



Data@Large: The Journey of Privacy from Compliance to Governance

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1.2ZB THE WORLD'S DATA IN 2010



A zettabyte is equivalent to about 250 billion DVDs.

7.9ZB THE WORLD'S DATA IN 2015

A 406% increase!

THE WORLD'S DATA IN 2020

40ZB

40 BILLION

Connected devices by 2020.

\$451 B

World-wide mobile phone market by 2018.

\$125 B

Predicted "Big Data" spending in 2015 alone.

40ZB 1.5%

World-wide data in existence by 2020.

of the total 40ZB is "target-rich" data.

53%

of "target-rich" data is general IT data including metadata in 2020.

60%

of digital data will be accounted for by emerging markets by 2020. Today, they account for only 40%.



24x

Amount China's data will grow between 2012 and 2020.

73%

Number of organizations that have or will be making big data investments within the next 2 years.



"Statistical analysis and data mining" top skill that got people hired in 2014.



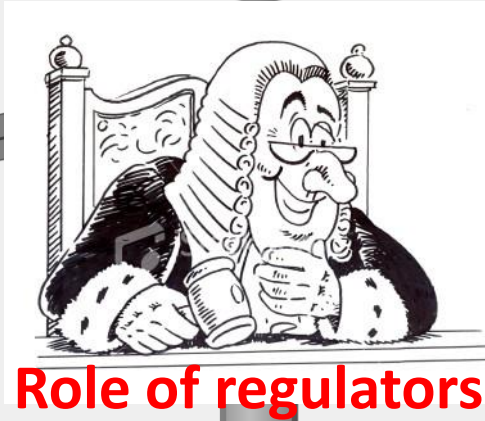
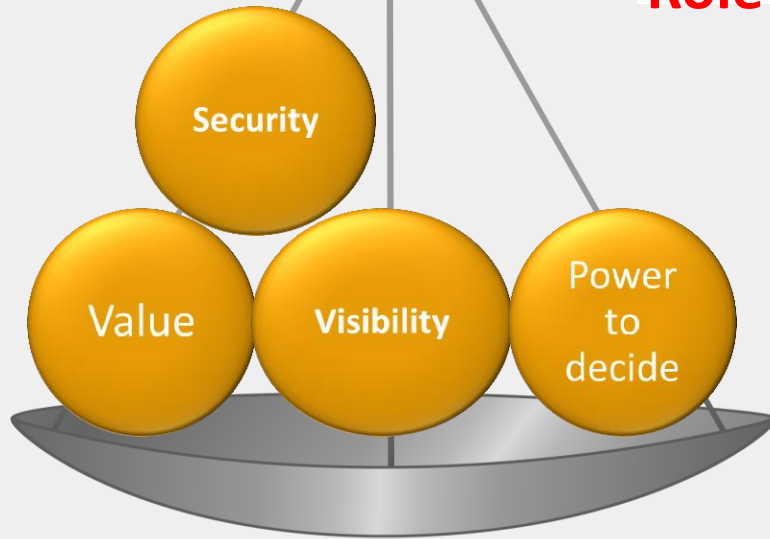
Shortage of 140k-190k people with "deep analytical skills" by 2018.

DATA SCIENTISTS

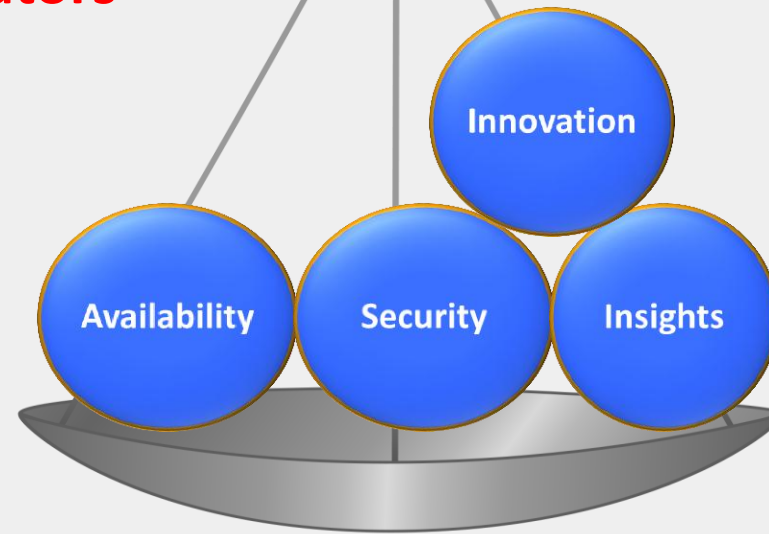


The Market of Data: An Unstable Balance?

Consumers seek:

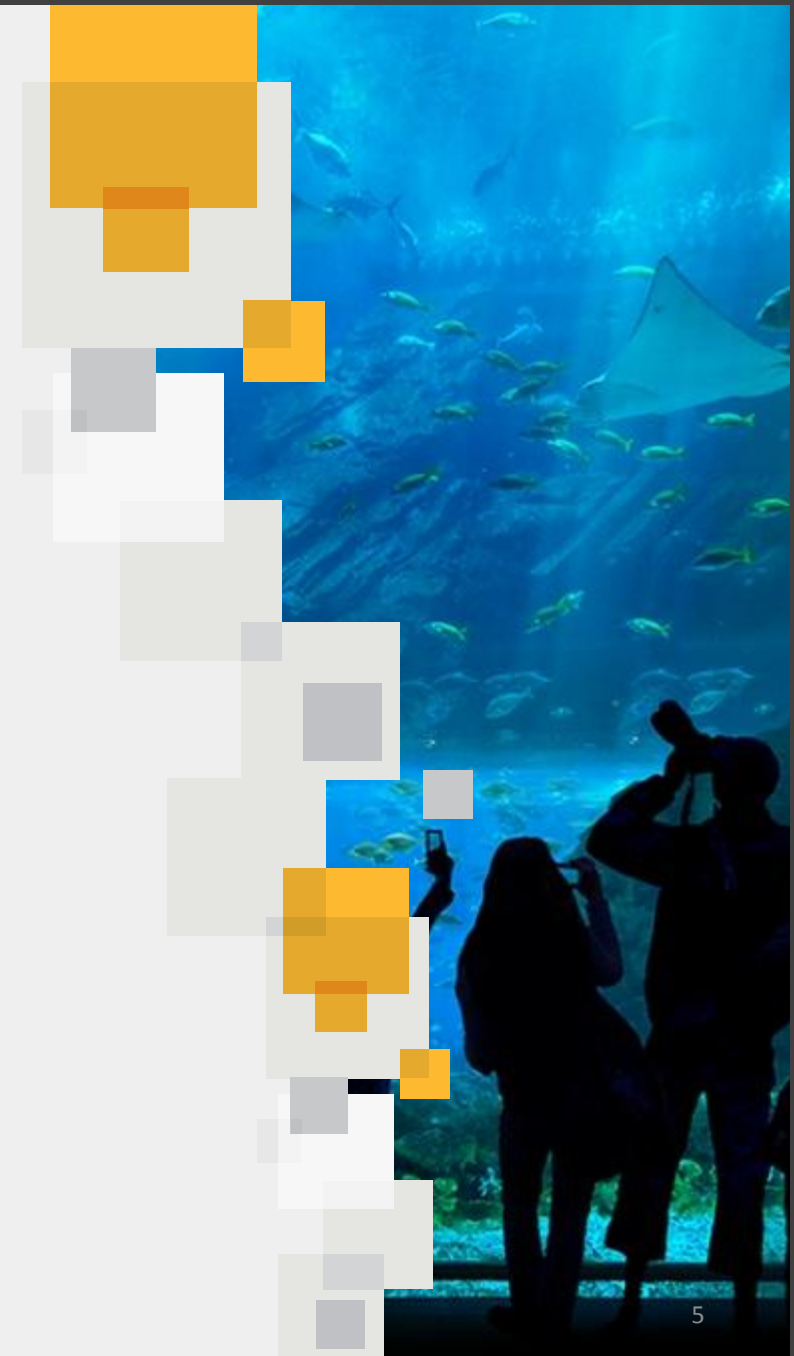


Businesses need:

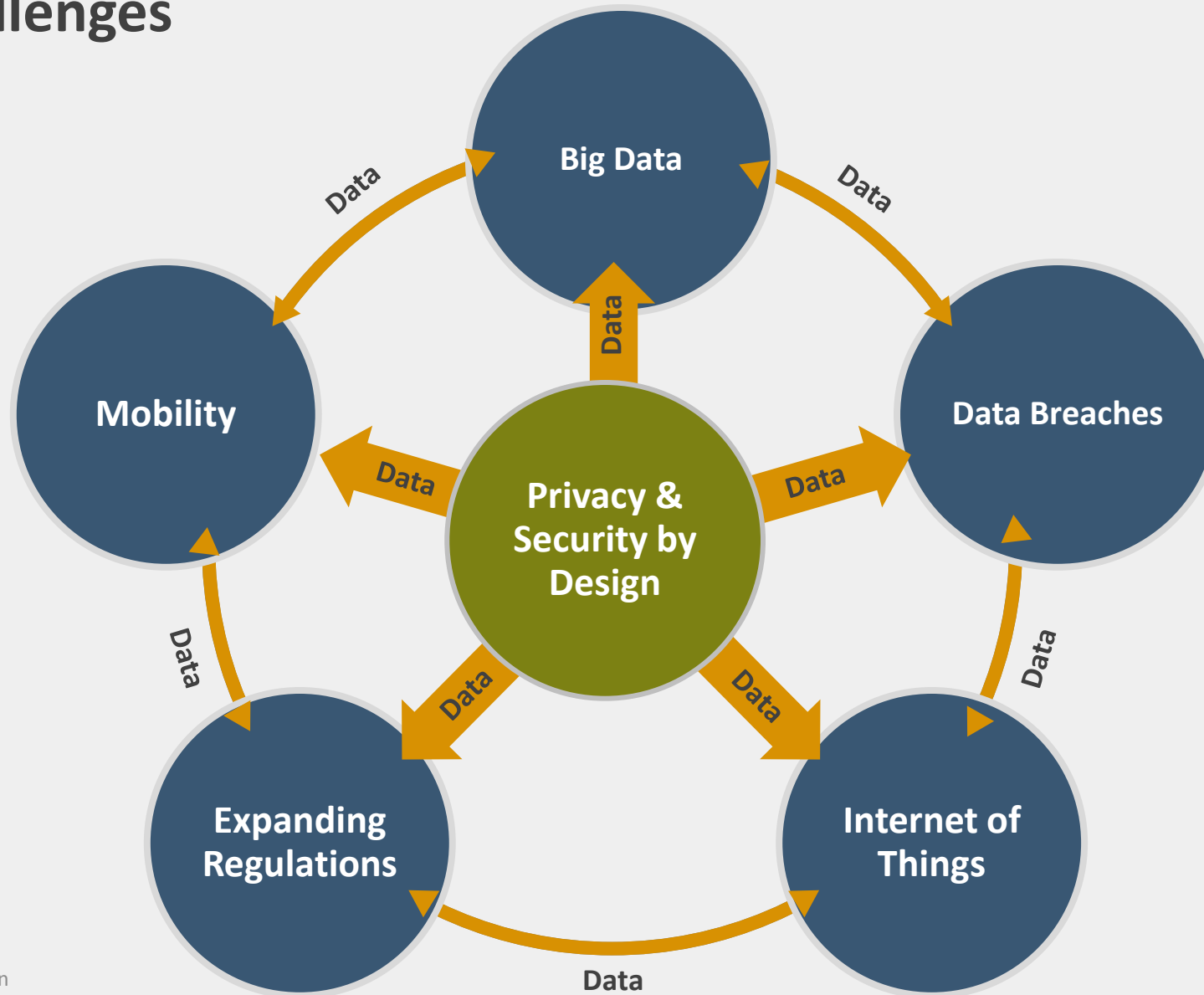




Emerging Challenges

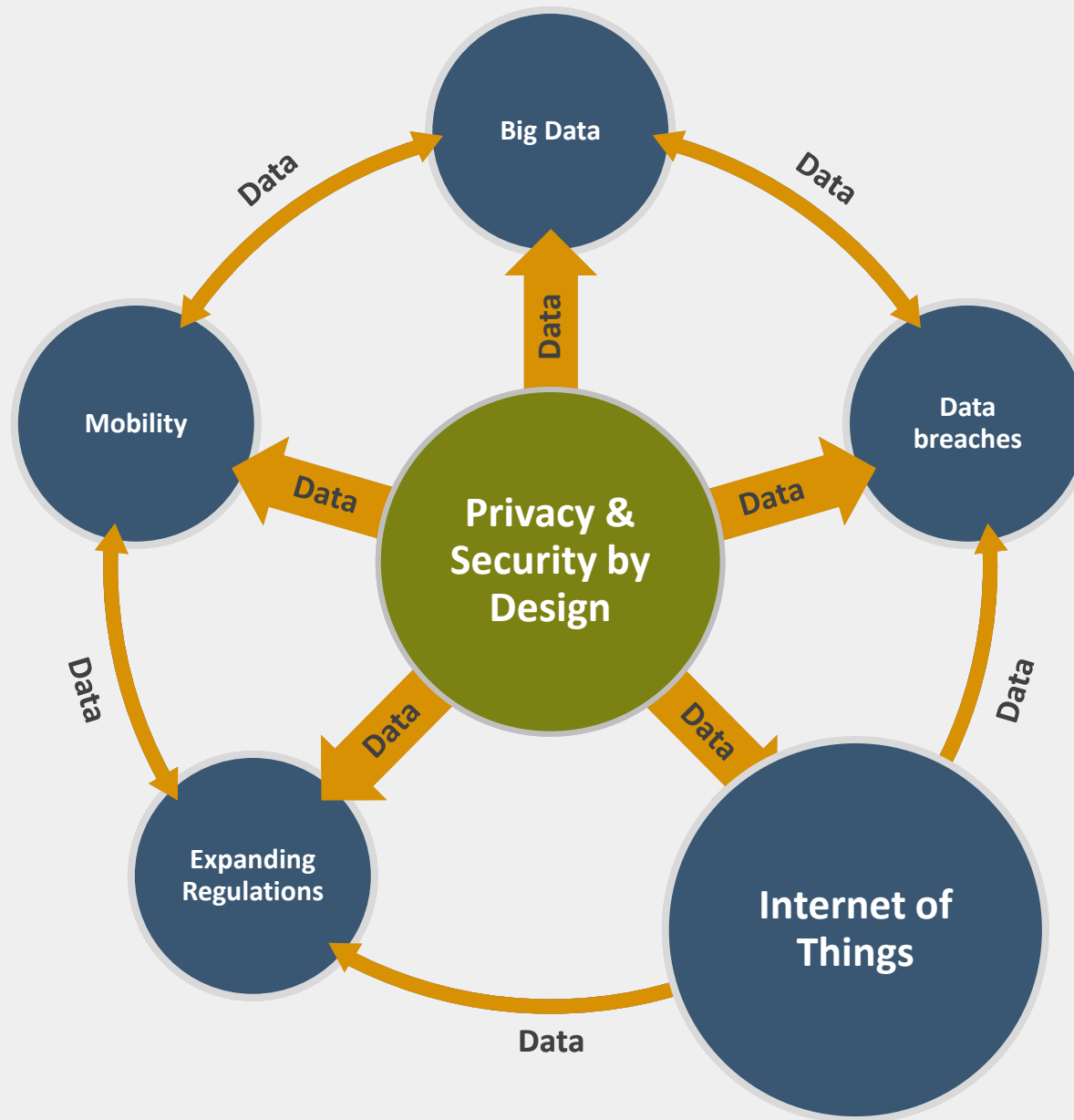


Emerging Challenges



Internet of Things

26 Billion
by 2020
Gartner



Consumer wearables

Google Glass, fitness tracking bracelets and smartwatches, jewelry and belts

Medical and healthcare systems and devices

Blood pressure and heart rate monitors, advanced devices capable of monitoring specialized implants, such as pacemakers or advanced hearing aids.

Transportation systems

Smart traffic control, smart parking, electronic toll collection systems, logistic and fleet management, vehicle control

What is the Internet of Things?

"The network of physical objects that contain embedded technology to communicate and sense or interact with their internal state or the external environment."

(Gartner Definition)

