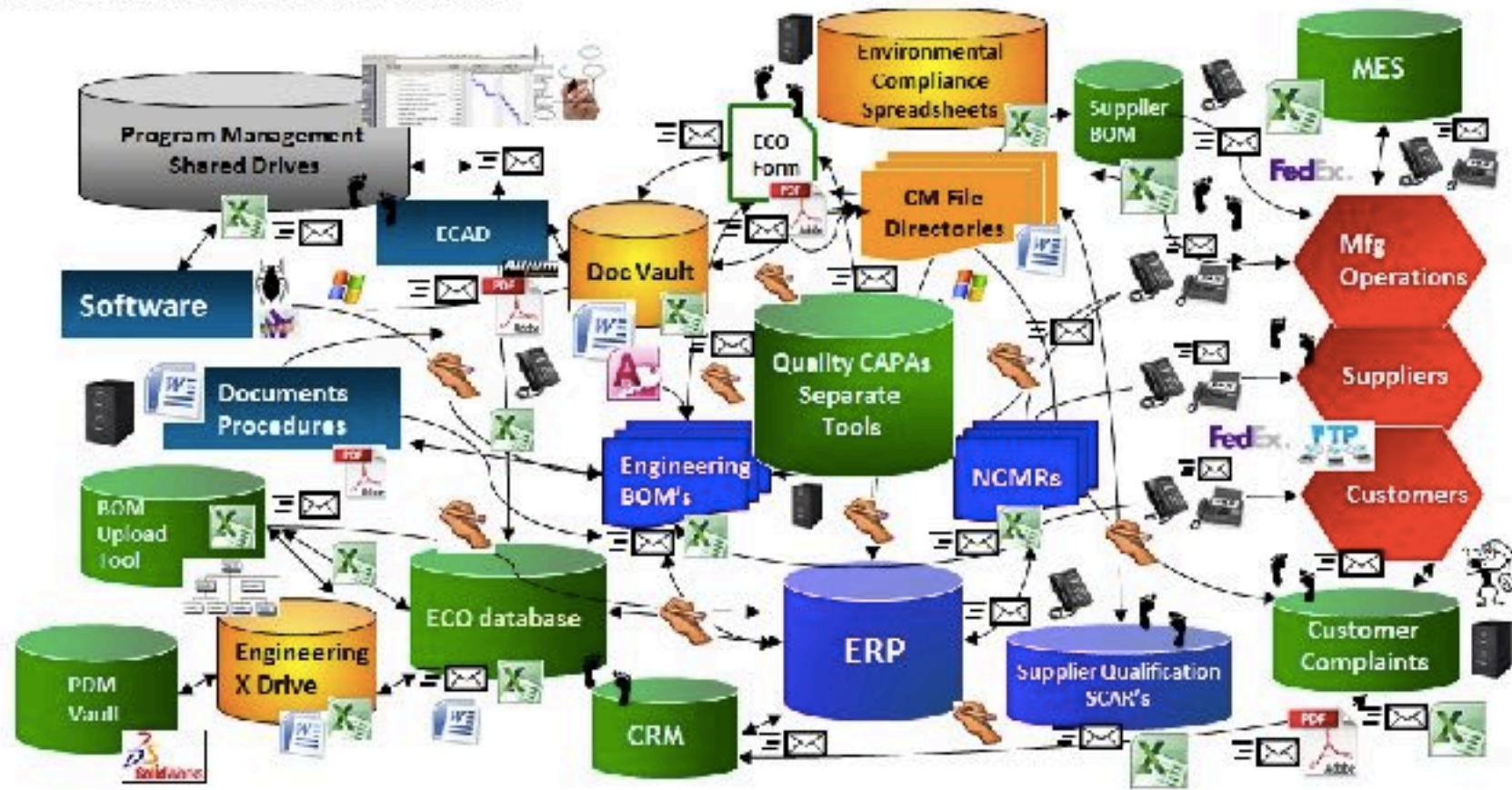
Hi, I'm Cortana.



