



# It's 2018... Is Your Information Trustworthy?



Records Knowledge Conference  
Sacramento, California  
March 13<sup>th</sup>, 2018

By Bassam Zarkout

# It's 2018... Is Your Information Trustworthy?

## □ About this session

- #DigitalTransformation in Government and Private Sectors has led to an explosion of corporate information, which must be governed. A core tenet of IG is Information Trustworthiness... a framework that incorporates elements like accuracy, security, legal usage, protection of individuals rights for privacy, controls over dissemination, etc.
- Organizations face challenges in striking the appropriate balance between these elements. Advances in technologies like #Blockchain, #IoT, #AI, #RPA are fundamentally changing the nature, form and format of information assets, adding further complexity and urgency to this issue.
- Session will explore above topics and highlight the pivotal role that the disciplines of Records Management and Information Governance will play in this emerging world.

## □ About Bassam Zarkout

- Tech executive with 25+ years of experience in IG, RM, ECM and IoT domains (including design/implementation of IG platforms as CTO of RSD)
- Founder of IGnPower, a consulting practice focused on IoT Data Governance, Privacy and Trustworthiness (and impact of Blockchain and AI on them)
- One of top 10 social influencer in Financial, Risk, Compliance, Fintech and Regtech in Canada - Thompson Reuters
- Resides in Ottawa, Canada



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# Digital Transformation...

- Digitization of Content, Processes, Business models
- Significant business benefits:
  - New business models
  - Better outcomes

Digital Transformation



- Massive volumes of Information Assets:
  - Created, Stored, Consumed
- Significant challenges associated with that volume
- Complex corporate information landscape
  - Documents, records, email, email, social media, back-office report output, paper
  - On-premises, cloud, etc.

High Volume of Information Assets



# Digital Transformation



## Need to look after Information Assets

- Lifeblood of organizations
- Need insight about Corporate Information Assets



## Information Governance

- What problem does it solve?
- Is it a...
  - Strategy?
  - Program?
  - Set of technologies?

### Need to look after Corporate Information Assets

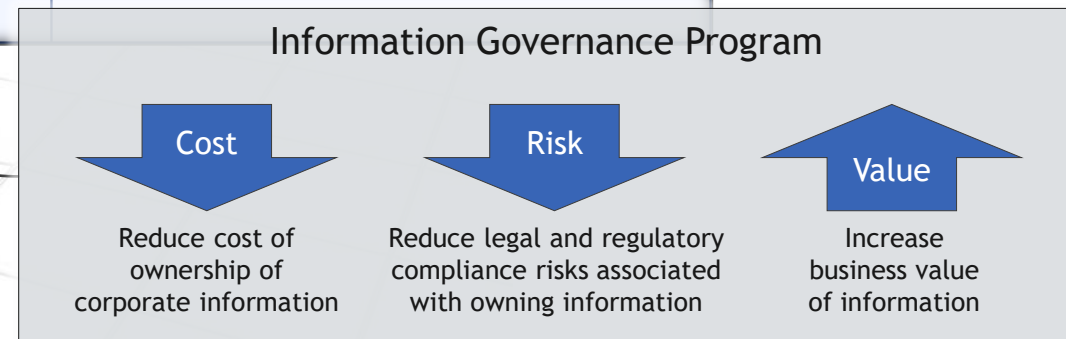
*Retention Schedule    Classification    Location*  
*Volume    Legal Risks    Policies    Retention*  
*Semantic Content    Privacy    Security*  
*Data Residency    Value    Actions to take*

### Who should lead Information Governance

*Chief Data Officer    Chief Information Officer*  
*Chief Digital Officer    Chief IG Officer*  
*Records Manager    Legal Counsel*  
*Chief Risk Officer    Data Protection Officer*  
*Other?*

# Information Governance: Strategy ↔ Program ↔ Technology

IG Strategy	IG Program	IG Technologies
Vision	Framework for Executing Strategy	Alignment with IT Strategy
Mission	Budgets	Alignment with Security Strategy
Mandate	Committed Stakeholders	Alignment with Data Privacy Strategy
Culture	Definition of Value for Stakeholders	Technologies to Power specific Use Cases
Executive Sponsorship	Published Corporate Policies	Other
Other	Specific Use Cases (with priorities)	
	Communication Strategy	
	Other	



# Lifecycle of Corporate Information Assets

## Lifecycle Policy based on...

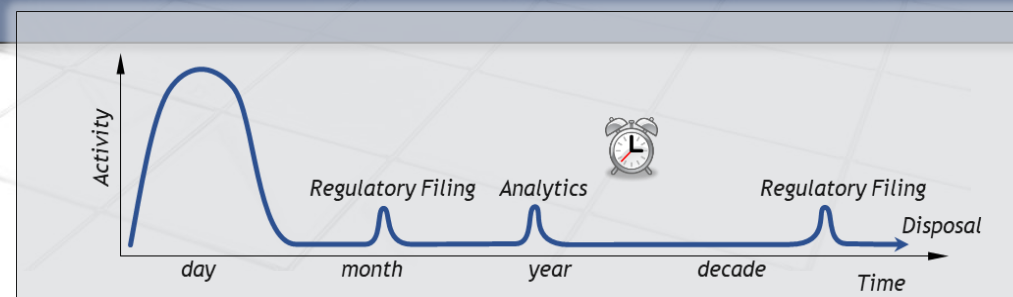
- Business requirements
- Operational requirements
- Regulatory requirement
- Legal requirements
- Data Privacy requirements

## Retention during lifecycle...

- Maintain integrity, accessibility and compliance with privacy
- Duration may be decades long
- Lifecycle of Information Asset may be longer than lifecycle of systems used to create it and store it

## What to do at end of life of asset...

- Decision needed re what actions to take
- Regulations and laws may require disposition of assets
- Auditable execution of actions during lifecycle (and EoL):
  - Retention
  - Holds
  - Disposition, Transfer, Expungement



# Challenges facing Information Governance

Despite its short history, Information Governance has had its fair share of challenges...

- Lack of maturity in discipline and organizations
- Technical complexity
- Organizational complexity
- Moving target... Privacy, IoT, Blockchain, etc.

IG practices still emerging



- Long on vision
- Short on execution
- Short on effective executive sponsorship

Most IG programs not well established



- Tighter IT budgets
- Most CIOs focused on infrastructure
- Records Managed stuck in the past
- Business Leaders focused on business

