

# Acronis®

NEW GENERATION DATA PROTECTION



Blockchain Meetup

# Blockchain and Acronis

John ZANNI, CEO Acronis SCS & President Acronis International

# Acronis – Global Company

## World Leader in Cyber Protection



Founded in Singapore  
by a Singaporean  
in 2003



Established 2<sup>nd</sup> HQ in  
Switzerland for the global  
expansion in 2008



Acronis SCS  
40+ employees exclusively  
serving the U.S. market

**1,000+ employees • 50,000+ partners • 500,000+ businesses**  
**5,000,000+ prosumers in 150+ countries**



# Acronis has Solutions for Every Customer and Company

46%

of Fortune  
250

70%

of Fortune  
Top 10

75%

of Tech Fortune's  
Top 20

60%

of Healthcare  
Top 20

79%

of Top 100 Most  
Valuable Brands

AMERICAS 200,000+ customers



EUROPE 200,000+ customers



Deutsche Bank



The Chemical Company

APJ / MEA 100,000+ customers



Empowered by Innovation



NUS  
National University of Singapore



# Digital Landscape

## Complete Reliance on Data

The world is becoming increasingly digital

Businesses are driven by data

Personal lives depend on data

Medicine

Communication

Public services

Travel

## Enterprise challenges

Data is everywhere

Local, cloud, physical, virtual, mobile

Decentralized systems

## Threats to data

Accidental data loss

Hardware failures

Phishing

Pharming

Malware

Ransomware

Email scam

Hacking





# 5 Vectors of Cyber Protection



Safety



Accessibility



Privacy



Authenticity



Security

**Data PROTECTION**

**CYBER Security**

**CYBER PROTECTION**



# Unique Innovations



## Privacy

**Hybrid Cloud Architecture:**  
any source, any data, any destination – on-premises, private datacenter, service provider or public cloud



## Authenticity

**Blockchain-based digital Notary:**  
data certification, time stamping and validation using an immutable distributed blockchain.



## Security

**AI-based protection:**  
active detection and prevention of ransomware attacks, vulnerability assessment, and security configuration.

## Advanced applications of Artificial Intelligence

1. Predictive security

2. Automatic data organization

3. Semantic search

4. Storage tiering

5. Automated compliance

6. Automated configuration



# Acronis approach to Blockchain use

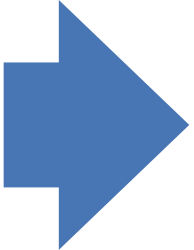
- 1. Solving a legitimate technical problem: ensuring immutability of existing digital objects
- 2. Validity of certification is based on existing public Blockchains – making Blockchain essential to the product
- 3. Solving scalability and efficiency problems outside of Blockchain
- 4. Building solution that Acronis partners and customers can easily use in practice

## Blockchain

Is an append-only database with transaction order with the following data protection properties:

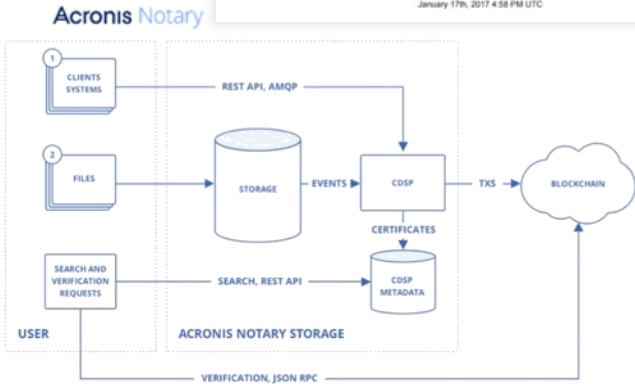
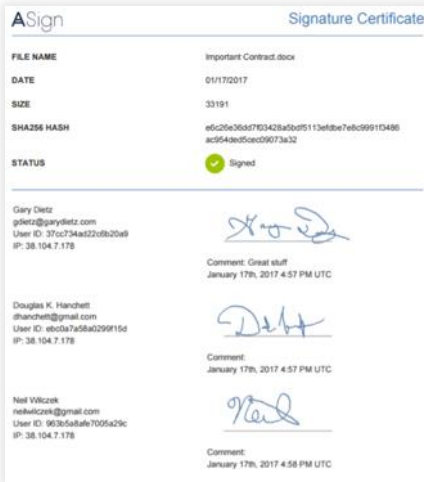
- Immutable data storage
- Secure time-stamping
- Public audit