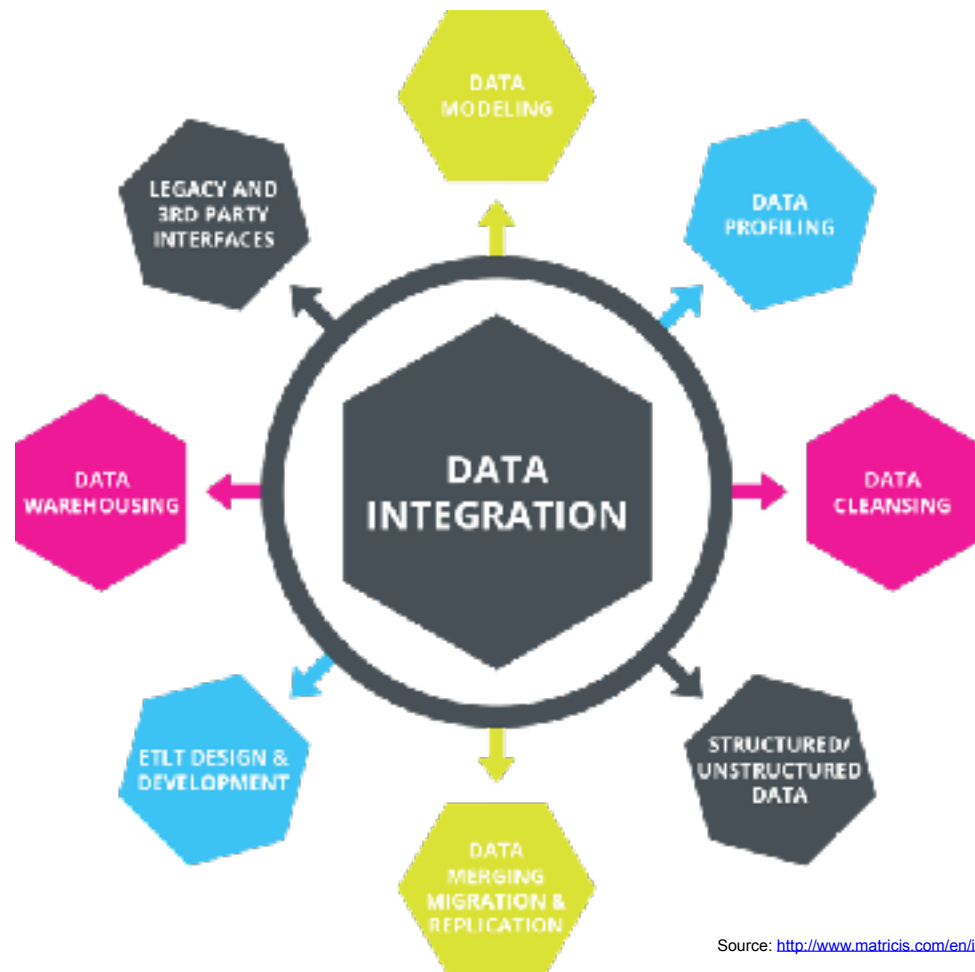
Health.
An entirely new way to use your
health and fitness information.



Disconnected Silos



Source: <http://beyondplm.com/2014/07/22/plm-implementations-nuts-and-bolts-of-data-silos/>