Unclear who is in charge



## Information Governance Program



Reduce cost of ownership of corporate information

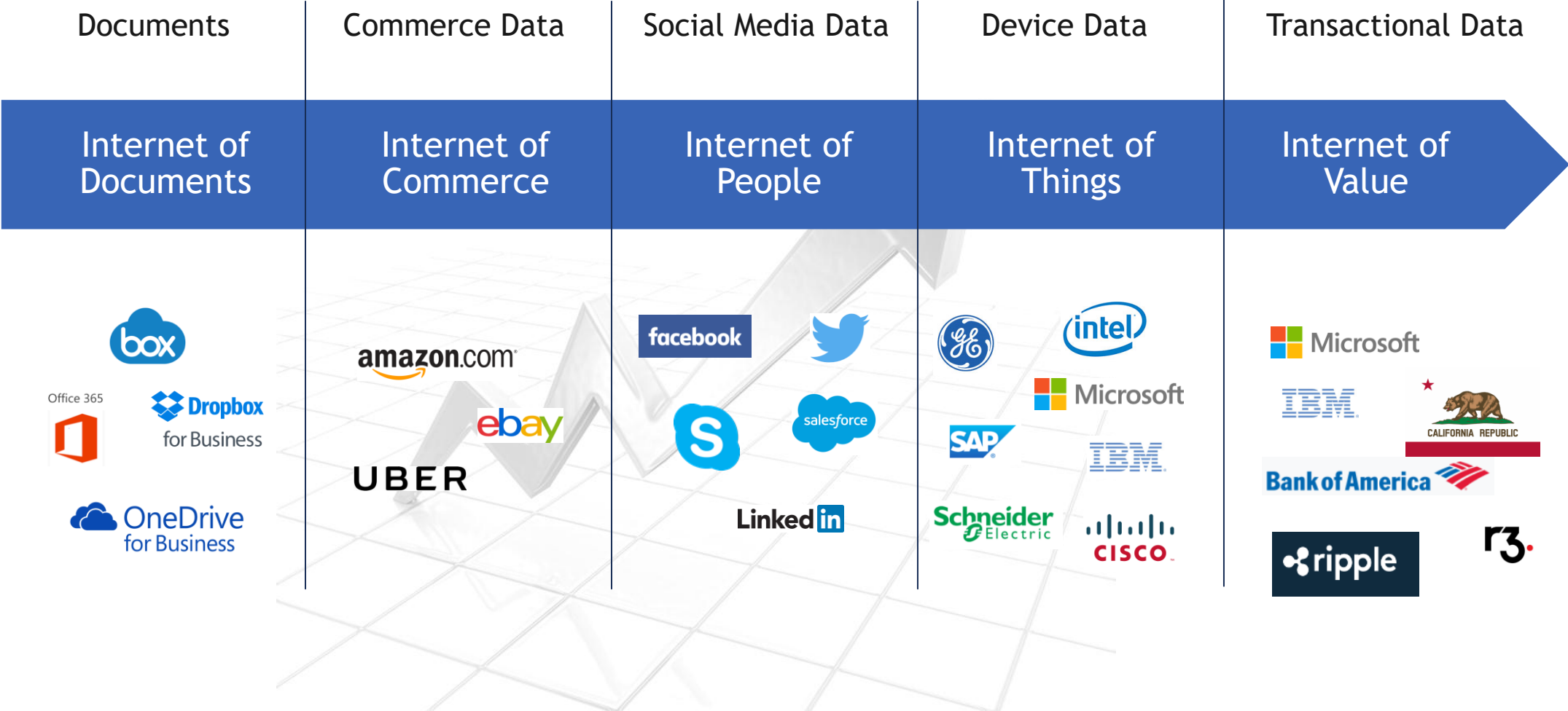


Reduce legal and regulatory compliance risks associated with owning information



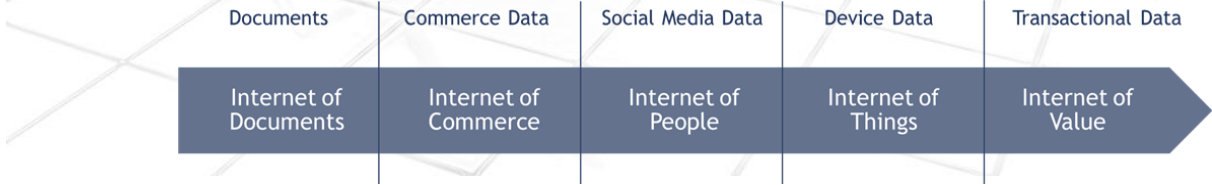
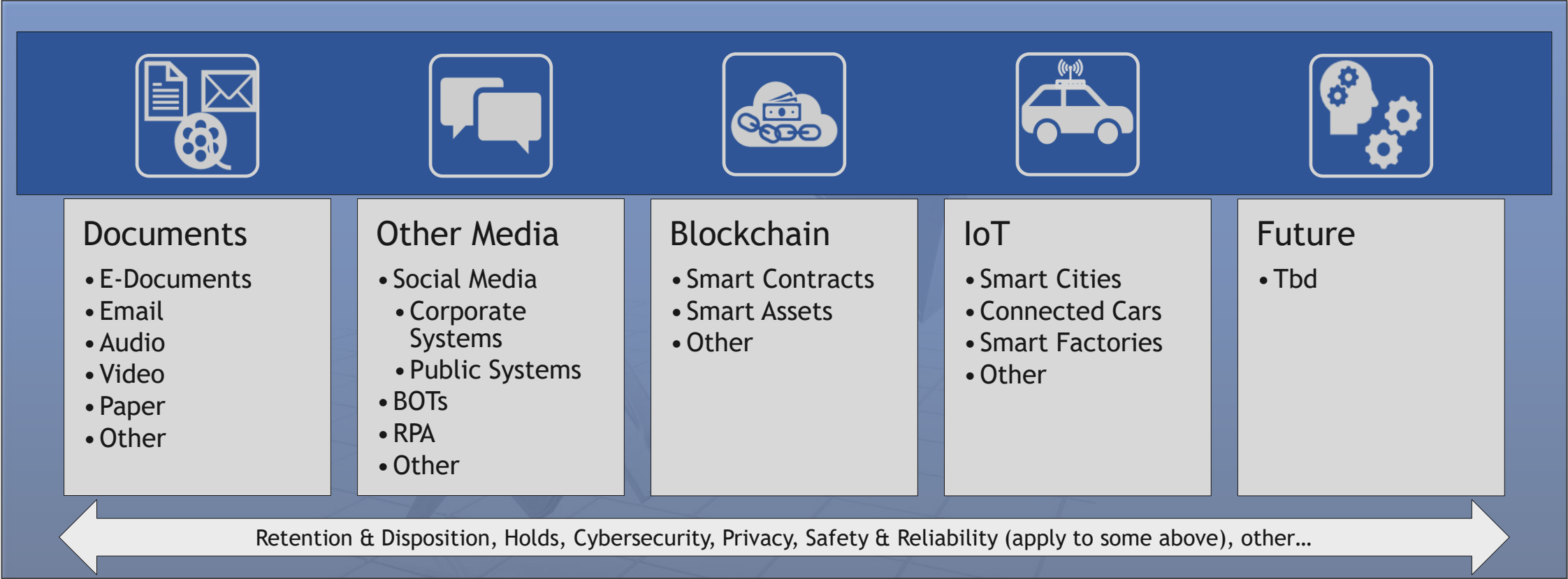
Increase business value of information