But it is unpractical to store big chunks of data in a blockchain

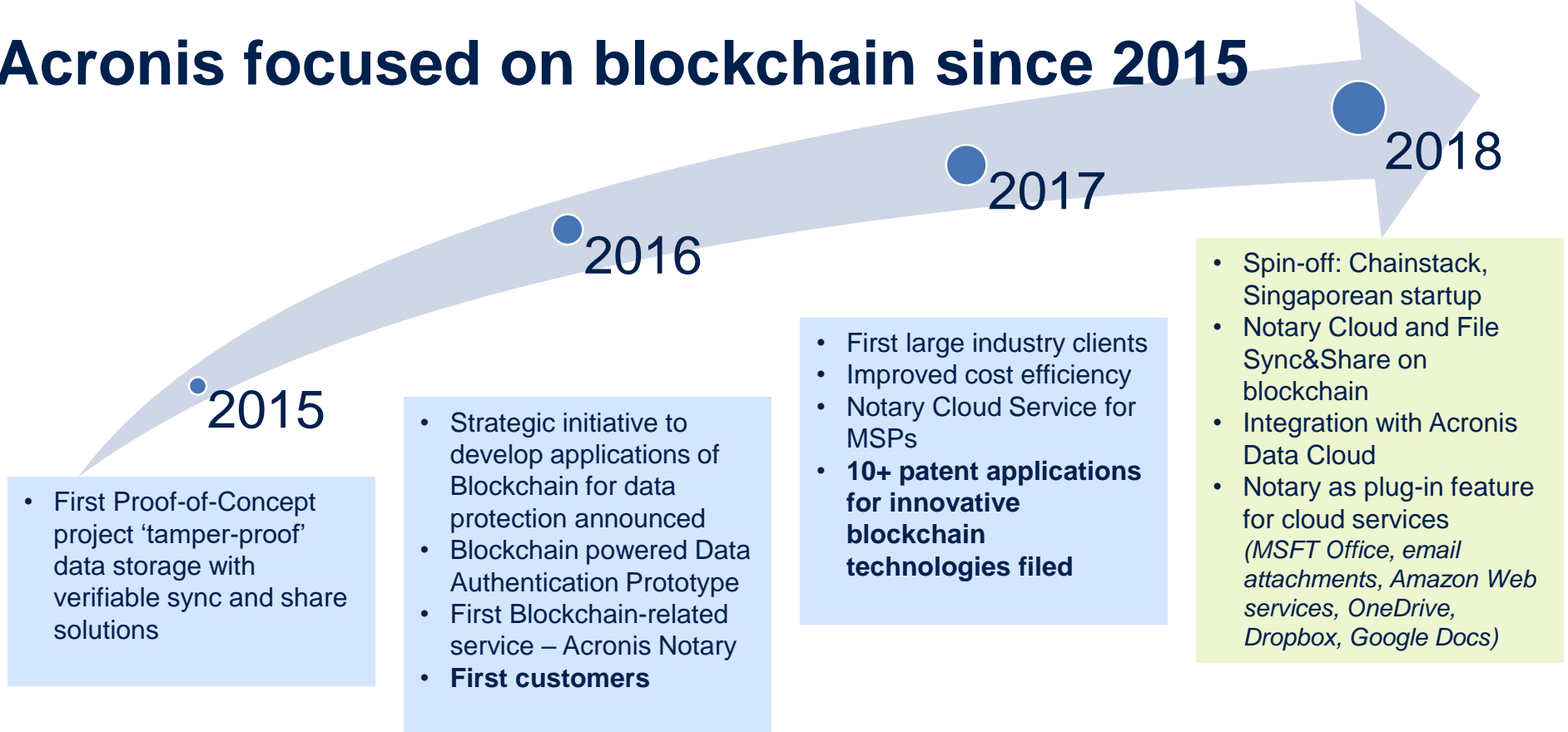


## Acronis

- Provides high throughput solutions to store and exchange significant volumes of data in secure and verifiable manner
- Where anti-tampering and verification is ensured by the blockchain algorithm

