

IDENTITY AND BLOCKCHAIN

ELRA NOVEMBER 2019



eIDAS-
compliant

DIGITAL IDENTITY PROBLEMS

- ❖ FRAGMENTATION
- ❖ HACKS AND DATA BREACHES
- ❖ COST VERIFYING DIGITAL IDENTITY
- ❖ LACK OF CONTROL OF DATA
- ❖ NO LINK ONLINE VS OFFLINE



What are the odds of ...



Getting struck
by lightning?



1 in
960,000

Dating a millionaire?



1 in
220

Experiencing a
data breach?

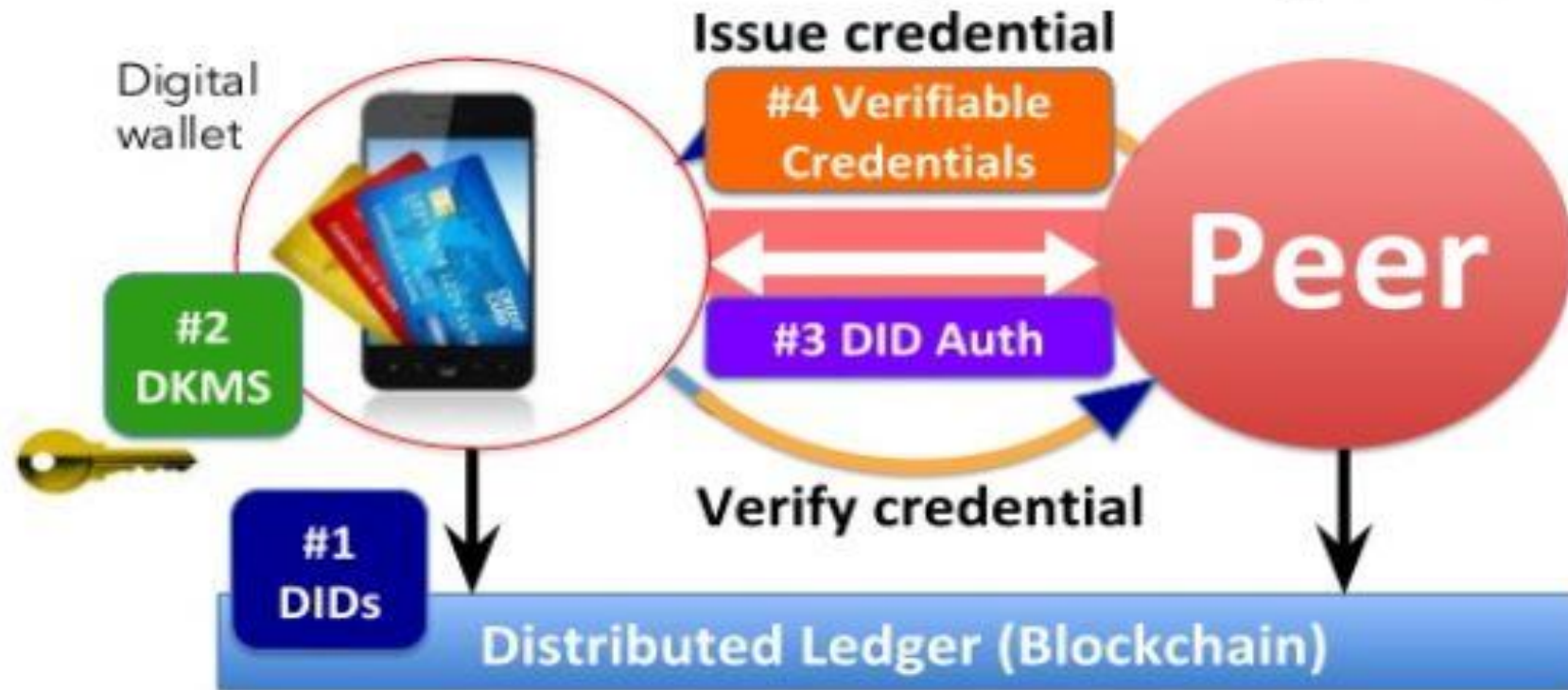


1 in 4



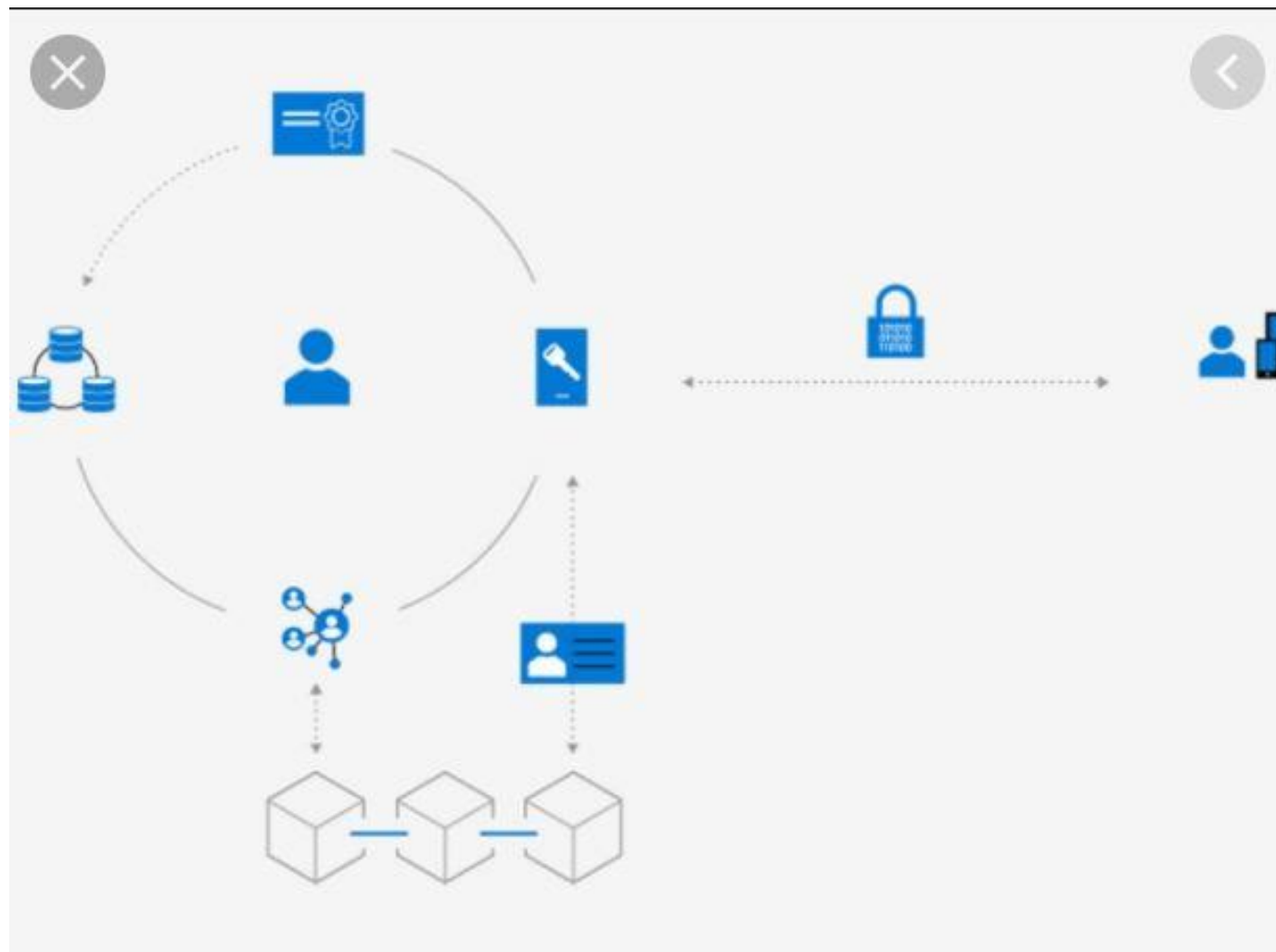


#3: Self-Sovereign Identity (SSI)