# The Evolution of the Internet of X



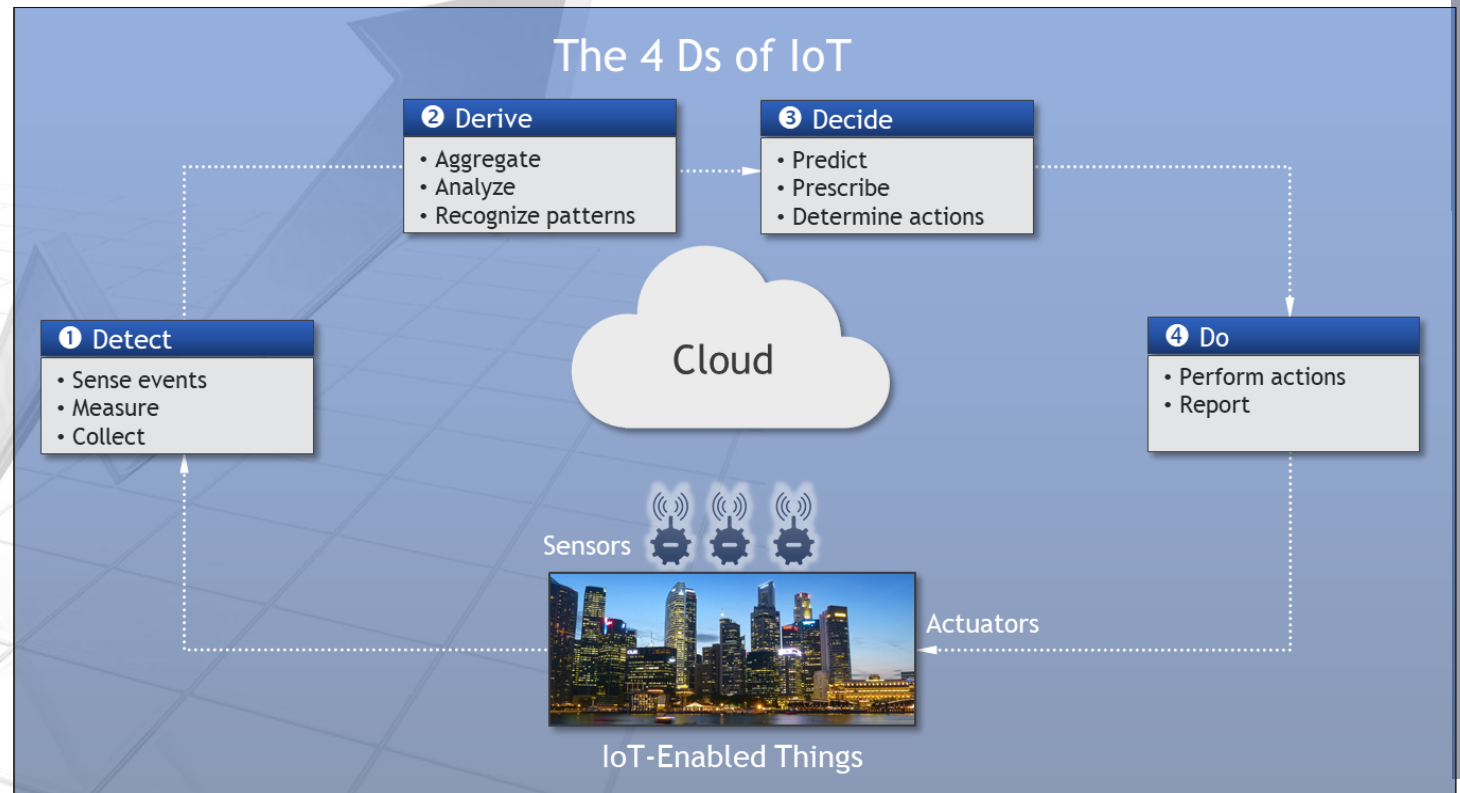


# More to Information Assets than just Documents



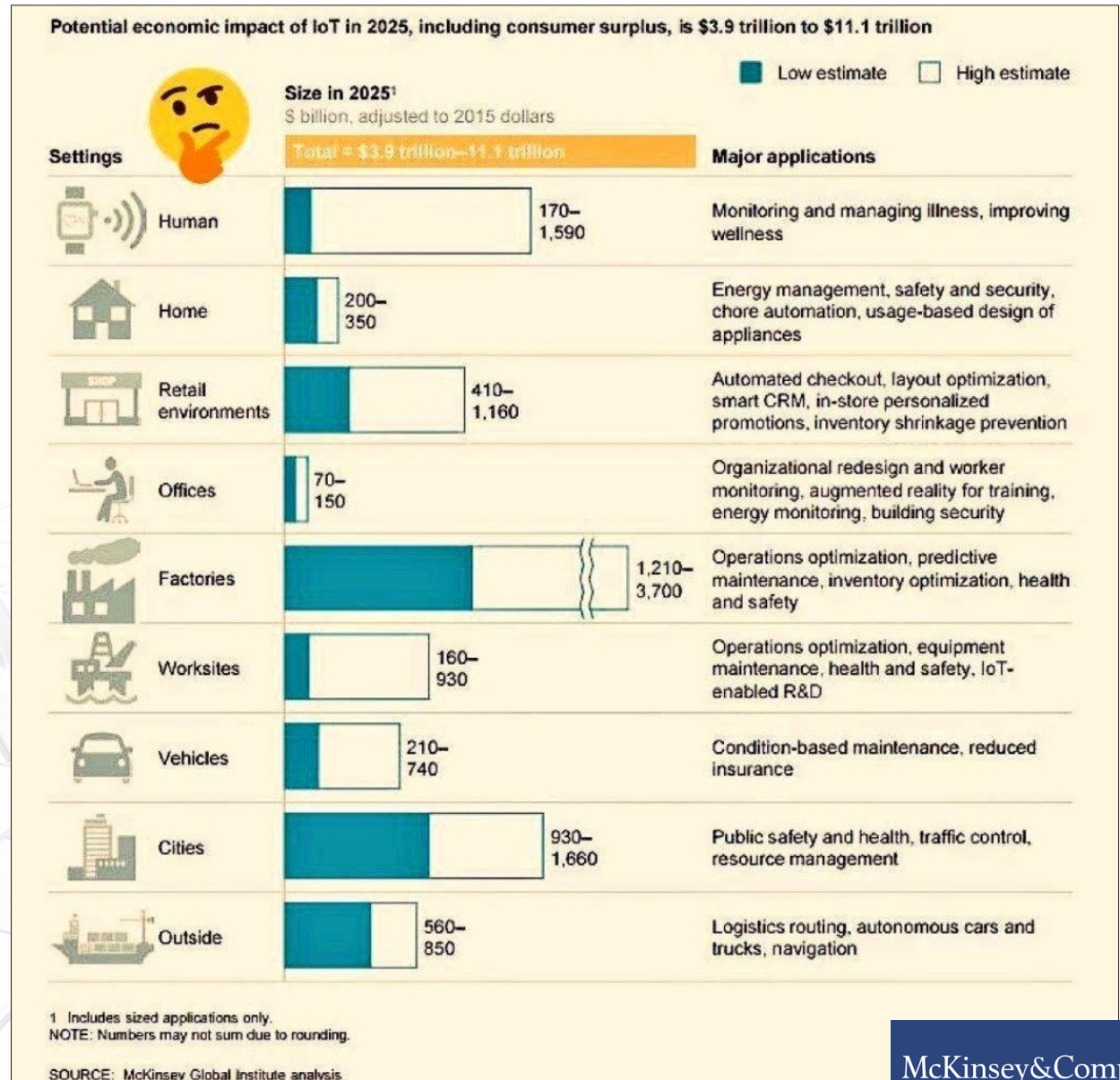
# Internet of Things

- IoT is the ability to generate operational data from sensor-equipped objects (“things”) for the purposes of exploiting this data, gaining operational insight and ultimately producing “better outcomes”
  - Enhance productivity
  - Create new business models
  - Eliminate unplanned maintenance
  - Increase revenue
  - Other...
- IoT Data...
  - It’s coming
  - Actually, it’s already here!
  - Massive volume



# Internet of Things

- ❑ Significant Economic Impact
  - By 2025 \$3.9t to \$11t (trillions)
- ❑ Many Application Areas
  - Smart Factories
  - Smart Cities
  - Connected Cars
  - Energy Management
  - Healthcare
  - Etc.



# Blockchain & Smart Contracts

- ❑ Blockchain
  - Cloud-based database shared by every participant in a transaction
  - Essentially a peer-to-peer ledger
- ❑ Smart Contracts
  - Computer protocols that facilitate, verify, or enforce negotiation / performance of contract
  - UI that emulates logic of contractual clauses

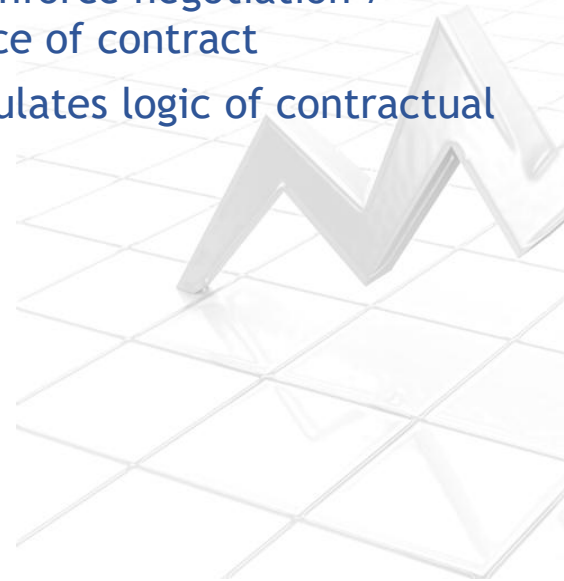
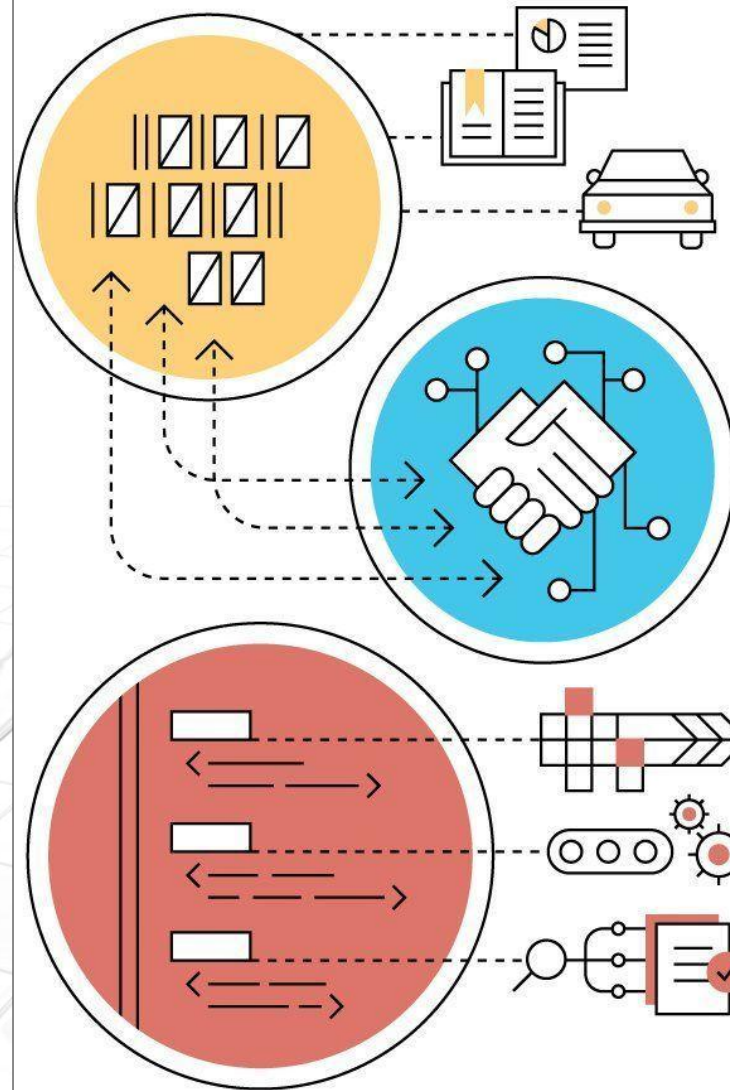


Figure 1. Three levels of blockchain



## 1 Storing digital records

Blockchain allows unprecedented control of information through secure, auditable, and immutable records of not only transactions but digital representations of physical assets.

## 2 Exchanging digital assets

Users can issue new assets and transfer ownership in real time without banks, stock exchanges, or payment processors.

## 3 Executing smart contracts

Self-governing contracts simplify and automate lengthy and inefficient business processes.