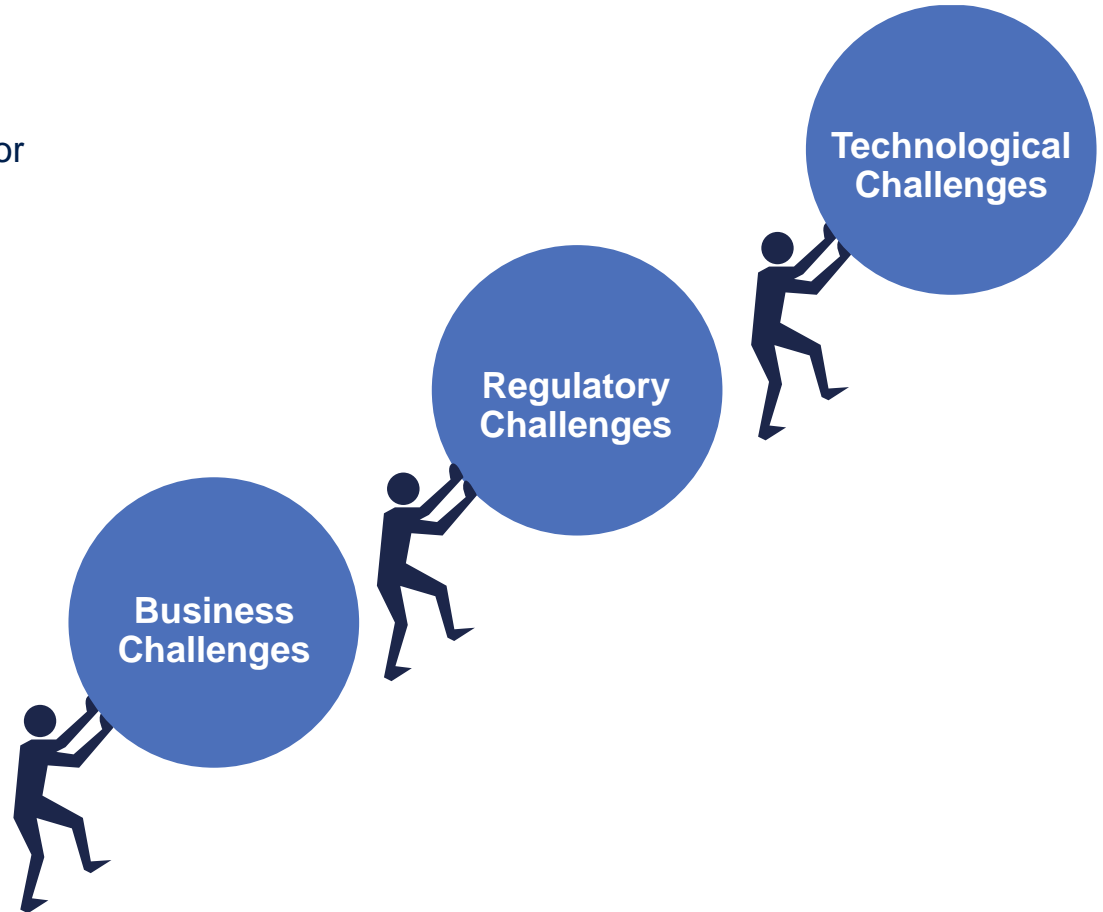


# Acronis focused on blockchain since 2015



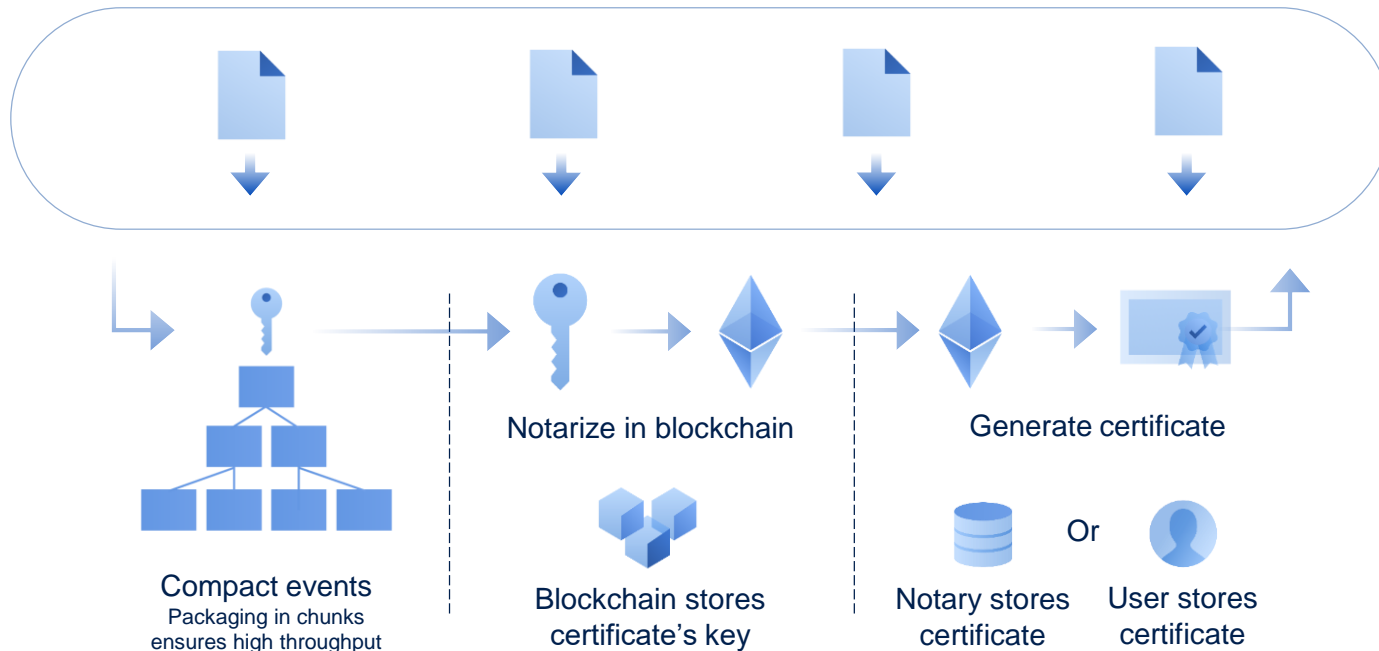
# Barriers to blockchain adoption

- Fast growth creates challenges for long government decision making cycle, and for figuring out the value from adoption
- Not all government processes are/can be decentralized
- Technology limitations are important:
  - **Security** (“51% attack”, sensitive information), and privacy questions
  - **Scalability** (Every participating node to verify transaction)
  - **Performance** (e.g. Bitcoin: only a few transactions per second)



# Authenticity: Blockchain-based data certification

More than **6.5 million** files are notarized with blockchain products every month