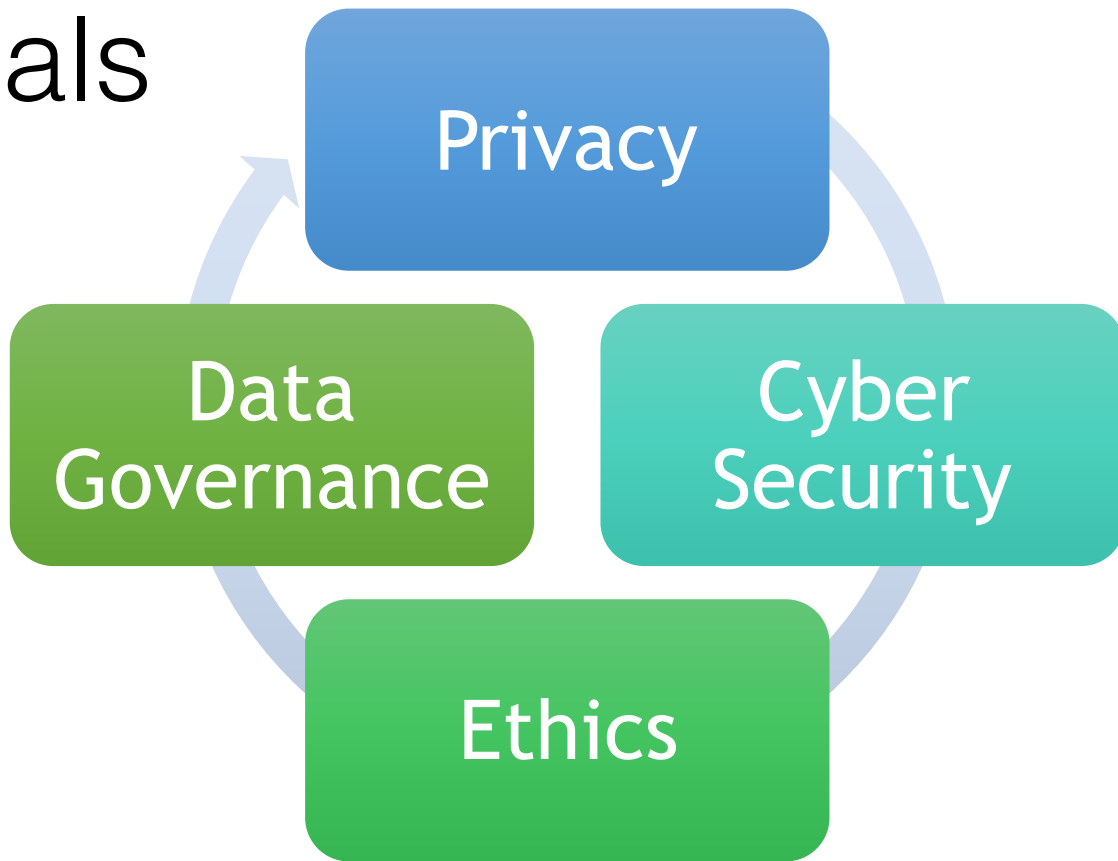
Source: <http://www.matricis.com/en/integration-solutions/data-integration/>

Areas of focus

- Ethics of **data** - how we generate, record & share data
- Ethics of **algorithms** - how we interpret data via artificial intelligence, machine learning and robots
- Ethics of **practices** - devising responsible innovation and professional codes to guide this emerging science

What is data ethics?
Isabelino F. Wong, Mariana L. da Costa
Phil. Trans. R. Soc. A 2016 374 20160360; DOI: 10.1098/rsta.2016.0360. Published 14 November 2016

The essentials



Australian Red Cross launches investigation after huge data “cock-up”

Data breach exposes more than 1.28 million records.



Leon Spencer (ARN)

28 October, 2015 14:25



0 Comments



3rd party
risk

Source: <https://www.arnnet.com.au/article/609309/australian-red-cross-launches-investigation-after-massive-data-cock-up/>

Australia's 2016 Census had 'significant and obvious oversights,' report finds

PRIME Minister Malcolm Turnbull says IBM was overwhelmingly responsible for this year's census debacle — and the tech giant has paid big time.

Jennifer Dusley Nisholsen and Claire Biskers

News Corp Australia Network NOVEMBER 25, 2016 8:58AM



Source: <http://www.news.com.au/technology/online/australias-2016-census-had-significant-and-obvious-oversights-report-finds/news-story/6edcf8f897b2361965bd72683ee6e6e>