**Ground rules** Terms and conditions are recorded in the contract's code.

**Implementation** The shared network automatically executes the contract and monitors compliance.

**Verification** Outcomes are validated instantaneously without a third party.

# Smart Cities: IoT and Blockchain

- Why Smart Cities?
  - Improve operational efficiency, drive citizen engagement, identify new revenue sources, etc.
  - By 2019, 40% of Local/Regional Governments will use IoT to turn infrastructure into Assets instead of Liabilities (IDC)
- Integrated approach
  - IoT, Ubiquitous Connectivity (5G), AI, etc.
  - Cloud is so 2010's... welcome to the Edge
- Blockchain protects data integrity
  - Vendors still trying to figure out how it can help with data integrity
    - Help securing data integrity from point of capture to point of analysis and storage
    - Strengthen chain of custody of data

IDG CONTRIBUTOR NETWORK [Want to Join?](#)

## DEFINING THE CONNECTED FUTURE

By Dilip Sarangan, Contributor, Network World |  
MAR 1, 2018 10:07 AM PT


Opinions expressed by ICN authors are their own.

**OPINION**

### Digital transformation of cities: Creating smart and engaged communities with IoT

Ubiquitous connectivity, AI, distributed computing and blockchain help cities transform their data to actionable intelligence.

[Twitter](#) [Facebook](#) [LinkedIn](#) [Google+](#) [Reddit](#) [StumbleUpon](#) [Email](#) [Print](#)

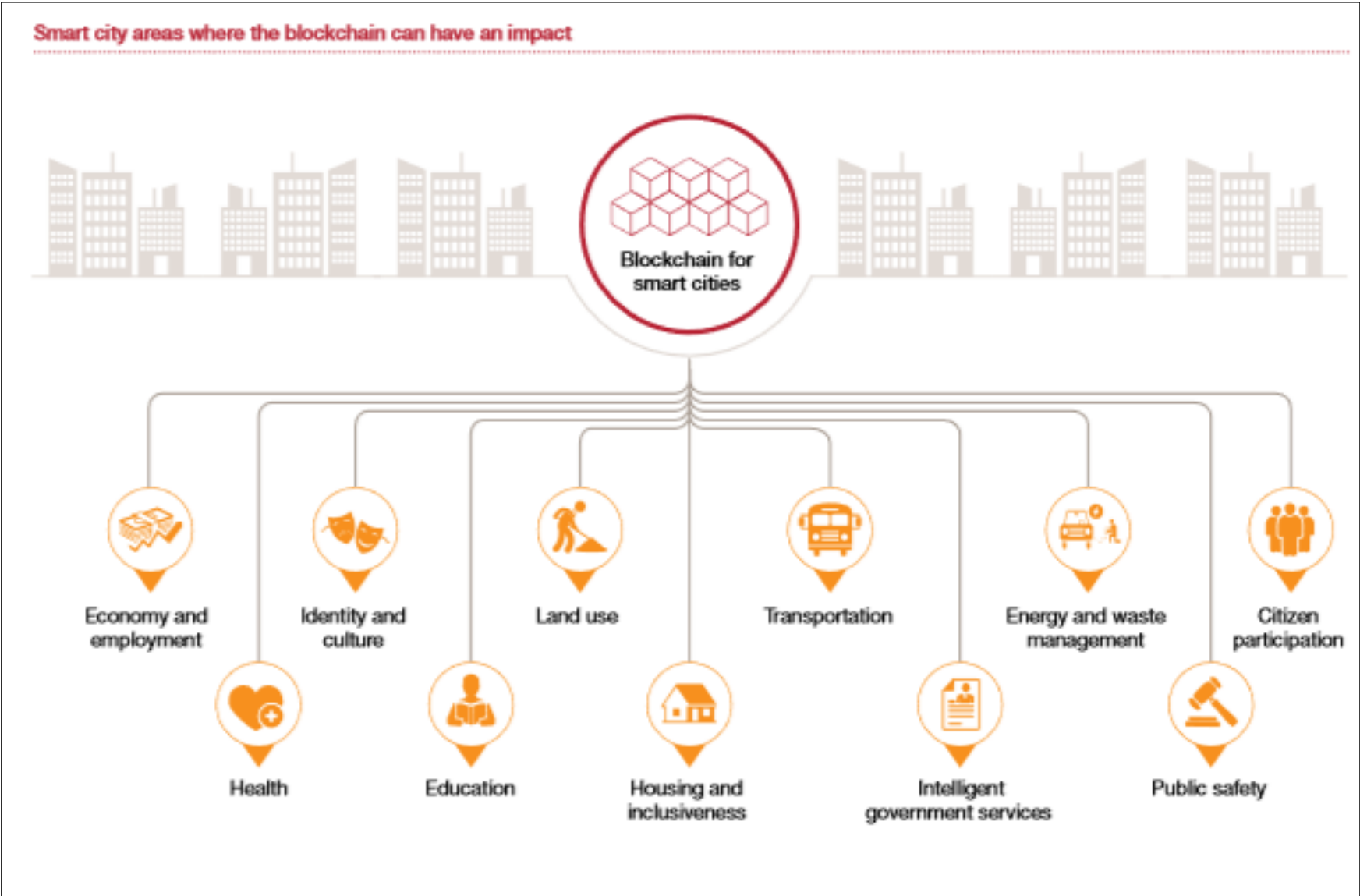


 **Joan Torres** @SmartUrbanite · Feb 24

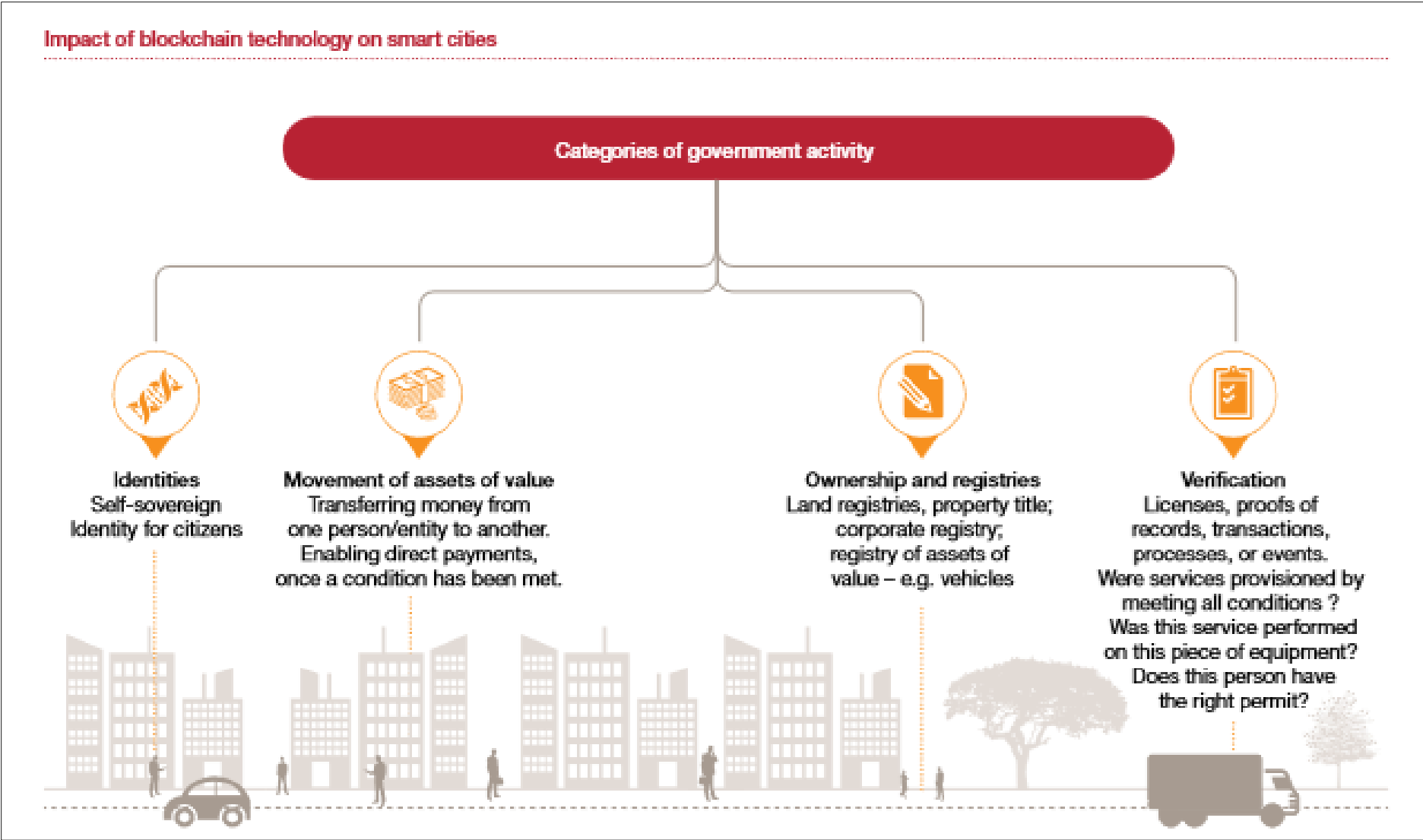
Will #Blockchain Be the Secret Sauce for #SmartCities? [buff.ly/2FqonBp](https://buff.ly/2FqonBp) via @meetoftheminds

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# Smart Cities: IoT and Blockchain



# Smart Cities: IoT and Blockchain



# Smart Contracts: California Bill AB-2658

- ❑ Builds on existing Uniform Electronic Transactions Act
- ❑ Paves way for electronic records secured by Blockchain to be deemed legal and enforceable
- ❑ Expands definition of “electronic” record and “electronic signature” to encompass those secured via Blockchain
- ❑ Expands legal definition of “contract” to encompass smart contracts

**Bassam Zarkout**  
@bzarkout

California takes up #Blockchain with bill to recognize it and #SmartContracts  
[esignrecords.org/california...](https://esignrecords.org/california...)