Note: Things exclude PCs, Tablets and Smartphones



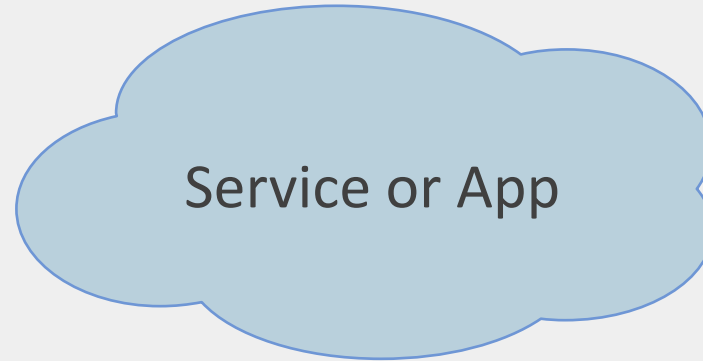
IOT: A Pairing of Services and Things

Elderly person monitor



Smart Slippers

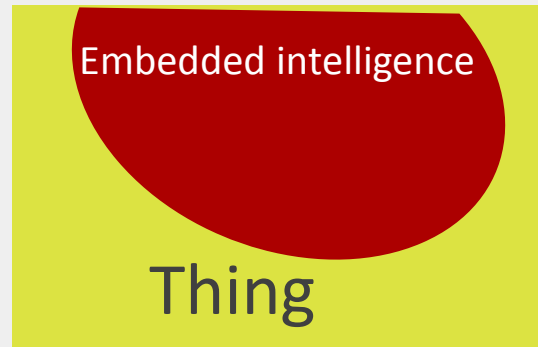
Source: 24eight Smart Slippers



Service or App



Machine to machine (M2M) communication



Embedded intelligence

Thing

Pay-as-you-drive car insurance



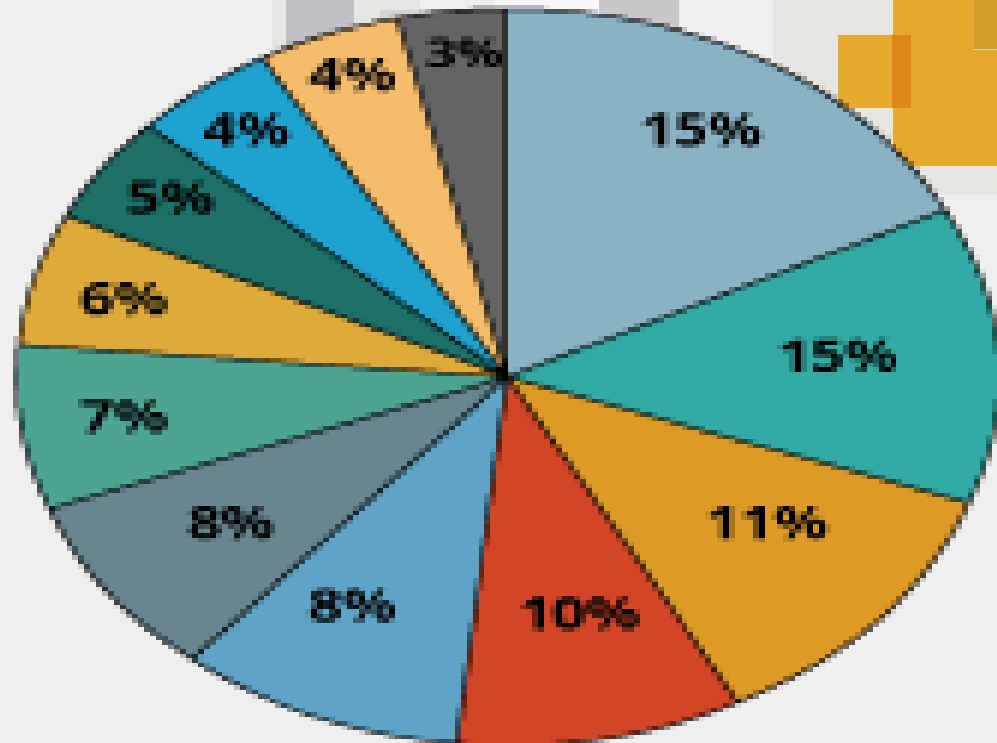
Driving Habits Sensor

Source:
<http://www.progressive.com/auto/snapshot.aspx?vanity=true>



Internet of Things Value Add by 2020

\$1.9 Trillion



Source: Gartner

Anticipated Growth in Connectivity

DEVICES per person by 2015

5.8

in North America

4.4

in Europe

5.4

in Japan

15 BILLION

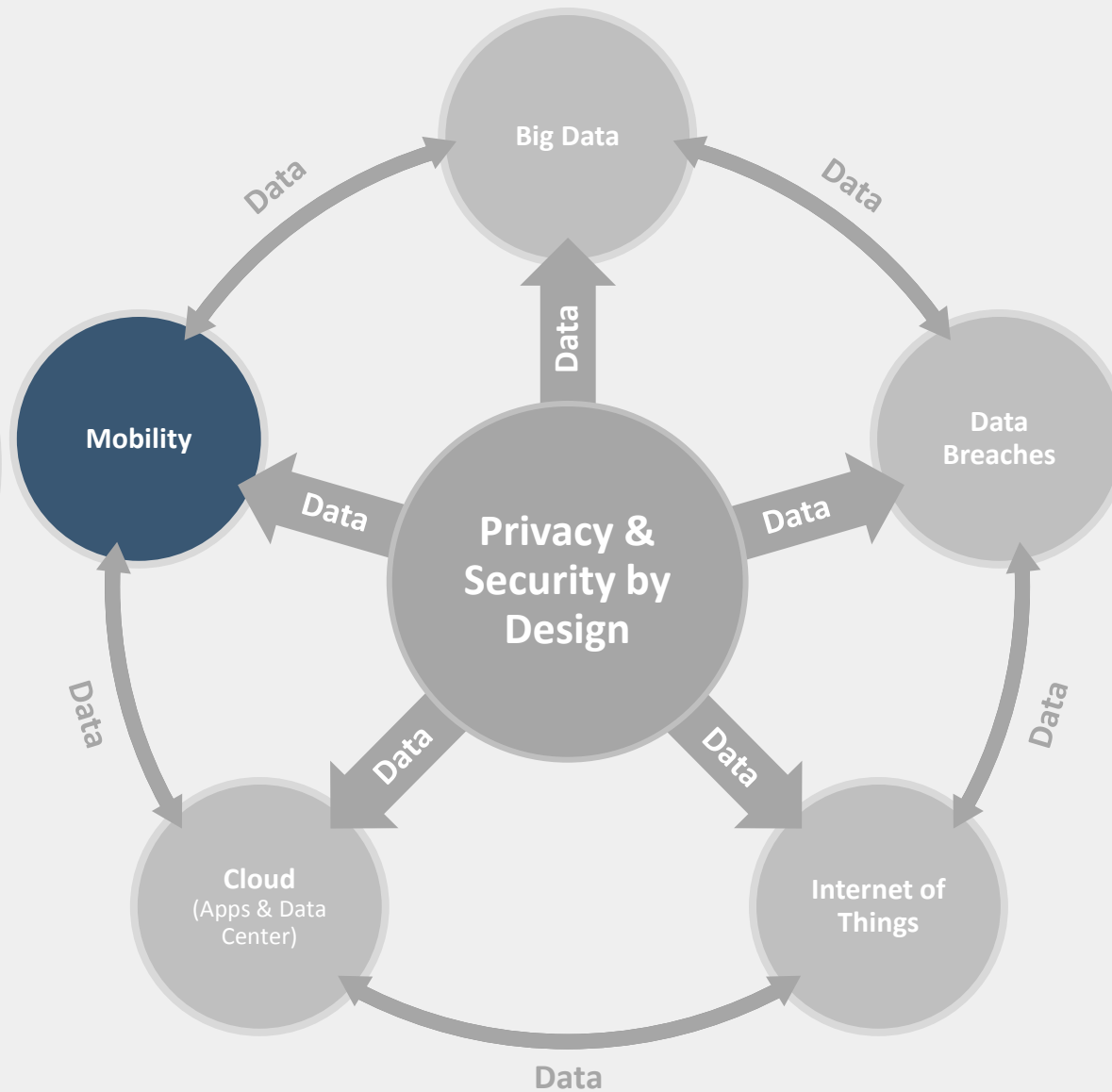
Internet connected devices by 2015

26 BILLION

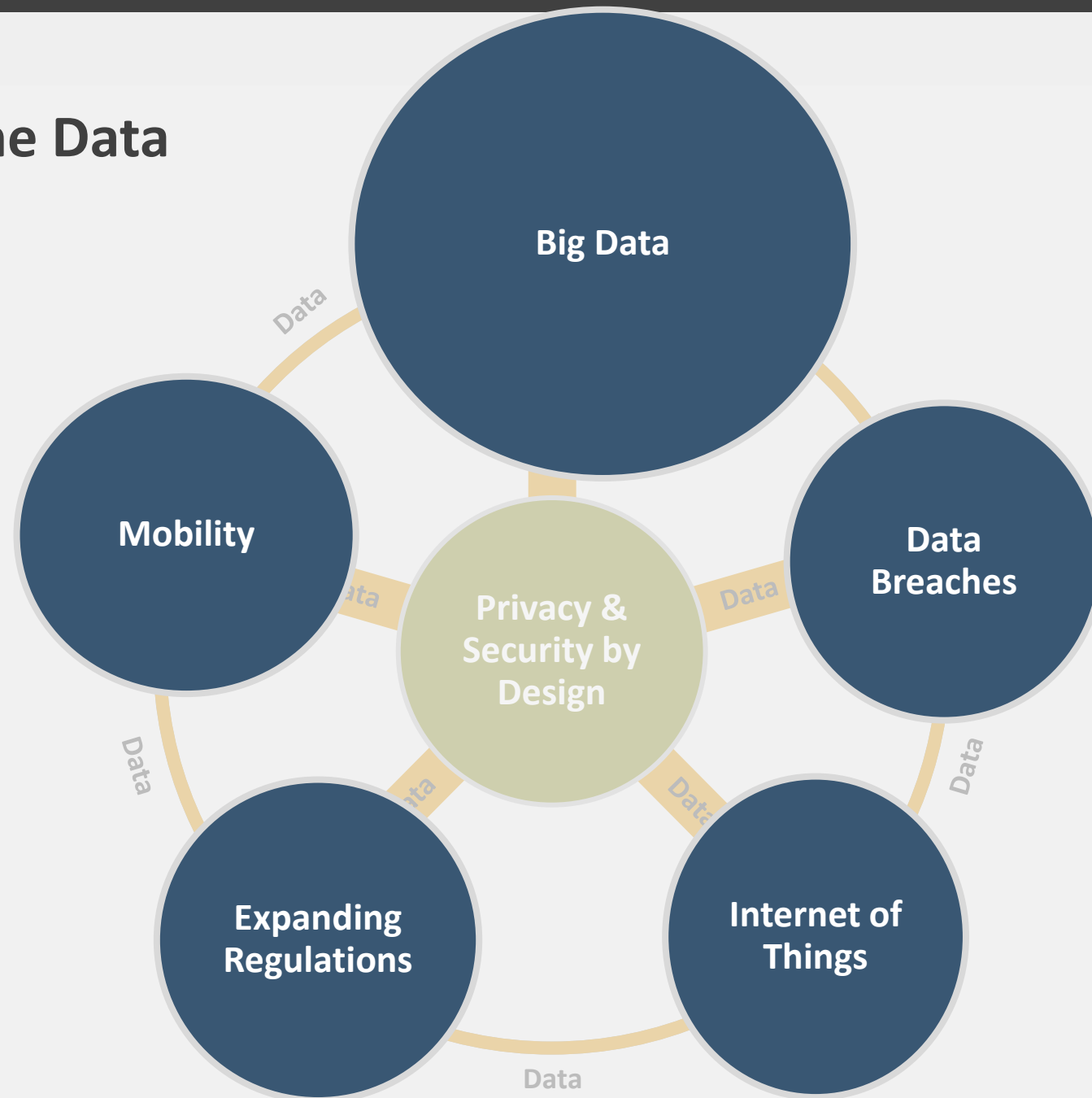
