The Compliant Data Comfort Zone

Digital Data, Security & Compliance As Enablers

Arthur van der Wees & Pieter Jansen
Data Economy
Who is responsible for:

1. Data?
2. Strategy?
3. Innovation?
Trusted Digital is a Need to Have, not a Nice to Have

Whether one likes it or not, technology changes the world in a fast pace, so better embrace it. Cloud computing, ecommerce, internet of things and data analytics are what organizations are talking about on a daily basis and are increasingly assessing the opportunities, benefits and risks. Technology makes innovation possible, and technology is a Need-to-Have in organizations, society and economy.

However, risk assessment, risk management, legal and other compliance frameworks have generally not caught up with technology.
It Boils Down to Four Main Dimensions
Continuity
Relevance
Engagement
Accepting Constant Change
How To Get to the Smart Data Zone? And Where to Start?
The Three T’s
1. Transparency
2. Trust
3. Transformation
Data Strategy
Data Segmentation
Data Classification
Integrated Data Architectures
Risks, Comfort & Trust in Digital Technology

The Four Main Blocking Factors for Using Digital Technology = The Main Enablers to Digital Economy & Society:

1. Insufficient knowledge
2. Security
3. (Personal) Data Protection
4. Compliance

Where technology & digital used to be relatively a fairly low regulated horizontal, as it is now considered to be a Need-to-Have, it will become highly regulated in the very near future.
Legal relationship by law

Contractual relationship
Balancing Out Allocation of Risk, Liability & Trust
Main Challenges

Common Understanding
Trust
Security
Safety
Personal Data Protection
Data Management
Data Control, Access & Right Management
Free Flow of Data & Data Portability
Identity & Authentication Management
Accountability & Liability
People, Process, Technology & Knowledge
Human-Centric Organisations & Systems
## Start with Common Understanding: Definitions

### Data is not a four letter word

| Data | Data of any form, nature or structure, that can be created, uploaded, inserted in, collected or derived from or with cloud services and/or cloud computing, including without limitation proprietary and non-proprietary data, confidential and non-confidential data, non-personal and personal data, as well as other human readable or machine readable data. |

**EC Cloud Service Level Agreement Standardisation Guidelines**

3D approach | Multi-story of connected data types | Classified data |
Sensitive data | Personal data | Derived data | Proprietary data | IPR |
Encrypted data, with or without Tokenization | Distributed Data

Every (sub)category of data needs to be addressed separately
Data Travels
Linear Supply Chain Thinking

#Cross-verticals #Cross-cutting markets #Are banks or other industry a still vertical?

Relations between the developers, vendors, consumers and other stakeholders of the digital economy and society (including but not limited to Internet of Things enabled devices, systems and services) are non-linear.

Together, they form a vast multi-dimensional web that can be called a supply value ecosystem. Each party and relation within this multi-dimensional web is relevant and necessary for the design, engineering, manufacturing, deploying and functioning of both a connected device, system and service, as well as hyper-connected (IoT) ones.
Human-Centric Technology, Thriving Ecosystems & Multi-Angled Stakeholders & Influencers

1. The **User** (Convenience-Focused, Cheap, Curious, Creative, Ignorant)
2. **Customers** Who Are Willing To Pay (B2x, x2x)
3. **Suppliers & Value Ecosystem** (Secure In, Secure Inside, Secure Out)
4. Thriving **Ecosystems & Society**
5. **Malicious Actors**
6. Act First Seek Forgiveness Later **Data Brokers**
7. **Policy Makers**, **Standardisation** Development Orgs & Markets
8. **Authorities** (Who is responsible for what, and are they capable?)
9. **Data Access**: Law Enforcement & Intelligence Services
Contextuality
Data Control
Data Access
Use & DRM
Cybersecurity & Data Protection

The average cost of a business data breach increased 23 % over the past two years to USD 3.79 million.

Ponemon Institute

92% of devices accessing the web are running on outdated software with known vulnerabilities.

TheRegister.co.uk

60% of SMEs who experience a data breach go out of business within 6 months.