Sweden Accidentally Leaks Personal Details of Nearly All Citizens

Monday, July 24, 2017 Swati Khurdelwal

G+ Google+ Facebook Twitter LinkedIn Email + More 11.5K

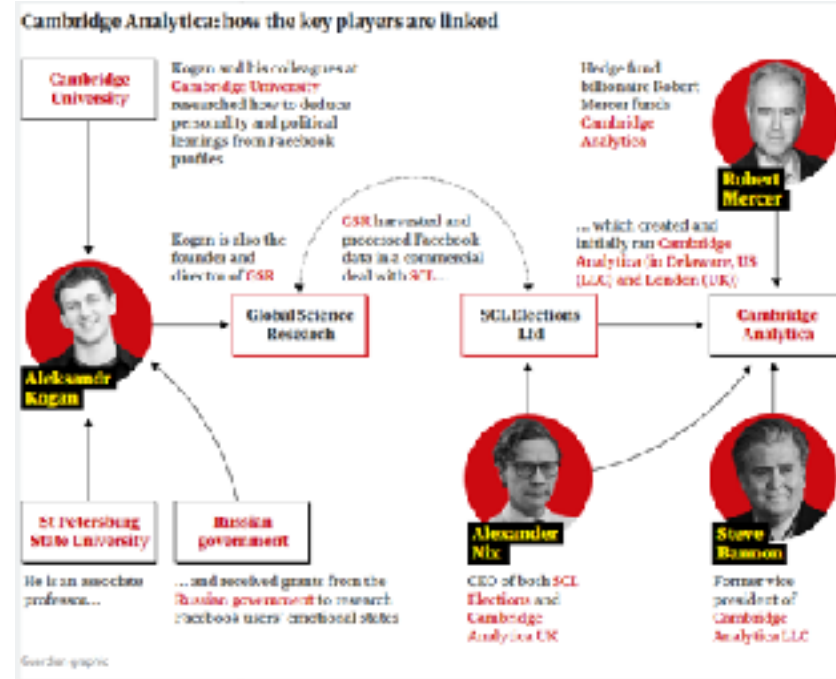


Poor
data
practices
s

Another day, Another data breach!

<http://thehackernews.com/2017/07/sweden-data-breach.html>

“Revealed: 50 million Facebook profiles harvested for Cambridge Analytica in major data breach”



<https://www.theguardian.com/news/2018/mar/17/cambridge-analytica-facebook-influence-us-election>

Twitter taught Microsoft's AI chatbot to be a racist a ***** in less than a day

by James Vincent | @jvincent Mar 24, 2016, 6:13am EDT



SHARE



TWEET



LINKEDIN

<https://www.theverge.com/2016/3/24/11297050/tay-microsoft-chatbot-racist>





Source: <https://www.propublica.org/article/machine-bias-risk-assessments-in-criminal-sentencing>

Traditional approaches

- Privacy by design
- Security by design
- Codes of ethics
- Guidelines

House of Lords Artificial Intelligence Committee 2017

The Lords' report proposes five main principles for an AI code:

1. Artificial intelligence should be developed for the **common good and benefit of humanity**
2. Artificial intelligence should operate on **principles of intelligibility and fairness**
3. Artificial intelligence **should not be used to diminish the data rights or privacy** of individuals, families or communities
4. All **citizens have the right to be educated** to enable them to flourish mentally, emotionally and economically alongside artificial intelligence
5. The autonomous power to hurt, destroy or deceive human beings **should never be vested in artificial intelligence**








Source: Report of Session 2017-19 - published 16 April 2017 - HL Paper 100
<https://publications.parliament.uk/pa/ld201719/ldselect/ldai/100/10002.htm>

Ethics Canvas

Project Title:

Date:

Ethics Canvas v1.8 - ethicscanvas.org © ADAPT Centre & Trinity College Dublin & Dublin City University, 2017.

<p>Individuals affected</p> <p>Identify the types or categories of individuals affected by the product or service, such as men/women, user/non-user, age-category, etc.</p> <p> 1</p>	<p>Behaviour</p> <p>Discuss problematic changes to individual behaviour that may be prompted by the application e.g. differences in habits, time-schedules, choice of activities, people behaving more individualistic or collectivist, people behaving more or less materialistic.</p> <p> 3</p>	<p>What can we do?</p> <p>Select the four most important ethical impacts you discussed. Identify ways of solving these impacts by changing your project's product/service design, organisation. Or by providing recommendations for its use or spelling out more clearly to users the values driving the design.</p> <p> 4</p>	<p>Worldviews</p> <p>Discuss how the general perception of somebody's role in society can be affected by the project.</p> <p> 5</p>	<p>Groups affected</p> <p>Identify the collectives or communities, e.g. groups or organisations, that can be affected by your product or service, such as environmental and religious groups, unions, professional bodies, competing companies and government agencies, considering any interest they might have in the effects of the product or service.</p> <p> 2</p>
<p>Product or Service Failure</p> <p>Discuss the potential negative impact of your product or service failing to operate as intended, e.g. technical or human error, financial failure/ receivership/acquisition, security breach, data loss, etc.</p> <p> 7</p>		<p>Problematic Use of Resources</p> <p>Discuss possible negative impacts of the consumption of resources of your project, e.g. climate impacts, privacy impacts, employment impacts etc.</p> <p> 8</p>		

Thank you

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