Internet connected things by 2020 – source: Gartner

Mobile Explosion

Mobility
7 Billion
phones by 2020
Mobility Trend Caught IT
By Surprise



It's All About The Data



What is Big Data?

“High-volume, high-velocity and high-variety information assets that demand cost-effective, innovative forms of information processing for enhanced *insights* and *decision making*”

(Gartner Definition)



Expanding Regulations

- Different definitions of Personal Information
- Data localization and extraterritorial reach of jurisdictions
- Data breach notification requirements



Challenges of these emerging trends

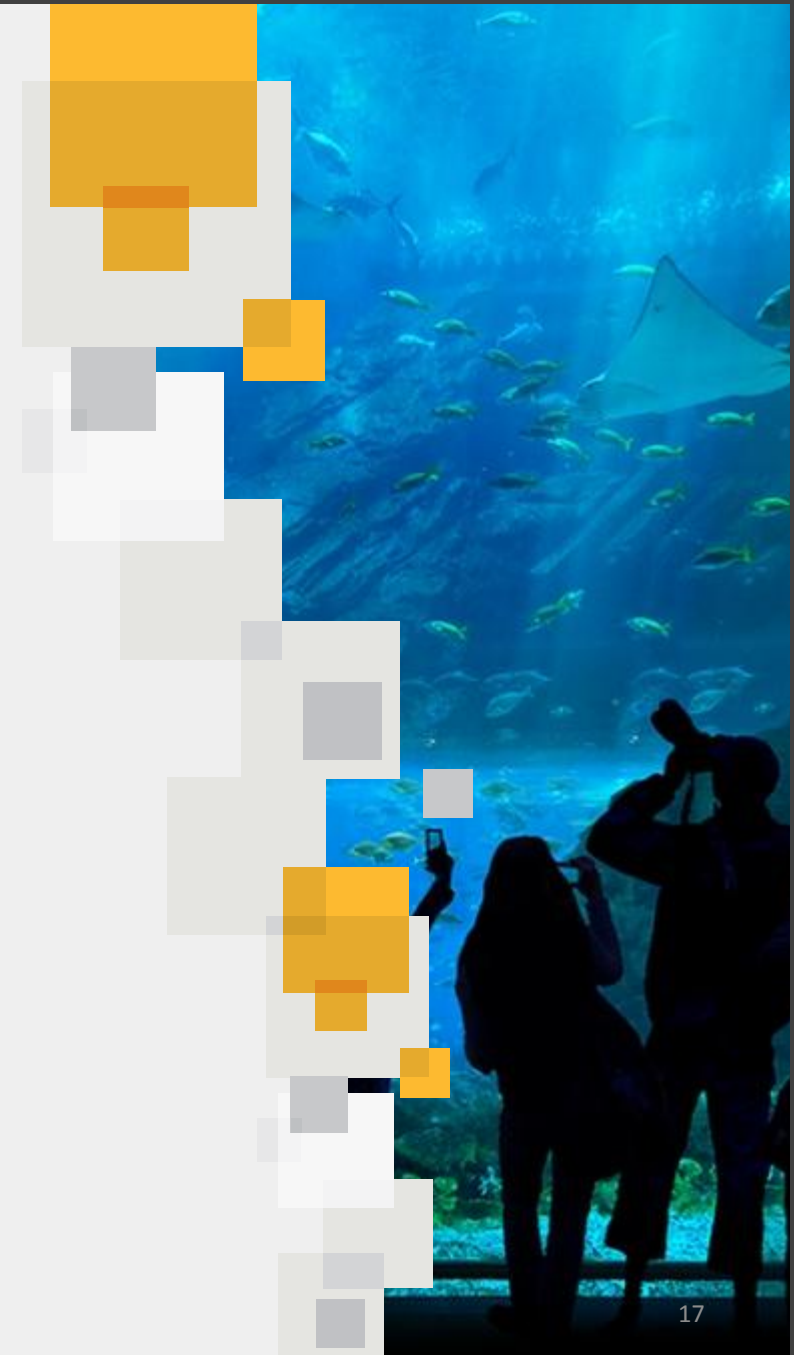
- Security
- Repurposing of data for unanticipated uses
- Is data minimization viable?
- Do established Privacy Principles still work?
- Impact on individuals of decisions based on data
- *Consumerization* of IT, BYOD, and file sharing