Experian.com

“I don’t know...
Our IT takes care of data security…”
- Famous last words
Cybersecurity Virus attack

- Spreads automatically through Microsoft vulnerability
- Doubled in size every 8 minutes
- Abused servers and IoT-devices
- Largest attack ever
- When was this?
Cyber Kill Chain

1. Reconnaissance
   - Harvesting email addresses, conference information, etc.

2. Weaponization
   - Coupling exploit with backdoor into deliverable payload

3. Delivery
   - Delivering weaponized bundle to the victims via email, web, USB, etc.

4. Exploitation
   - Exploiting a vulnerability to execute code on victim’s system

5. Installation
   - Installing malware on the asset

6. Command & Control (C2)
   - Command channel for remote manipulation of victim

7. Actions on Objectives
   - With ‘Hands on Keyboard’ access, intruders accomplish their original goals
Advanced Persistent Threat
Advanced Persistent Threat
The Web, Deep Web & Dark Web

- **Surface Web**
  - Yahoo!
  - Google

- **Deep Web**
  - Academic databases
  - Medical records
  - Financial records
  - Legal documents
  - Some scientific reports
  - Some government reports
  - Subscription-only information
  - Some organization-specific repositories

- **Dark Web**
  - TOR
  - Political protest
  - Drug trafficking and other illegal activities

96% of content on the Web (estimated)
The Web, Deep Web & Dark Web

Search Results [Save Search]

  - Item #: 356965 - Other / Other - PANDORAS-DropBox (551)
  - Views: 606 / Bids: Fixed price
  - Quantity left: Unlimited (33 automatic items)
  - Buy price: USD 6.99 (0.0009 BTC)

- [MS] Voice changer [Great for fraud or prank calls]
  - Item #: 98175 - Security Software / Security Software - 26 days left - DarkNetSoftware (14662)
  - Views: 39743 / Bids: Fixed price
  - Quantity left: Unlimited (294 automatic items)
  - Buy price: USD 1.89 (0.0009 BTC)

  - Item #: 295451 - Security Software / Security Software - TomList (20754)
  - Views: 3050 / Bids: Fixed price
  - Quantity left: Unlimited (29 automatic items)
  - Buy price: USD 0.60 (0.0009 BTC)

- [MS] BITCOIN STEALER>>> Start Stealing Bitcoin, Easy Setup 100% Guaranteed!!! PM ME for free gift.
  - Item #: 236121 - Botnets & Malware / Botnets & Malware - opatm01 (11626)
  - Views: 23675 / Bids: Fixed price
  - Quantity left: Unlimited (221 automatic items)
  - Buy price: USD 0.60 (0.0009 BTC)

- [MS] JAN 2017 Professional Carding Software SALE
  - Item #: 344764 - Other / Other - Deity (14035)
  - Views: 1665 / Bids: Fixed price
  - Quantity left: Unlimited (7 automatic items)
  - Buy price: USD 0.60 (0.0009 BTC)

- [MS] FE 100% ★★★SPECIAL★DIRECT RELEASE★★BIG SALE 50 PILLS★★★OxyCodone 20MG OC OxyContin MUNDIPharma-Oxycodeone 20mg★★★
  - Item #: 101114 - Prescription / Prescription - Amsterdam.CashOx (1298)
  - Views: 1986 / Bids: Fixed price
  - Quantity left: Unlimited

- [MS] 4 x 100 mg Kamagra pill || Generic Viagra || Official Medication
  - Item #: 29455 - Prescription / Prescription - Dutchdrug (2379)
  - Views: 1180 / Bids: Fixed price
  - Quantity left: Unlimited

- [MS] 25 Blister Kamagra 100mg 100 pills total (viagra)
  - Item #: 30896 - Prescription / Prescription - Dutch-supplies (417)
  - Views: 1056 / Bids: Fixed price
  - Quantity left: Unlimited

- [MS] 10 pill*** (10mg) Ritalin / Ritaline / Methylphenidate Mylan (SAMPLE)
  - Item #: 11787 - Prescription / Prescription - 54 days left - PatrickDeWild (166)
  - Views: 2720 / Bids: Fixed price
  - Quantity left: Unlimited
Defining the attacksurface
Phishing for profit

PORTBASE

PORT COMMUNITY SYSTEM (PCS)
Defining the State of the Art
Security & Privacy are a Solution, not a Problem
Can You Retrofit Security, Privacy & Compliance?
The Network and Information Security Directive