# Case Study: Acronis Notary and Log Audit

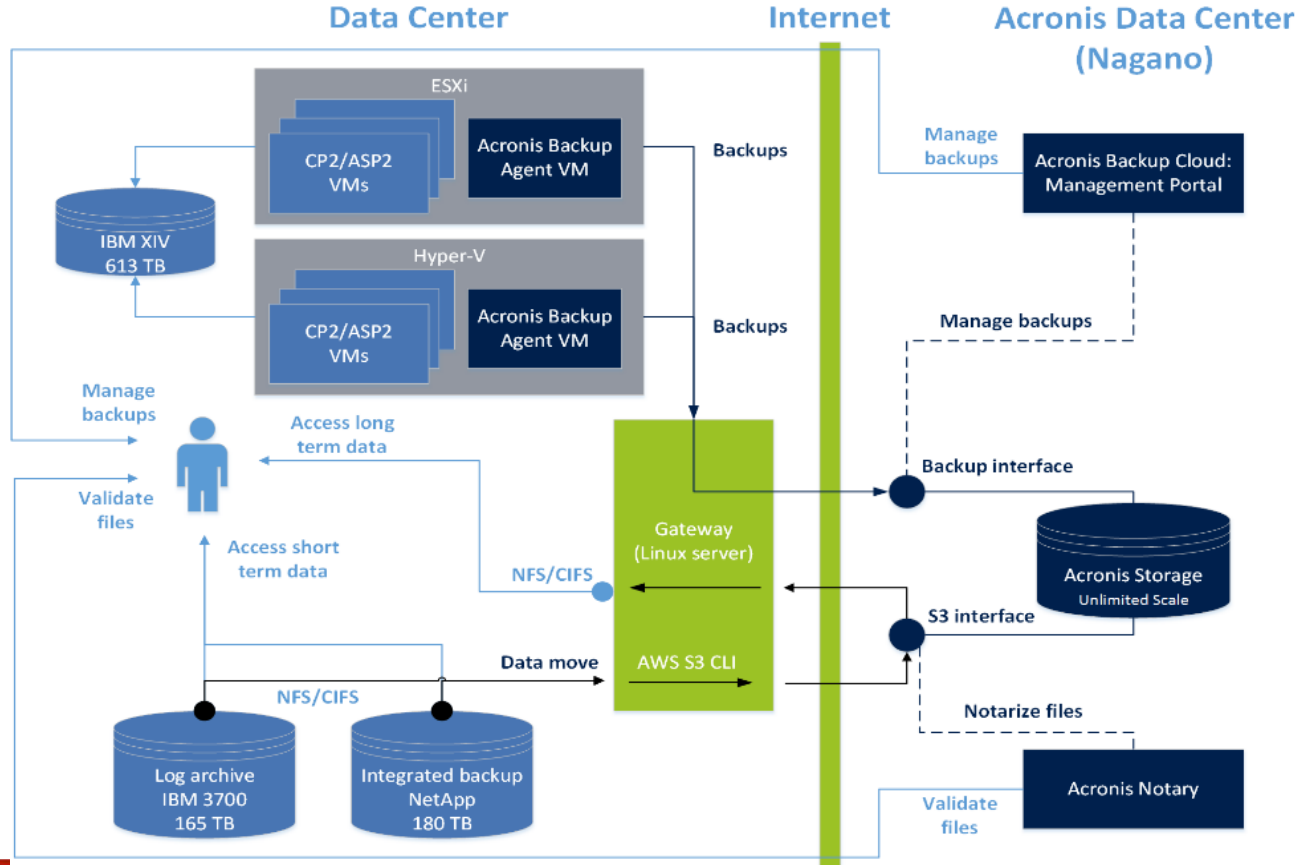
Log data is a subject to security and retention policies, as well as compliance mandates

Log data often contains sensitive data

Protection of log data – both in transit to the log collection solution and when – an important concern

**Log data must be strictly controlled and never altered**

# Case Study



# Acronis Notary Cloud

A **blockchain-based service** for file notarization, e-signing and data verification for businesses of any size. Acronis Notary Cloud creates a unique digital fingerprint for files and stores it in a public blockchain ledger, enabling independent validation of a file's authenticity and existence at a specified date and time.

Allows to:

- **Ensure the integrity of business-critical data**  
Eliminates the need for third parties to guarantee the immutability of data.
- **Achieve greater regulatory transparency**  
Reduces the cost and time necessary to conduct an audit.
- **Reduce the risks to data's security**  
Adds an extra layer of protection that is powered by a mathematical proof.

The screenshot displays the Acronis Data Cloud interface. On the left, a navigation menu includes 'NOTARIZED FILES', 'SIGNED FILES', 'API KEYS', and 'VERIFICATION'. The main area shows a list of 'Notarized files' with columns for Name, Date, and Status. A 'Create new customer' dialog box is open, showing a 'Notary' configuration section with options for 'Notary storage', 'Notarizations', and 'eSignatures', all set to 'Unlimited'. A 'Notarization Certification' certificate is also shown, featuring a circular seal and text: 'NOTARIZATION CERTIFICATION', 'This is to certify that the dataset or file referred to hereunder was notarized at the date and time printed below, through the creation of a self-authenticating digital record using blockchain technology', and fields for NAME (Contract\_01.pdf), DATE & TIME (22 May 2018 12:04 PM), and SIGNEE (Acronis Notary).

Ensure data is authentic and unchanged using blockchain technology



# Easy to Use Solution to Gain Advantages of Blockchain Technology



## Notarization Service

Lets users notarize files of any type and record it in the blockchain ledger



## E-signature Service

Enables all required parties to electronically sign files



## Verification Service

Once a file is notarized, allows confirmation from any device, at any time

**Any Industry. Any Document. Any File.**





# Beta 2: New in Acronis Notary Cloud

## More options for custom branding

Thanks to the new options for custom branding now it is possible to fully customize the service including its logo, URLs, color scheme and “buy” button.

## Hard quotas

Acronis Notary Cloud incorporates the ability to set hard quotas for the clients. This feature allows service providers to flexibly adjust licensing and pricing according to business needs.