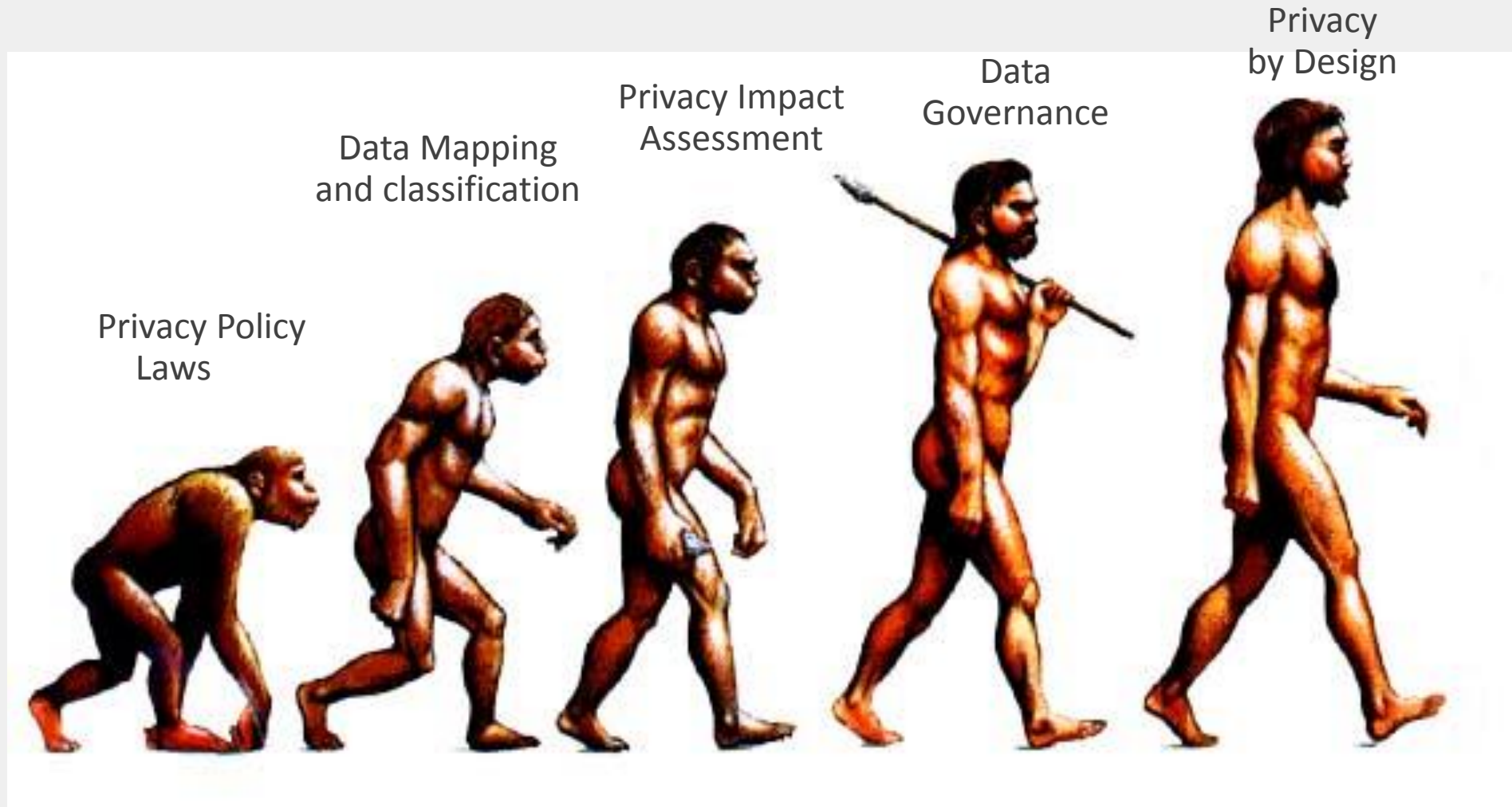


Privacy & Security by Design

Technology, Governance, and Training



The Evolution of Privacy



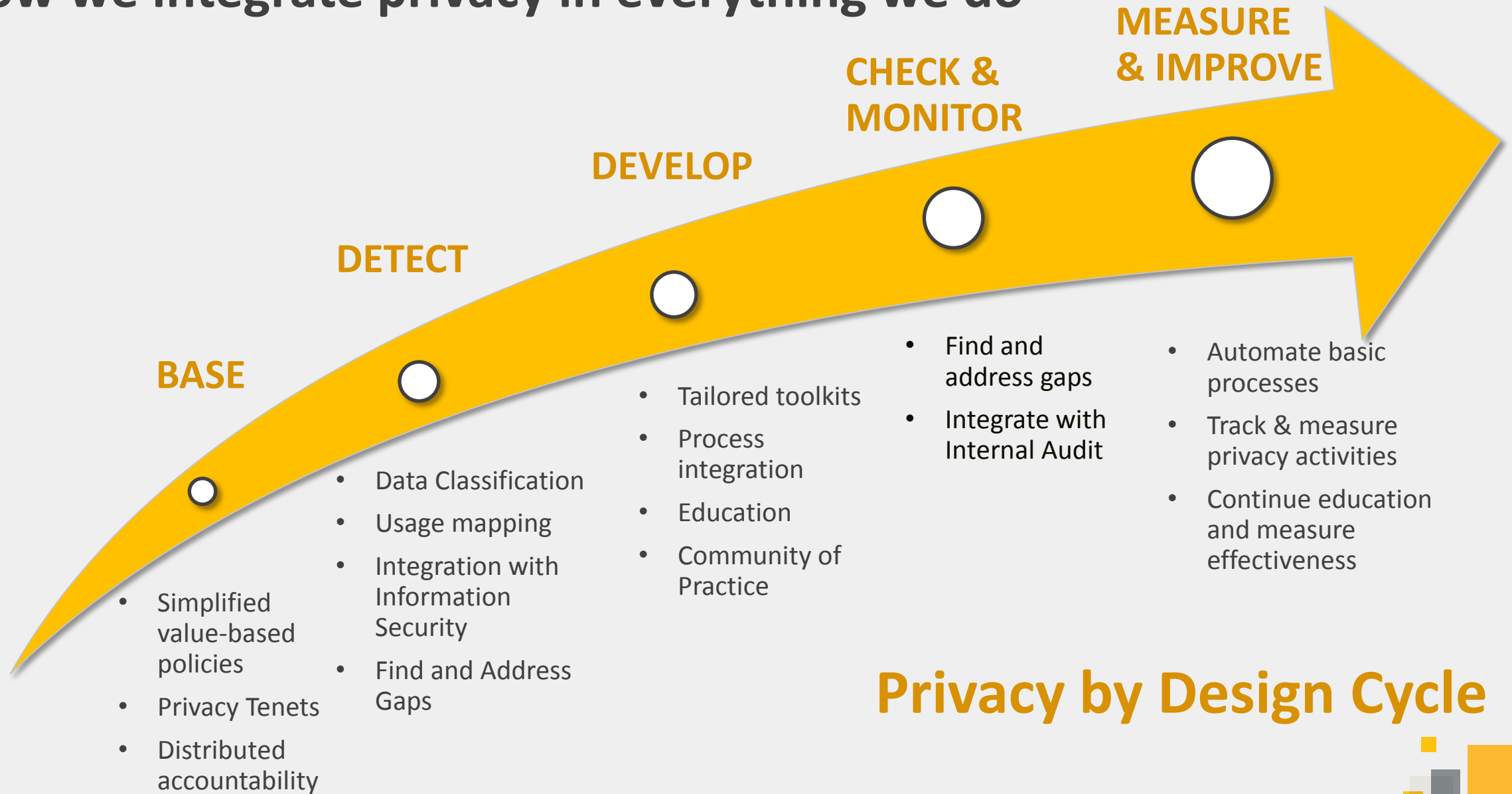
Privacy by Design Defined

Privacy and data protection are *embedded throughout the entire life cycle of products and services*, from the early design stage to their deployment, use and termination.

Privacy is *built into every business practice and process* that touches personal information, to help people, businesses, and governments protect and manage their information.