Objectives

- Improvement of national security capabilities
- Improvement of national, public & private cooperation
- Adoption of Risk Management Practices in critical sectors
- Reporting of major incidents to the national authorities

Benefits

- More trust in web & e-services for citizens/consumers
- More reliable digital networks/infrastructure for Governments & Businesses
- More reliable services, more equal & stable conditions for the EU economy

Want to take part?
Shape EU Cybersecurity practices on the NIS Platform

Current Local + NIS Directive June 2018 + GDPR 25 May 2018

Data Breach Notification Tsunami?
Data Breach Notification Act NL (as per 1 January 2016)

Availability breach (lost data)?
- Yes
- No
  - No obligation to notify DPA

Integrity breach (altered data)?
- Yes
- No
  - No obligation to notify DPA

Confidentiality breach (data disclosure / data access)?
- Yes
- No
  - No obligation to notify DPA

Personal data?
- Yes
- No
  - No obligation to notify DPA

Does the breach adversely affect the data or privacy of the Data Subject?
- Yes
- No
  - No obligation to notify DPA

Sensitive personal data?
- Yes
- No

Serious unfavourable consequences?
- Yes
- No

Properly Encrypted?
- Yes
- No

Obligation to notify DPA, but not to the Data Subject

Obligation to NOTIFY the breach to the Dutch DPA + (!) each Data Subject

Sensitive personal data?
- Yes
- No

Serious unfavourable consequences?
- Yes
- No

Properly Encrypted?
- Yes
- No

Obligation to notify DPA, but not to the Data Subject

Obligation to NOTIFY the breach to the Dutch DPA + (!) each Data Subject
7 Phases of the (Personal) Data Life Cycle

1. Obtain / Collect
2. Create / Derive
3. Use
4. Store
5. Share / Disclose
6. Archive
7. Destroy / Delete

Most PII* comes out of Phase 1 & 2

BUT

Personal Data is created & processed in any and each phase

Which phase(s) are we talking about? PII* + Actor + Legal Basis + Purpose(s)

* PII: personal identified or identifiable information
Example of Data Relation Flows
between Personal Data, Actors, Legal Grounds & Purpose
First four (4) Steps of Processing Personal Data (Example)

Personal Data
- Address
- Customer number
- Access Data
- Behaviour

Actors
- Actor 1
- Actor 2

Legal Basis
- A. Informed & Unambiguous Consent
- B. Execution of a Contractual Relationship
- C. Mandatory Obligation
- D. Required per material reason data subject
- E. Providing a public task/service

Legitimate Purpose
- Provision of Services
- Registration of Customer
- Responding to Questions
- Improving the Product/Services
- Personal Offering or Advert
- Information Security

Example of Data Relation Flows: Example of Data Relation Flows between Personal Data, Actors, Legal Grounds & Purpose. First four (4) Steps of Processing Personal Data (Example).
Connected Devices & Tick The Box:
Additional Unmanaged Risk

Shadow IT +
Shadow Websites +
Shadow Cloud +
Shadow IoT +

= Pandora’s Box of Data Management
Stand-Alone
vs
Hyper-Connectivity
Beyond Singularity: Multiplicity

Internet of Everything & Everybody = Internet for Human Prosperity

Multiplicity:

Symbiotic combination of diverse groups of people work together with diverse groups of machines and algorithms to identify, address, solve problems, make decisions and executes and monitors those decisions.
The Co-Creation Cycle of Reason

- Functionality, Interface & UI
- Sustainable & Economic Feasibility
- Compliance Updatability & Durability
- Data Right Management & Analytics
- (Personal) Data Control & Protection
- Identity & Access
- Security

Multi-Angled x-by-Design Development

Repeat
Multi-Layered, Cross-Cutting, Interdisciplinary, Integrated Architecture

Usability, Transparency, Trust, Control & Compliance Inside = Success By Design

Multi-Layered Cross-Cutting Interdisciplinary Integrated Architecture

Functionality, Interface & UI
Security & Safety
Identity & Access
(Personal) Data Protection
Data Right Management & Analytics
Sustainability & Economic Feasibility
Data, Algorithms & Computing, Security, Privacy, Compliance & Interdisciplinary Co-Creation are: Enablers to Shape Your Future
Hyper-connect!