## Management at unit tenant level

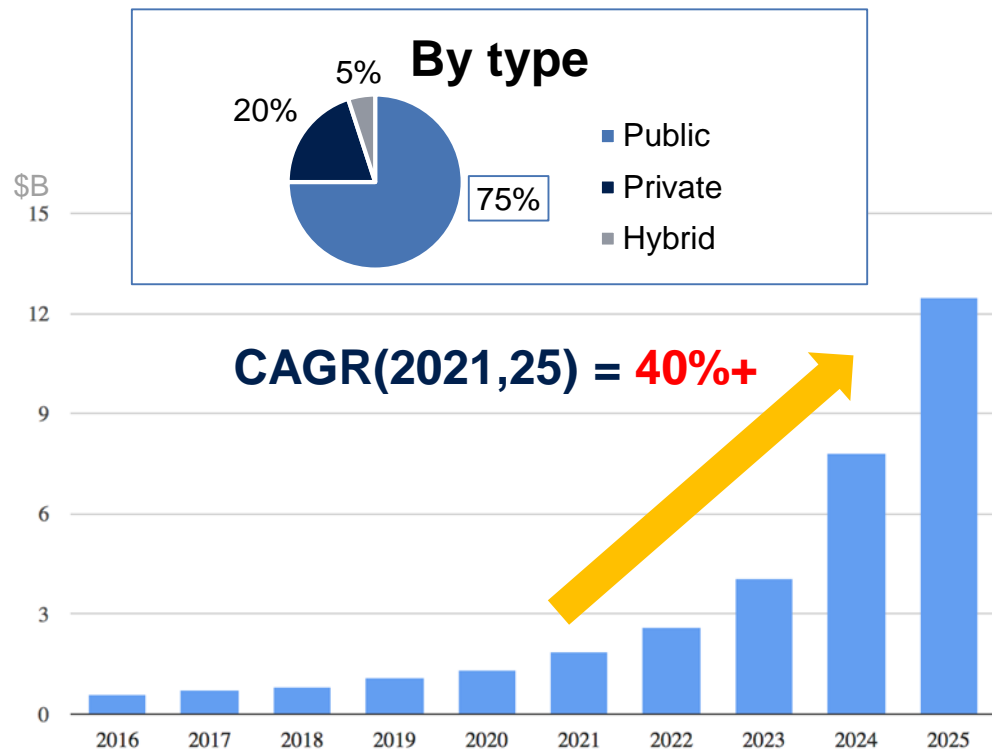
Now it is possible to manage the service at the unit tenant level. This feature is very useful for companies with many divisions and regional offices distributed around the globe.

The screenshot displays the Acronis Notary Cloud interface. On the left, a sidebar menu includes 'MY COMPANY NOTARY', 'NOTARIZED FILES', 'SIGNED FILES', 'API KEYS', and 'VERIFICATION'. The main content area is titled 'Notarized files' and features a dropdown menu for 'All statuses' and a list of files including 'Doc 1.pptx', 'DMC678530.png', 'DMC6785322.png', and 'Doc 1.pptx'. A 'Notarization certificate' section shows a 'Transaction ID' of '0x566baf5308bc180795fc0616e'. A 'Quota exceeded' notification is overlaid on the interface, showing 'Notary storage' at '5.00 GB / 5.00 GB' and 'Notarizations via web interface' at '150 / 150'. The notification includes 'Close' and 'Buy more' buttons.

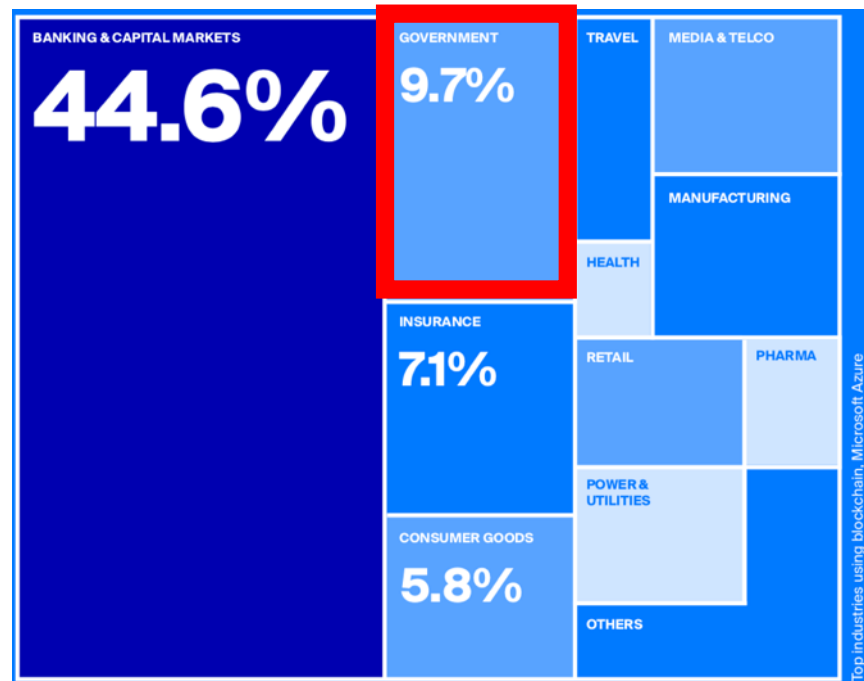


# Blockchain market momentum

## Global blockchain market, 2016-25



## Government is #2 blockchain market



<https://www.acronis.com/en-us/articles/blockchain/>



# Gov agencies in 10+ countries are examining blockchain



## Most active public service use

1. Digital currency/payments
2. Land registration
3. Voting (elections)
4. Identity management
5. Supply chain traceability
6. Health care
7. Voting (proxy)
8. Corporate registration
9. Entitlements management

\*Measured by observing the number of public sector blockchain experiments planned, in progress, or stalled globally

# Blockchain has broad range of applications beyond bitcoin

## **Automotive**

*Track history of vehicle from pre-production to sale*

## **Charity/Donation**

*Track donation lifecycle, Reduce overheads*

## **Credit History**

*Transparency and accuracy of reporting*

## **Education**

*Verification of academic credentials*

## **Real Estate**

*Trusted ownership, transfers agreement  
Reduce transaction costs*

## **IoT Data Security**

*Distributed time-stamped data records of IoT ecosystems*

## **Transport**

*Transparent tracking Car Sharing and public transport*

## **Media**

*IP rights control  
Smart Contracts for artist compensation*

## **Government & Voting**

*Trusted audit  
Transparent voting  
Accountability  
Regulatory compliance mgmt*