How we integrate privacy in everything we do



Privacy by Design Cycle



Distributed Accountability

Privacy Program

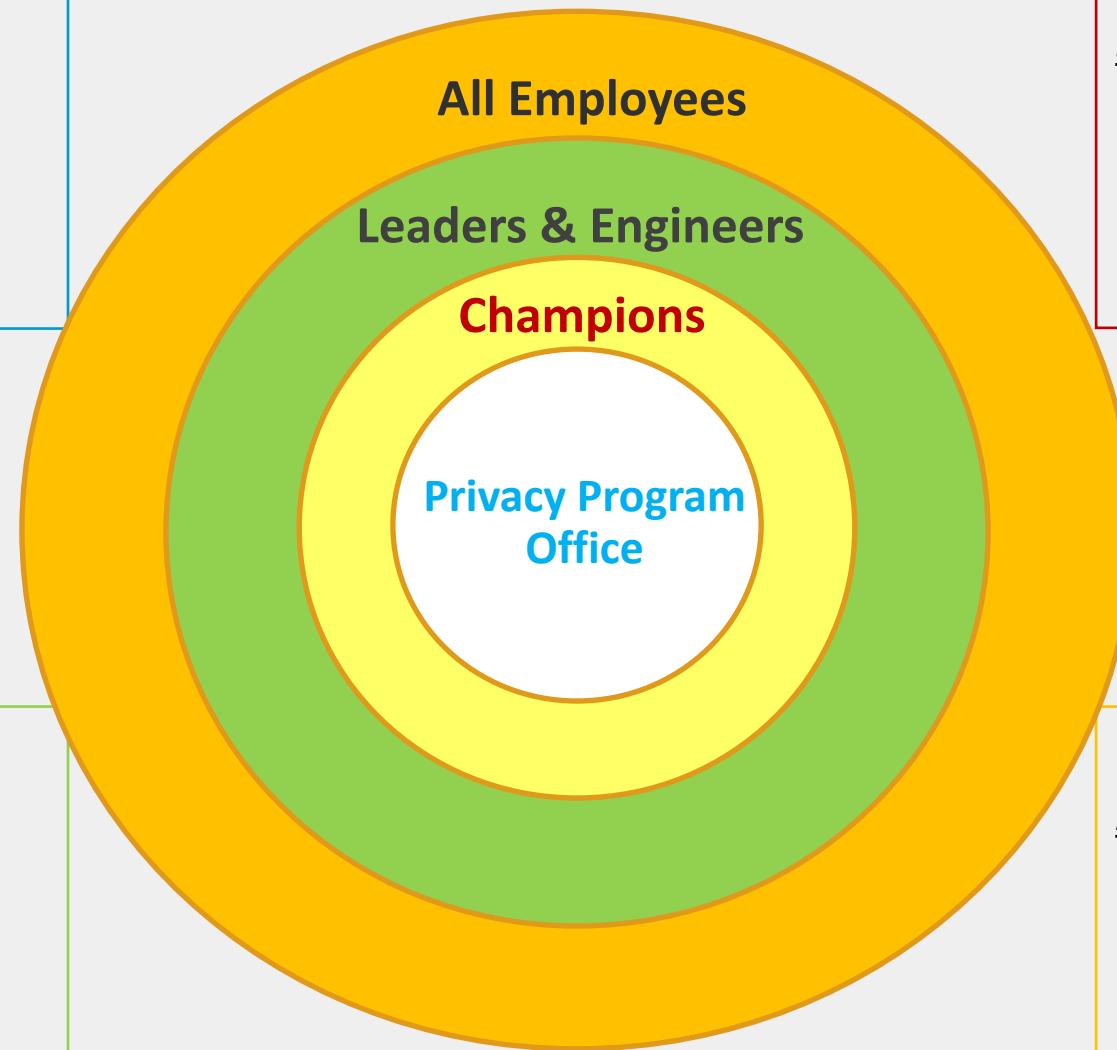
Establish & Lead

- Global vision
- Policies & requirements

Champions

Sponsor & Facilitate

- Compliance within the Business
- Measurable privacy goals



Leaders & Engineers

Implement & Develop

- *Privacy-by-Design* in processes and products

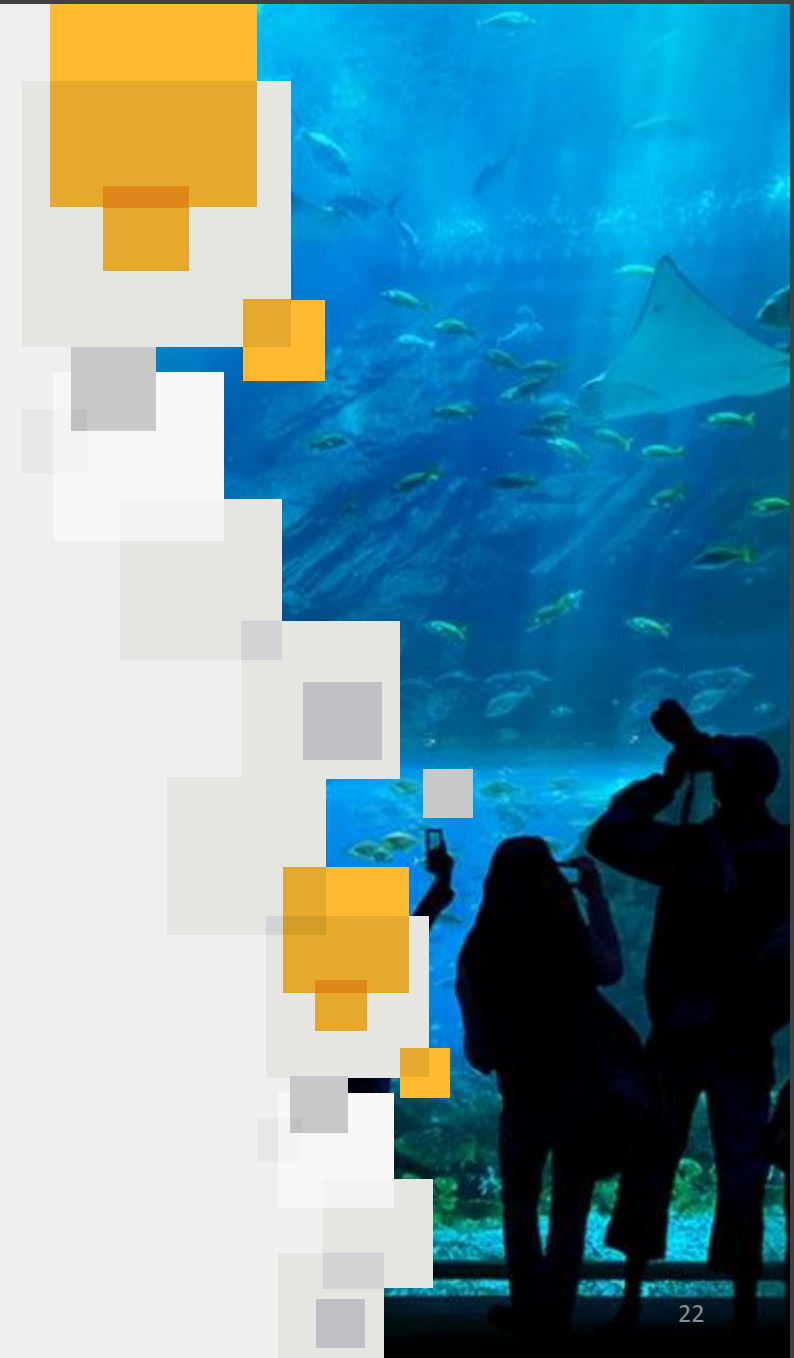
Employees

Awareness & Competence

- In addressing customers privacy concerns