I AM THE LEFT BRAIN
Decisive! Logic
Accurate Analytic
Reason Strategic Control
Science Realistic

I AM THE RIGHT BRAIN!
Intuition Love Art Poetry
Passion Freedom
Creative Yearning Peace
Arthur’s Legal Vision & Mission

Navigator

Enabler

Facilitator
Arthur’s Legal: Arthur’s Legal is a global tech law firm by design. Arthur’s Legal is founded in 2001 and since its incorporation provides integrated full services, and mainly focuses on local and global private and public organizations that are active as customer, user, vendor, integrator, consultant, legislator or policy maker in the fields of IT, licensing, cloud computing, internet of things, data analytics, cybersecurity, robotics, distributed ledger (block chain) technology and artificial intelligence. Arthur’s Legal is also a leading deal making expert; it has already structured and negotiated out more than 5,000 major technology and related deals with and for global Fortune companies as well as other major organizations in the public and private sector worldwide.

Global Digital Strategy: The counsels of Arthur’s Legal are legal experts, strategists, technologists, standardization specialists and frequent speakers worldwide, with in-depth experience and are well-connected in the world of technology, innovation, data, digital, cybersecurity, (personal) data protection, innovation, standardization & global business. On these topics, its managing director Arthur van der Wees LLM is expert advisor to the European Commission, Dutch government as well as other public and private sector organizations and institutes worldwide.

Trust, Digital Data, Cybersecurity, Cloud (Edge) Computing & Internet of Things:
Arthur’s Legal is Founding Member of European Commission’s (EC) Alliance of IoT Innovation (AIOTI), Co-Chair of AIOTI WG4 (Policy), Project Leader of both the AIOTI Security in IoT and Privacy in IoT taskforces, co-author of EC’s Cloud SLA Standardisation Guidelines, co-author of Cloud Security Alliance’s Privacy Level Agreement (PLA) 2.0, co-contributor to ISO standards such as ISO/IEC 19086 (Cloud Computing), and co-author of the IERC Handbook: Digitising the Industry, Internet of Things Connecting the Physical, Digital and Virtual Worlds. Arthur’s Legal is co-founder of the Cyberchess Institute that landscapes the real-life cybersecurity arena, CloudQuadrants on the maturity of cloud offerings, the Cyber Trust Institute that sets trust trajectories and orbital requirements and parameters for technology-as-a-service, the Institute for Next Generation Compliance that promotes the restructuring and automation of compliance and related procurement. Furthermore, Arthur’s Legal is EC H2020 project IoT CREATE consortium partner and activity group leader on trust, security, privacy, legal and compliance topics in IoT in five EU large scale pilots on smart healthcare, smart cities, wearables, smart farming, food safety and autonomous vehicles with EUR 250M of accrued EC and other funding. Together with IDC Arthur’s Legal is also doing research for the Commission on data portability & application portability.

Connected & Hyper-connected: Arthur’s Legal has an unique interdisciplinary 3D-angle & x-by-design approach, connecting vital topics such as usability, security, data management, (personal) data protection, compliance with technology, infrastructure, architecture and global standardization thereof, with the capability and ability to connect those components in hyper-connected ecosystems much earlier (read: pro-active, preventative) than the traditional policy-making, legal and compliance practice does. For upcoming events, key notes and other activities, please check out website, stay up to date via its social media channels, or contact us.

www.arthurslegal.com | vanderwees@arthurslegal.com
Arthur’s Legal’s Ecosystems:

Handpicked Experts + Ability to Execute + Algorithms = Interdisciplinary & Customized Services & Systems


Digital Technology changes the World at a fast pace

Yet, Humans are underrated. Build, Enhance & Retain Trust with the combination of Human Brain Power, Purpose & Passion, and Machines, Algorithms & APIs.

The Multiplicity Approach

Symbiotic combination of diverse groups of people that work together with diverse groups of machines and algorithms to identify, address & solve problems, and make & execute decisions.
### Welcome to AIOTI

**ALLIANCE FOR INTERNET OF THINGS INNOVATION**

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**Global Leading IoT Alliance**

Forbes
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