**ESRA** Electronic Signature & Records Association  
Who We Are Public Policy Resources Conferences and Meetings Membership

## California takes up blockchain with bill to recognize it and smart contracts

### Summary

The largest of several states so far to pass or consider blockchain contract law

**Newswire:** Feb. 20, 2018.  
**Dateline:** Sacramento.

California would become the latest — and largest — state to recognize blockchain records as valid under its contract law under a bill recently submitted to the state Assembly.

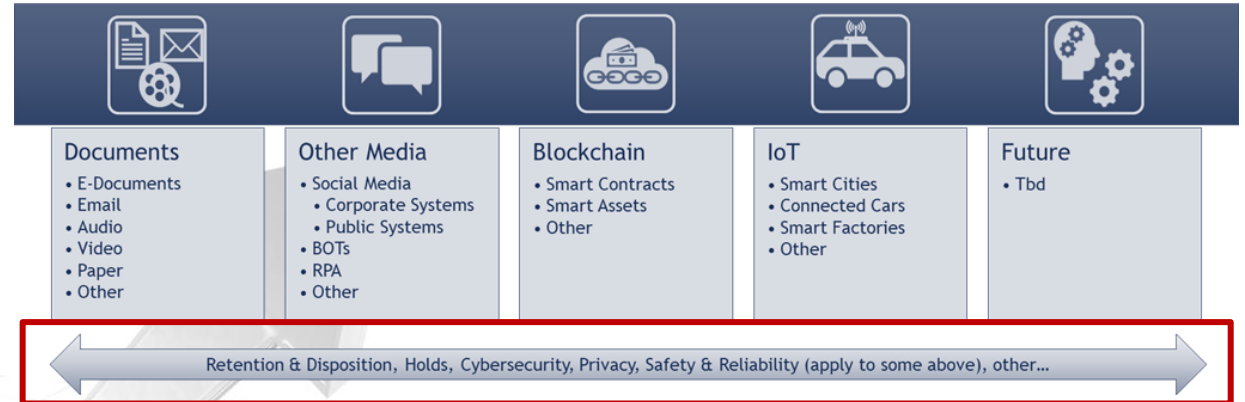
Assembly Bill 2658, introduced by Ian Calderon, recognizes that a record secured by blockchain technology is an electronic record, and signatures secured by the same are also electronic signatures. California already recognizes both under the state's Uniform Electronic Transactions Act, which it and many other states passed about 20 years ago. This bill specifies that blockchain is a part of that.

03-05-18, 18:16



# Multiple Governance & Control concerns about Information Assets

- Retention, Disposition, and Holds
  - Applies to Information Assets
  - Records Management, Information Governance, eDiscovery
- Cybersecurity
  - Applies to Assets and Information Assets
- Privacy
  - Applies to Information Assets that reference Data Subjects
- Safety & Reliability
  - Applies to Assets
- Other



## Notes

- Multidisciplinary effort
- IG and RM are part of it
- Security is part of it
- Privacy is part of it
- In some cases, Safety and Reliability are part of it

Sometimes these requirements conflict with each other

# Cybersecurity... a major concern



**NIST**

National Institute of Standards and Technology  
Technology Administration, U.S. Department of Commerce

## The Internet of INSECURE Things

From Stuxnet to Mirai to whatever insecurity comes next, billions of Internet-connected devices are under threat from an evolving arsenal of hacks and attacks.

**Why aren't IoT devices more secure?**

Too many embedded systems designers are more focused on shipping products than the security of the devices and their users. Nearly 22% say they don't even have security on their to-do list. Many design best practices that raise security levels aren't followed.

**BUG TRACKING**

Bug tracking is critical to ensure that problems don't fall through the cracks.

**Internet of DANGEROUS Things**

About **25%** of these "Internet-connected" devices could kill or injure people if hacked

**17%** Don't have a bug database or other system to track known issues

**54%** Don't perform

**CODE REVIEWS**

A second set of eyes on

# Information & Data Privacy

- An aspect of Information Technology that deals with the ability of an Organization to determine what Personal Data (data about individuals) can be shared with 3<sup>rd</sup> parties
- Privacy Laws in the US
  - US Federal Privacy Act
  - State-level Privacy Acts
  - HIPAA
  - PCI
  - Other

Information & Data Privacy



# Information & Data Privacy

**2/3** say their organization has put a chief privacy officer or similar executive in charge of privacy.



Source: PwC, CIO and CSO, The Global State of Information Security® Survey 2018, October 18, 2017  
Base: 9,500 respondents

## Many businesses are still beginners at data-use governance

Only about half of respondents have put key measures in place

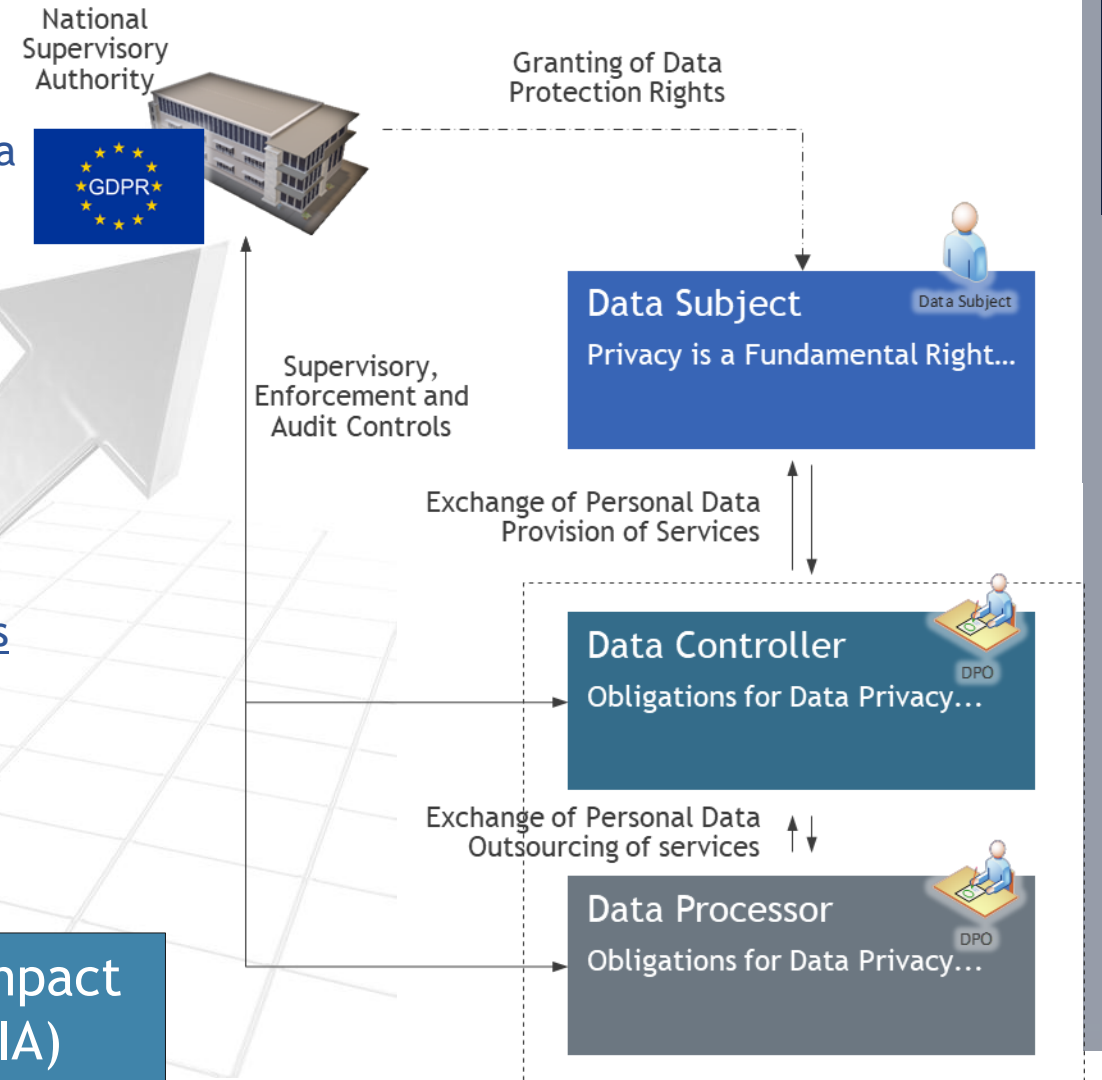


Source: PwC, CIO and CSO, The Global State of Information Security® Survey 2018.  
Base: 9,500 respondents