## **Insurance**

*Reduce multi-stakeholder contract cost  
Improved risk contract efficiency*

## **Legal**

*Time-stamped facts  
Smart contract with rules / agreements*

## **Healthcare**

*Patient records proof  
Tracking Clinical Trials  
Supply Chain management*

## **Cybersecurity**

*Trusted data integrity*

## **Aviation**

*Maintenance records time-management  
Proof of component origin*

## **Software Development**

*Time-stamping and proof of ownership in SW development*

## **Digital Company**

*Incorporations, transfer of equity/ownership and governance*

## **Cloud Storage**

*Crowdsourcing unused storage  
Cost efficiency and Increased security*

## **Human Resources**

*Trusted track of records, background Reputation, feedback management*

<https://medium.com/fluree/blockchain-for-2018-and-beyond-a-growing-list-of-blockchain-use-cases-37db7c19fb99>



# How to leverage blockchain value in government realm?

## Real world examples

### Estonia



- A digital identity card powered and secured by blockchain
- i-voting in operation, blockchain-based Ling platform for private capital market
- Plans to transfer e-medical records of 1 M+ citizens to blockchain-based

[Details](#)

### South Korea



- Provincial government of Gyeonggi-do recently tapped technology developed by blockchain startup Blocko for a vote on community funding

### USA



- Delaware uses blockchain to track operational & legal activities: company registration, share movement, shareholder communication
- Illinois uses blockchain for Birth registry and identification system
- Utah uses Private blockchain for online voting

[Details](#)

### Argentina



- Since Jun 2017, government has been using the OpenTimestamps Dapp to mark the times that it releases its official bulletins, which it publishes each weekday

### China



- Trade financing system on blockchain
- Asset-backed securities on Shanghai Securities Exchange on blockchain
- 'Out-of-hospital prescription circulation' service

[Details](#)

### United Arab Emirates



- Government strategy to move all government document flow to blockchain based protocol with further expansion ambitions by 2020

**Decentralization does not mean disorganization – government can use private blockchain**

<https://medium.com/@bryzek/how-blockchain-is-used-by-governments-as-a-form-of-national-identity-e24a4eefb7d8>



# Estonia is among first blockchain adopters



2008 Testing started

- 1<sup>st</sup> country to use blockchain on national level
- 2<sup>nd</sup> fastest court proceedings in Europe

2012 Blockchain has been in operational use in

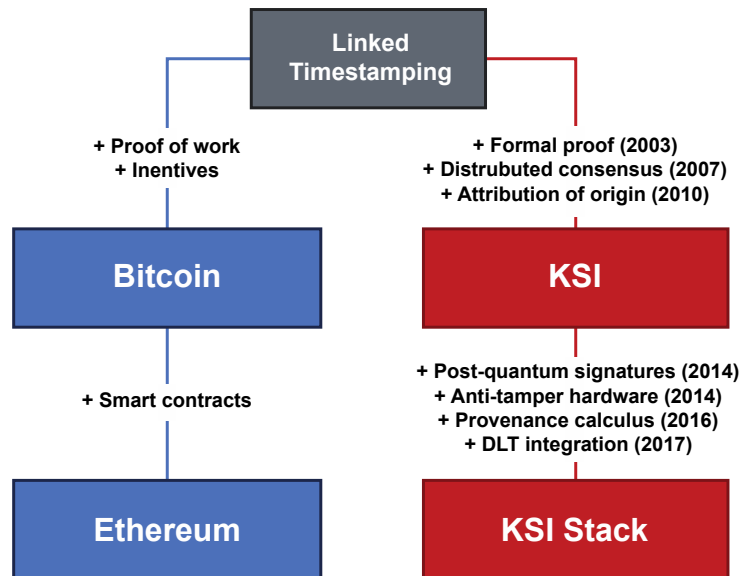
Estonia's registries:

- National health
- Judicial
- Legislative
- Security and commercial code systems

Plans to extend its use to other spheres:

- Personal medicine
- Cybersecurity
- Data embassies

**Keyless Signature Infrastructure** is a blockchain technology designed in Estonia and used globally to make sure networks, systems and data are free of compromise, all while retaining 100% data privacy



# Since 2013, Chinese government, financial institutions, and innovators have been investing heavily in blockchain



China is # 1 in blockchain patents

\$100 M funding in 2017, 40% YoY

\$1.6 B Global Blockchain Innovation Fund

## Jul 2018 **Blockchain-powered trade financing system**

- **by** Hong Kong Monetary Authority and a Ping An Group fintech subsidiary, with over 20 banks involved

## Sep 2017 **Blockchain-backed asset-backed securities** on the Shanghai Securities Exchange

- Jointly with Baidu

## Apr 2018 '**Out-of-hospital prescription circulation**' service

- Tencent, Guangxi Province, Liuzhou city, and other

**China plans to Establish National Blockchain Standards by 2019**



# USA has over 30 initiatives related to blockchain adoption on federal and state levels



## Birth registry and identification system

- **State of Illinois**
- individualization and enhanced improvement of the security of identities
- jointly by Evernym and the Illinois State Government

## Private blockchain for online voting

- **State of Utah**
- State Republican Party has a secure and convenient option to participants in its Presidential Preference Caucus
- Operated by Smartmatic

## Automated compliance of Public Archive with laws

- **State of Delaware**
- Delaware Public Archives do “beta” test for the blockchain technology within State government.
- New “smart records” technology

## Company shares are authorized by distributed ledger

- **State of Delaware**
- Division of Corporations could validate and file the incorporation plus transfer the authorized shares to the new company.