- In their day-to-day jobs

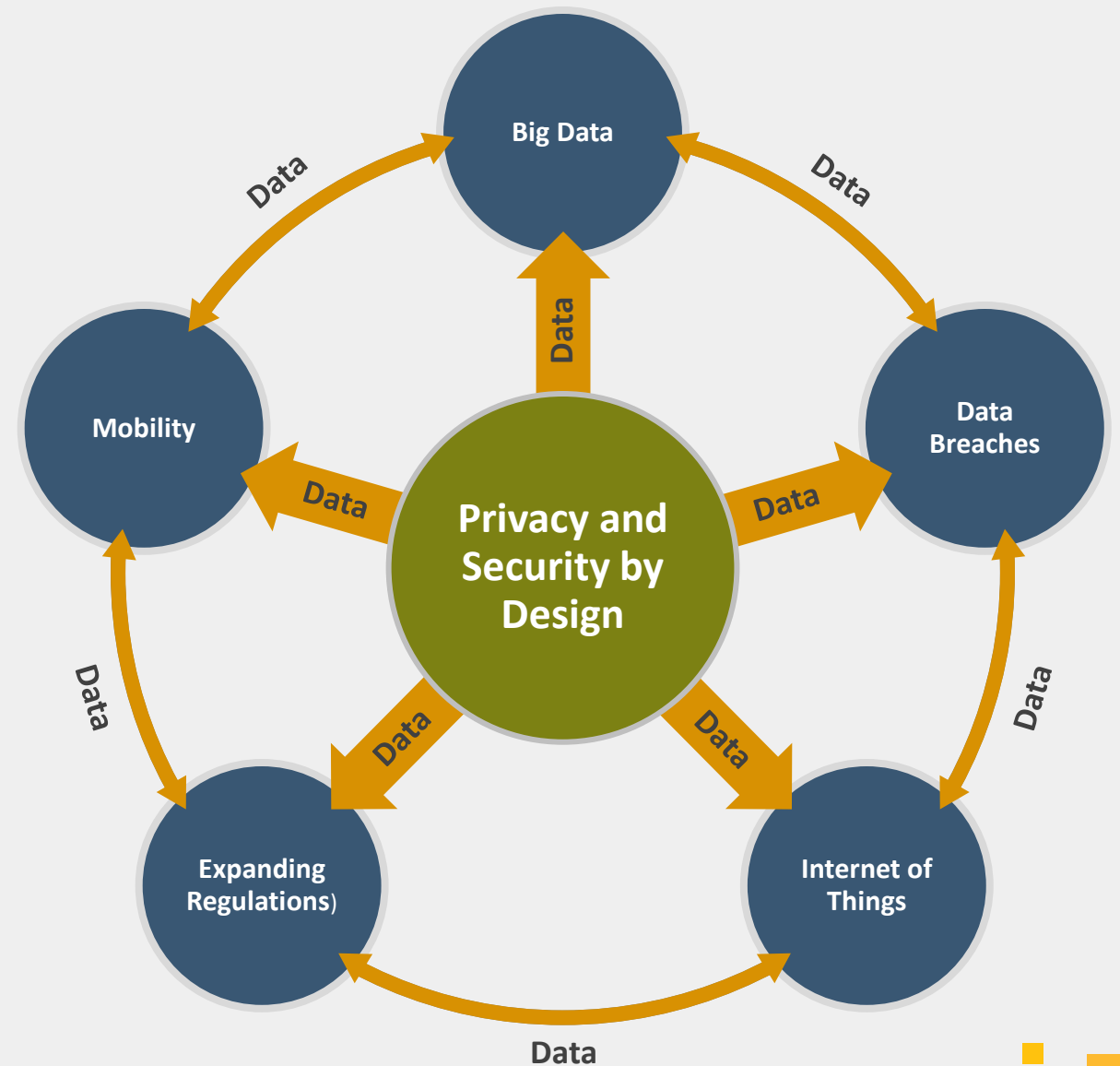


What Can We Conclude?



What Can We Conclude?

- Privacy is facing converging and unprecedented challenges
- The traditional privacy compliance toolbox alone is not adequate to respond
- Privacy-by-Design is the right response
- Privacy-by-Design requires cross-functional involvement and distributed accountability
- Privacy-by-Design requires education that goes beyond awareness, to drive behavior





Thank you!

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