# EU General Data Protection Directive

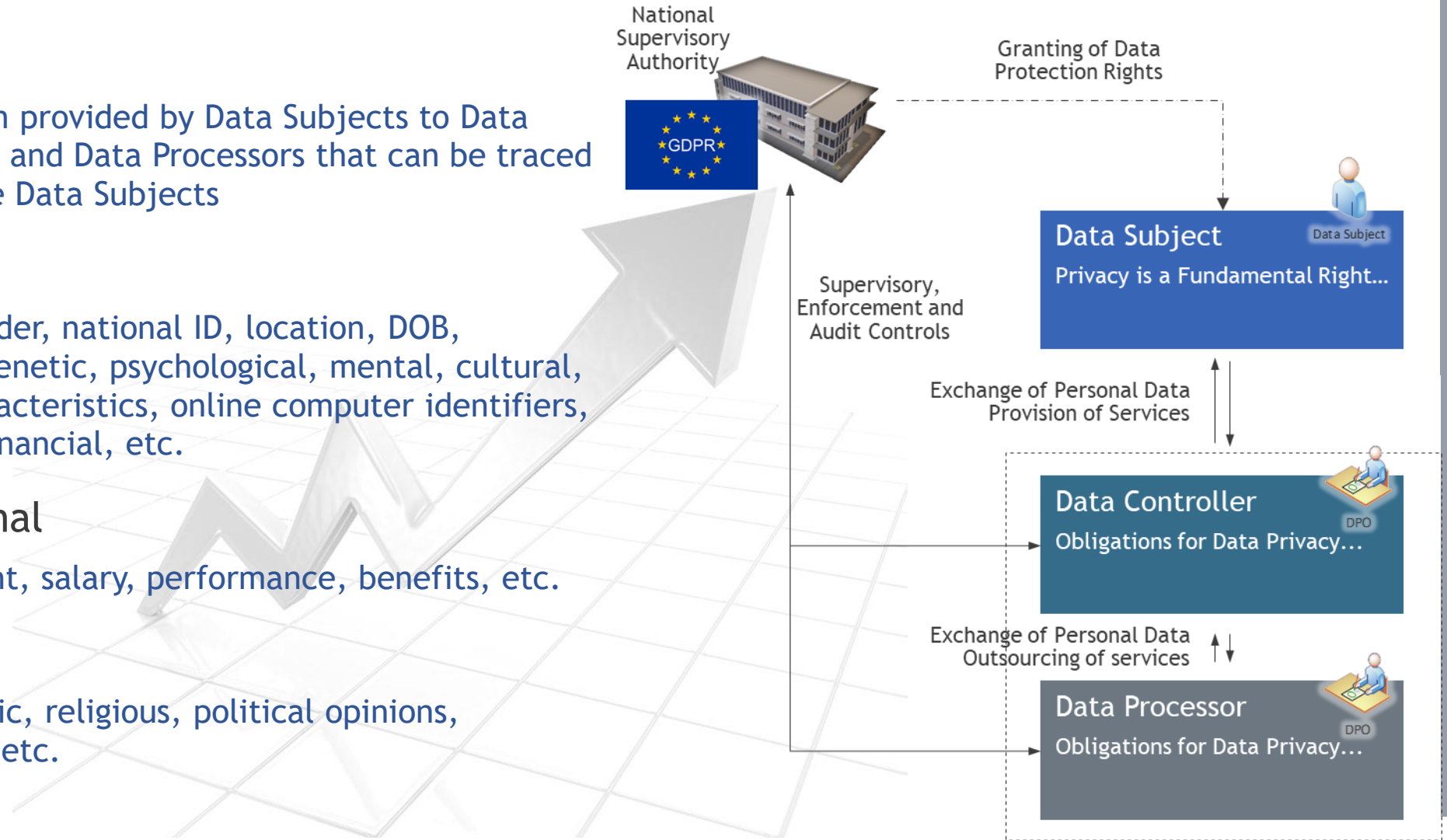
- What is it?
  - Directive from the European Union that unifies data protection laws in EU
  - Identifies and grants rights for Data Subjects
  - Enforces protection of their Personal Data
  - Expands territorial scope
    - Not limited to EU companies
- Who does it apply to?
  - Obligations on Data Controllers and Data Processors
  - Significant penalties for non-compliance
    - Up to 20 M€ (\$25 million) or 4% of global revenue
- When does it apply?
  - May 25th, 2018

Data Protection Impact Assessment (DPIA)



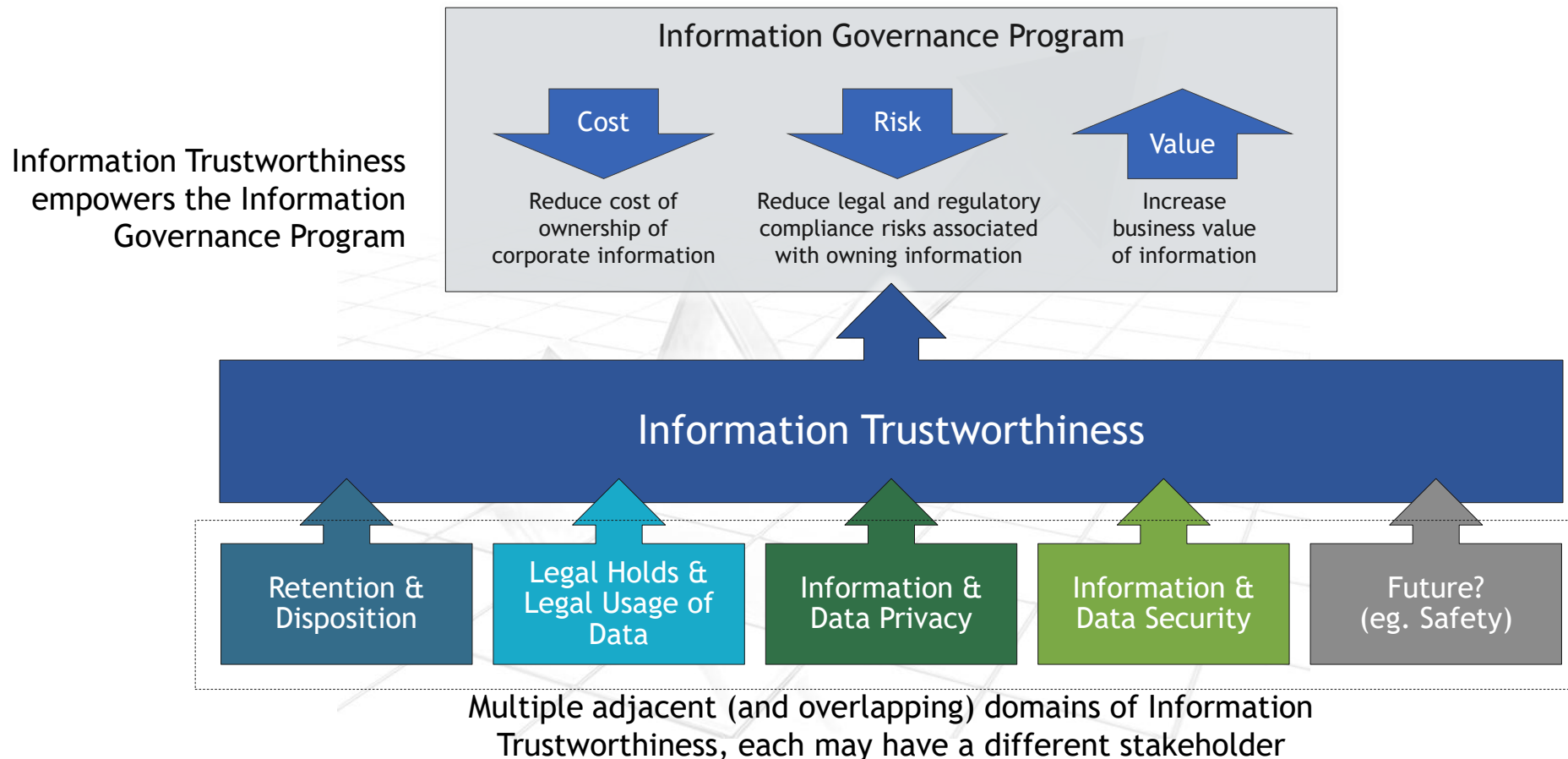
# Personal Data

- What is it?
  - Information provided by Data Subjects to Data Controllers and Data Processors that can be traced back to the Data Subjects
- Personal
  - Name, gender, national ID, location, DOB, physical, genetic, psychological, mental, cultural, social characteristics, online computer identifiers, medical, financial, etc.
- Organizational
  - Recruitment, salary, performance, benefits, etc.
- Other
  - Race, ethnic, religious, political opinions, biometric, etc.