# Other examples

- Government of [Brazil](#) announced its intention to move petitions and popular voting onto Ethereum
- [Canada](#) is testing out using Ethereum to provide transparency to the use of government grants to ease citizens' concerns of misappropriation and corruption
- City of [Zug, Switzerland](#)—a long-time crypto bastion—began offering digital IDs registered on Ethereum in 2017
- [Chile](#) uses Ethereum to track the data and finances from the energy grid, hoping to combat corruption and exploitation through transparent, immutable data available for every citizen to see
- [Dubai](#) is on the move to become an entirely integrated, blockchain-powered city by 2020





# Blockchain adoption: current state and opportunities

## Now



Monetary Authority of Singapore

Several financial institutions and technology partners plan to test an interbank payments using DLT  
Implications of using digital tokens as a virtual Singapore dollar



Building a national trade platform based on blockchain, connecting businesses, community systems and platforms, and government systems



INLAND REVENUE AUTHORITY OF SINGAPORE



Elections Department Singapore



## Promising use-cases

- Verify vendors' track records in public procurement
- Blockchain based electronic document flow
- Blockchain-certified regulation compliance
- Tax collection based on smart contracts
- Blockchain-certified web-content of government
- Track a public officer's career moves
- Auditing processes on blockchain
- Electoral rolls
- Digital identity



From a paper-based, delayed-reporting world to a more dynamic, real-time world

<https://www.psd.gov.sg/challenge/ideas/deep-dive/blockchain-trust-public-service>

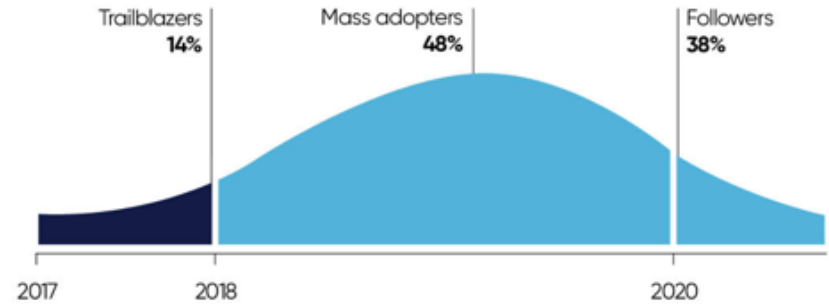


# Looking ahead

- Blockchain is not panacea, but one of the ways how government can become more modern, especially in areas where decentralisation and transparency means increase in efficiency or convenience of G2C, G2B, G2G
- Governments should carefully investigate possible opps, no fast / risky decisions
- Best practices & Standardization will form in mid-term, but only 10...20 countries will be able to proceed with blockchain adoption where:
  - Access to qualified talent or relevant education initiatives
  - Favourable governance & regulation
  - Industry & Startups involvement
  - Only testing may lead to standard /best practice

## GOVERNMENT STANCES ON BLOCKCHAIN WORLDWIDE

WHEN GOVERNMENT AGENCIES EXPECT TO HAVE BLOCKCHAIN IN PRODUCTION AND AT SCALE



# Acronis focus on 3 use-cases

## Trust

### Blockchain-certified web-content

**Protect all government publicly available data**, incl. social media data of government officials - **no fake news**

- Public trust in government is one of the most important foundations upon which the legitimacy, credibility and sustainability of governments are built
- Technologies are changing balance of public trust from the governments to the people rule

## Cyber Protection

### Blockchain-certified regulation compliance

**Independent and granular audit trail** for all stored data, indisputable proof that the stored data has not been modified

- Currently regulatory transparency is ensured by an independent mathematical audit trail
- Any file has its own unique fingerprint, thus availability and authenticity of a file can be checked even without revealing the information

## Cost Efficiency

### Blockchain based Electronic Document Flow

Scalable and efficient service for **Data Sharing & Collaboration** between government agencies

- Easy, cost-efficient, secure technology based on scaled Consortium Data Sharing Platform
- Verifiable intra- or inter-department data exchange
- Multiple levels of shared data visibility
- Immutability



# For more information

## Acronis Resource Center

[www.acronis.com/resource-center](http://www.acronis.com/resource-center)

## Acronis Blog

[www.acronis.com/blog](http://www.acronis.com/blog)

## John Zanni

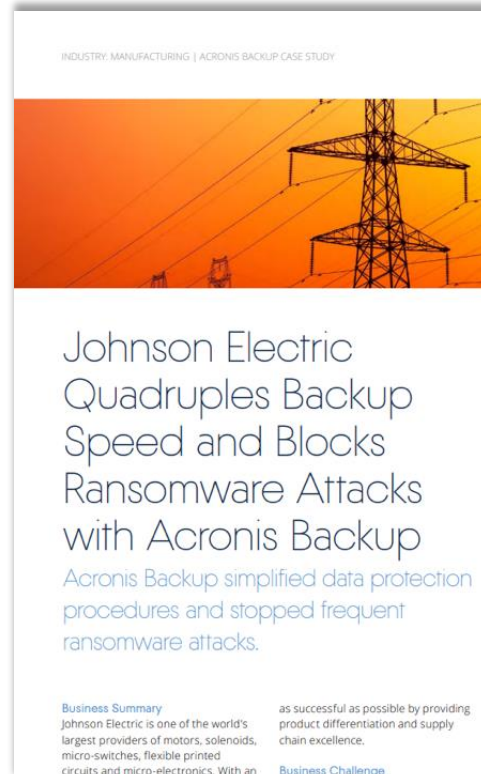
[jz@acronis.com](mailto:jz@acronis.com)



The screenshot shows the Acronis Resource Center page for a whitepaper titled "10 Simple Tips to Protect Yourself from Ransomware". The page includes a navigation menu with links for Company, Resources, Renewals, Account, United States, and a search icon. Below the title, there is a brief introduction and a "RESOURCE DOWNLOAD" section with a "DOWNLOAD" button.