# Information Trustworthiness

- Degree of confidence one has about an Information Asset that it meets the key corporate, legal, compliance and standards requirements

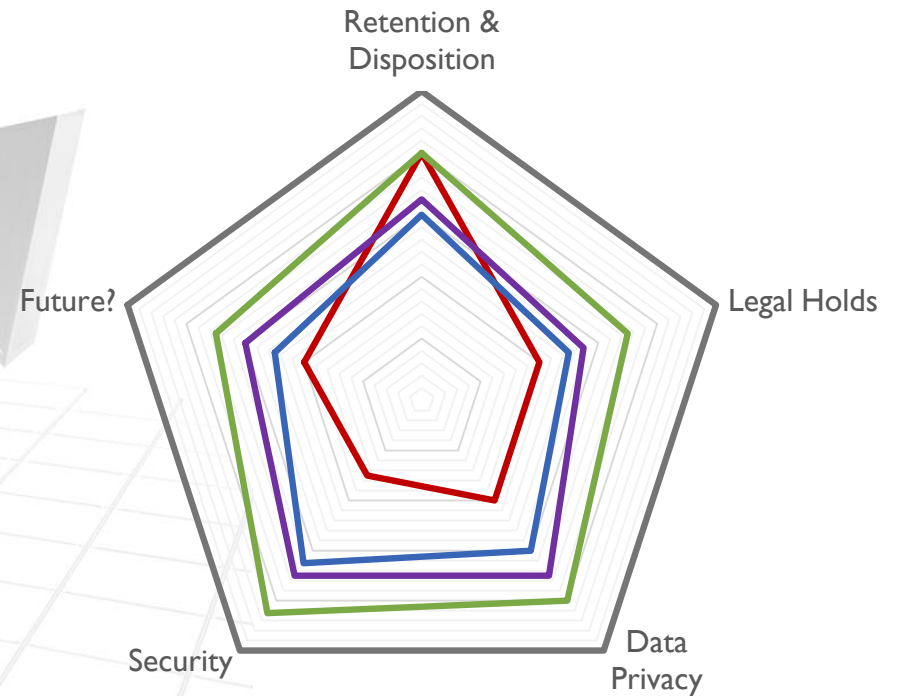


# Information Trustworthiness

## □ Each Domain can have multiple states

- A** Current State
  - Actual state as it exists now
- B** Minimum State
  - Non-negotiable minimum level
  - Mandated by requirements
    - Laws, regulations, industry standards, best practices, etc.
- C** Market State
  - State that is common with competitors (on-par) in same market industry
- D** Leader State
  - Target level of Trustworthiness to be a leader
  - Alignment with corporate vision, ROI, risk, etc.
- E** Maximum State
  - Highest level theoretically achievable
  - Justification to reach this state?

## Trustworthiness

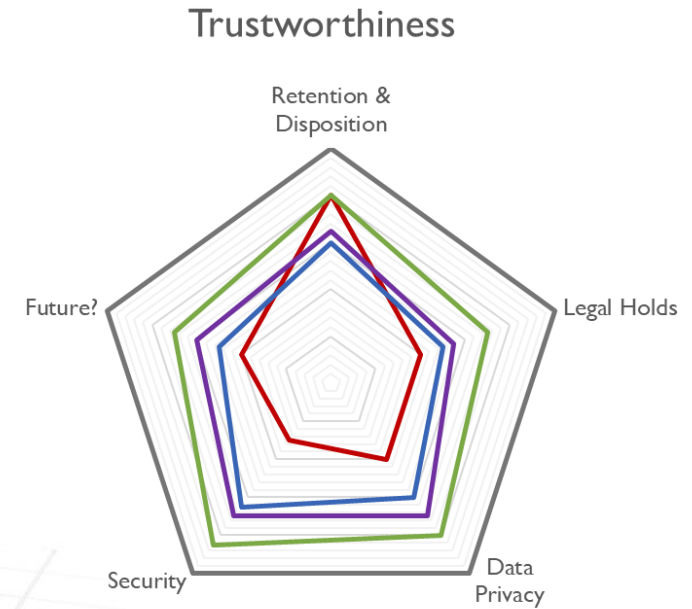


- A** Current State
- B** Min State
- C** Market State
- D** Leader State
- E** Max State

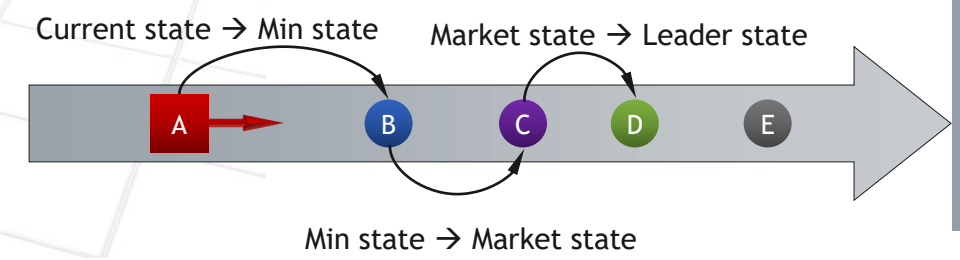


# IG Journey: Information Trustworthiness centric approach

- Define states for each Trustworthiness Domain
  - Current, Minimum, Market, Leader, Maximum
  - Define better outcome at end of each segment
- Determine interdependency of states across Domains
  - Does Privacy impact Legal Holds & eDiscovery Readiness?
  - Does Security impact Retention & Disposition processes?
  - Other
- Define Information Governance Journey
  - Define cost justification and ROI models
    - Is there really an ROI for **A** → **B** segment?
  - Define Trustworthiness by Design Requirements
  - Determine priorities
- Develop Trustworthiness Maturity Model
  - Progress of Current state towards other states
  - Track, measure, manage, adapt

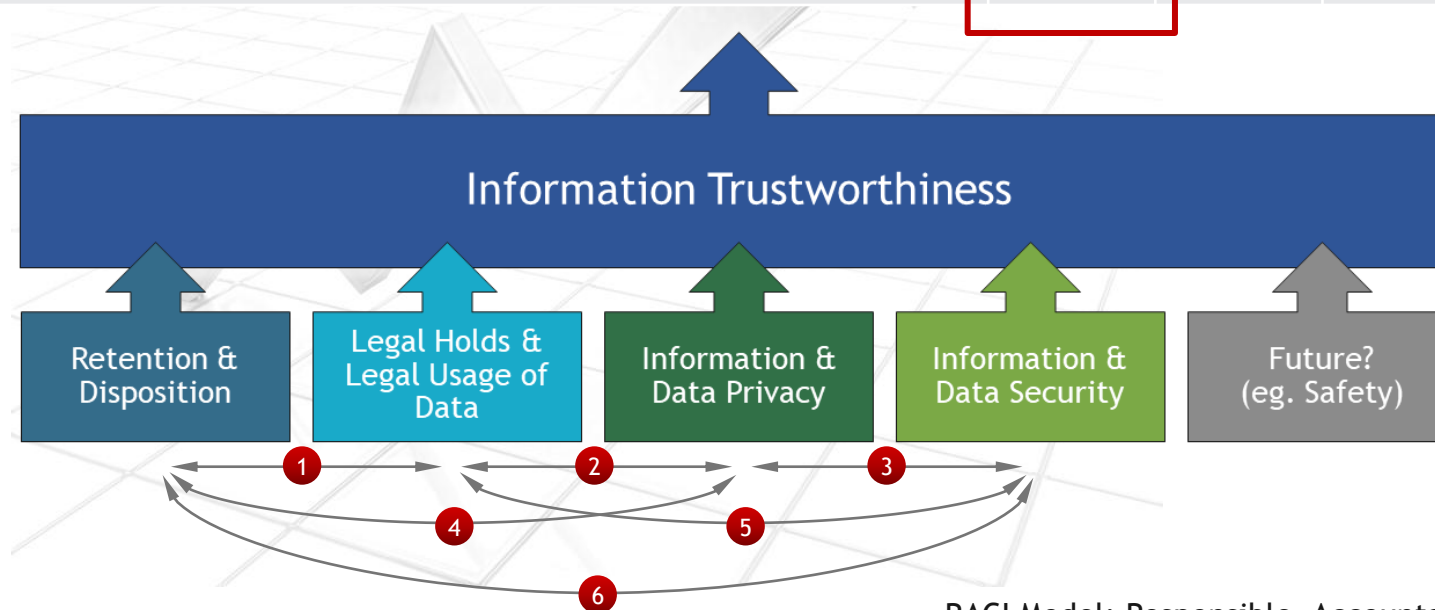


■ A - Current State    ● B - Min State    ● C - Market State  
● D - Leader State    ● E - Max State



# IG Journey: Information Trustworthiness centric approach

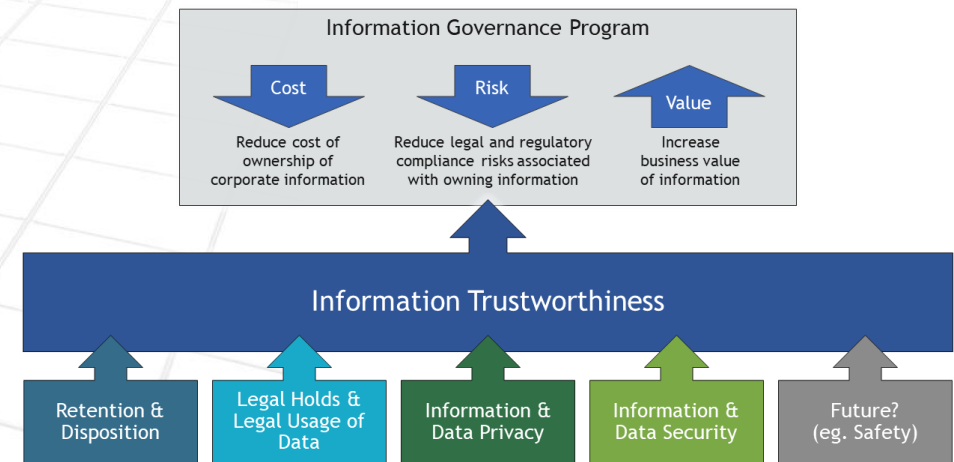
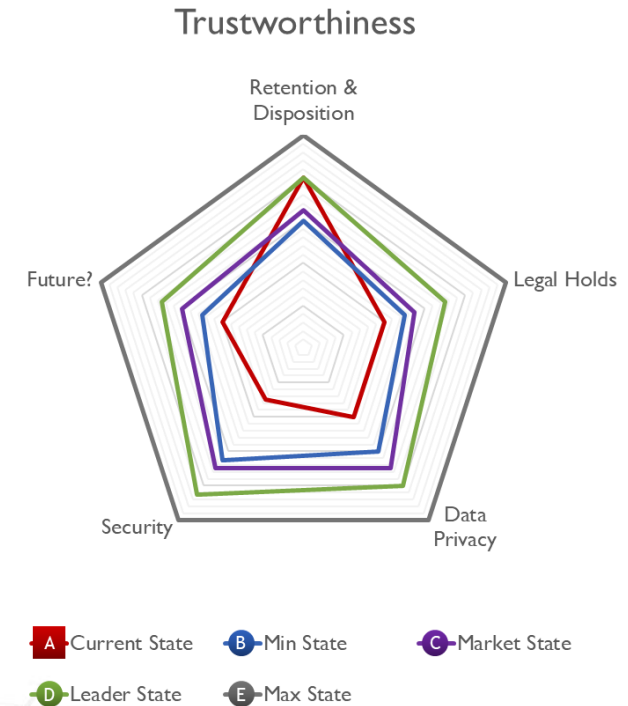
Activity	Description	RM	Legal	Privacy	Security	Other
1	Align RM Program and Retention Schedule with Legal requirements	RA	R	C	C	?
2	Align Legal requirements with Privacy requirements	C	RA	R	C	?
3	Align Security requirements with Privacy requirements	I	I	RA	R	?
4	Align RM Program and Retention Schedule with Privacy requirements	R	C	RA	R	?
5	Align Legal and Security requirements	I	R	C	RA	?
6	Align RM Program and Retention Schedule with Security requirements	RA	I	I	R	?



RACI Model: Responsible, Accountable, Consulted, Informed

# Summary

- Digital Transformation continuing unabated
  - Information Assets → lifeblood of organizations
  - Information Governance programs needed to govern these assets
  
- Internet of X evolution ... new challenges
  - New technologies: IoT, Blockchain, AI
  - New solutions: Smart Cities, Smart Factories, etc.
  - Growing overlapping concerns
    - Retention, legal, privacy, security, etc.
  
- Information Trustworthiness Framework
  - Empowers the Information Governance Program
  - Supports investment decision making
  - Maturity Model → track, measure, manage, adapt
  - RM has significant role to play



# Thank You...



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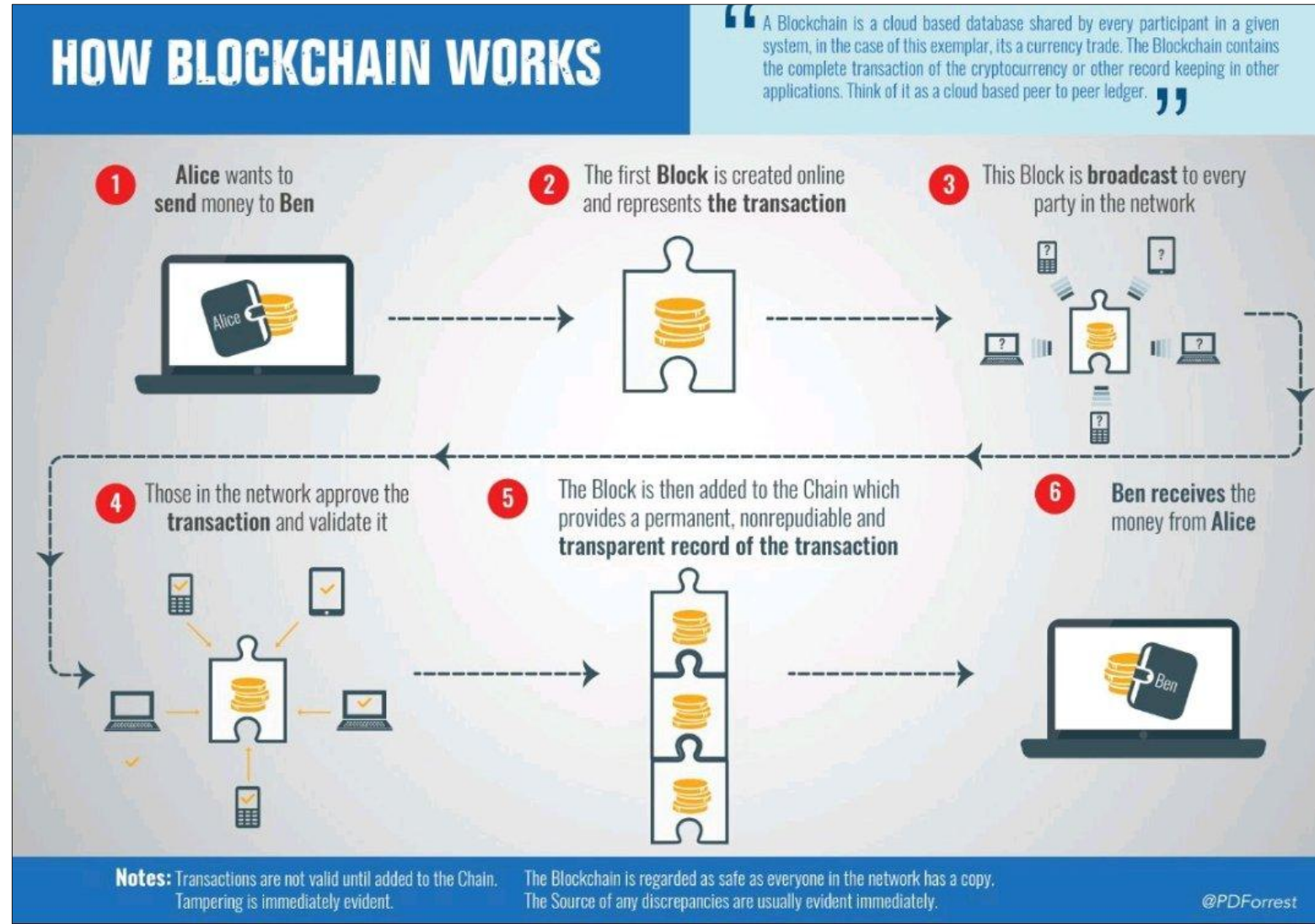
# Useful Twitter Hashtags



Category	Helpful Twitter Hashtags
Digital Transformation	#DigitalTransformation #RPA
Internet of Things	#IoT #IIoT #InternetofThings #SmartCities #Industry40 #4IR #DigitalTwins
Blockchain	#Blockchain #SmartContracts #FinTech #RegTech
Artificial Intelligence	#AI #ArtificialIntelligence #AutonomousCars #MachineLearning #ML
Privacy	#GDPR #PrivacybyDesign #PrivacybyDefault #DataPrivacy #HIPAA #PCI
Cybersecurity	#CyberSecurity



# Blockchain



# Data Protection Impact Assessment (DPIA)

- Effort led by Data Protection Officer
- Assess<sup>1</sup> risks to Personal Data in relation to affected types of data processes<sup>2</sup>
  - Origin
  - Nature
  - Particularity
  - Severity
- Identify methods for compliance requirements for protecting Personal Data
  - Identify minimum requirements
  - Consult with Supervisory Authority if necessary

1 Data Controllers and Data Processors  
2 New data processes, changes in data processes, and changes in scope of data