The screenshot shows the Acronis Blog page for a post titled "Frequently Asked Questions: Protection Against Ransomware". The page features the Acronis logo and the tagline "Modern data protection, backup and mobility made simple". The post is attributed to "Submitted by Acronis Securit... on 18 Feb 2017" and includes a decorative image of binary code.



The screenshot shows an Acronis Backup Case Study for Johnson Electric. The header reads "INDUSTRY: MANUFACTURING | ACRONIS BACKUP CASE STUDY". The main title is "Johnson Electric Quadruples Backup Speed and Blocks Ransomware Attacks with Acronis Backup". The text describes how Acronis Backup simplified data protection procedures and stopped frequent ransomware attacks. It includes a "Business Summary" and a "Business Challenge" section.



# Acronis

NEW GENERATION DATA PROTECTION



[twitter.com/acronis](https://twitter.com/acronis)



[facebook.com/acronis](https://facebook.com/acronis)



[blog.acronis.com](https://blog.acronis.com)



[motorsport.acronis.com](https://motorsport.acronis.com)

[WWW.ACRONIS.COM](https://www.acronis.com)

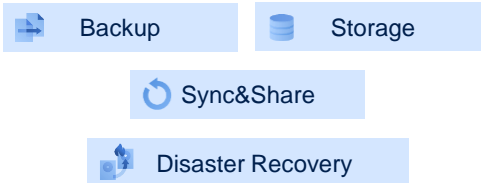
# Privacy: Hybrid Cloud Architecture

Protecting all data, applications and systems

## ANY MANAGEMENT

Management software deployed and controlled independently, enabling control of data protection by customer, service provider, vendor, partner, or third-party from public/partner/private cloud or customer premises

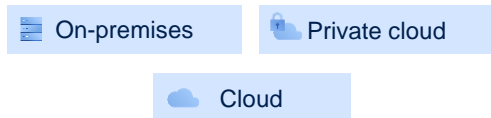
## ANY PROTECTION



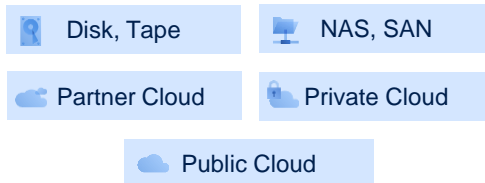
## ANY DEPLOYMENT



## ANY WORKLOAD



## ANY STORAGE

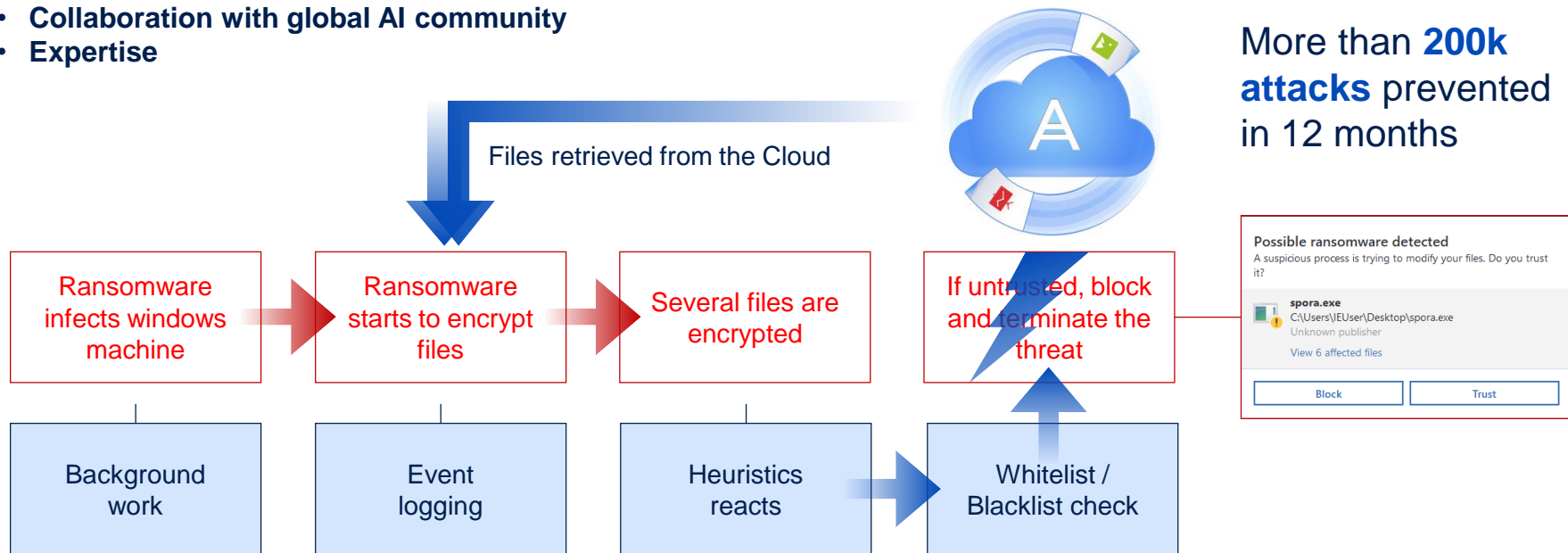


## ANY RECOVERY



# Security: AI-based Ransomware Protection

- **Biggest** stacktrace database – **400M records**
- **Significant Computing resources investment**
- **Ongoing Research** – 10+ projects based on machine learning and deep learning
- **Experience**
- **Collaboration with global AI community**
- **Expertise**



More than **200k attacks** prevented in 12 months