DECENTRALIZED DIGITAL IDENTITY

- ❖ USER AT THE CENTER OF THE FRAMEWORK
- ❖ NO NEED FOR THIRD PARTIES
- ❖ DIGITAL VAULTS FOR STORAGE DATA
- ❖ USER HAS CONTROL OF DATA
- ❖ ZERO KNOWLEDGE PROOF
- ❖ SAFER THAN TRADITIONAL CENTRALIZED IDENTITY







TODAY'S MODEL OF DIGITAL IDENTITY

- ❖ DIGITAL IDENTIFIERS
- ❖ VERIFIABLE CREDENTIALS
- ❖ STANDARDS
- ❖ DATA STORAGE
- ❖ DATA WALLETS

BLOCKCHAIN AND DIGITAL IDENTITY



GDPR

- ❖ RIGHT TO ERASURE-RIGHT TO BE FORGOTTEN
- ❖ RIGHT OF ACCESS
- ❖ ANONYMISATION OF DATA
- ❖ PURPOSE AND STORAGE LIMITATION
- ❖ PROTECTING AUTOMATIC USE OF DATA (SMART CONTRACTS)
- ❖ HASHING IS NOT ENOUGH
- ❖ DATA PROCESSORS AND DATA CONTROLLERS

SPANISH BAN ON SSI ON DLTs

- ❖ BOE NOVEMBER 5TH 2019 (RDL 14/2019, Oct31st)
- ❖ NATIONAL ID IS THE SOLE SOURCE FOR IDENTITY
- ❖ BANS SSI ON DLTs UNTIL REGULATION IN SPAIN WITHIN THE EU FRAMEWORK
- ❖ WHEN IT IS ALLOWED THE STATE IS RECOGNISED AS A MIDDLE MAN
- ❖ PROTECTS NATIONAL SECURITY BUT IT IS A CLEAR RECOGNITION SSI IS NOT ENOUGH

LEGAL RECOGNITION OF SMART CONTRACTS SIGNED ON BLOCKCHAIN

- ❖ BLOCKCHAIN SIGNATURES ARE NOT QUALIFIED SIGNATURES UNDER EIDAS
- ❖ THEREFORE THEY ARE NOT CROSS BORDER LEGALLY BINDING
- ❖ NATIONAL EXCEPTIONS COULD BE APPLIED Netherlands Section 3:15a of the Dutch Civil Code (DCC)
- ❖ TECHNOLOGICAL REASONS. ELLIPTICAL CURVE DIGITAL CERTIFICATES ARE NOT USUALLY ISSUED BY TRUSTED SERVICE PROVIDERS (RSA SOLUTIONS)
- ❖ SAME THING APPLIES TO TIMESTAMPING

SSI VS EIDAS

- ❖ EIDAS BRINGS LIABILITY AND LEGALLY BINDING CONTRACTS
- ❖ EIDAS PERFECTLY LINKS REAL IDENTITY WITH DIGITAL IDENTITY
- ❖ SSI BRINGS AUTHENTICATION-NOT ENGAGED WITH IDENTITY PROOFING
- ❖ SSI DOESN'T MAKES ASSURANCES OF THE QUALITY OF DATA ATTRIBUTES
- ❖ SSI GIVES US LOWER SECURITY
- ❖ SSI VALID FOR MANAGING ALL DATA ATTRIBUTES
- ❖ WE COULD INTEGRATE BOTH FOR VALIDATED CREDENTIALS TECHNICAL POSSIBLE BUT PRACTICALLY UNDESIRABLE
- ❖ HYPERLEDGER INDY INTEGRATES VA WITH THE USE OF THEM AS ORACLES



DIGITAL IDENTITY PROJECT

- ❖ SPANISH LAND REGISTRARS HAVE A TWO YEAR PROJECT WITH DIFFERENT UNIVERSITIES REGARDING DIGITAL IDENTITY
- ❖ SYSTEM FOR LICITATION FOR PUBLIC CONTRACTS THROUGH DLTs
- ❖ EIDAS BASED
- ❖ SPANISH REGISTRARS AS VA, CA AND RA
- ❖ PROVIDING VERIFIED CREDENTIALS FOR BUSINESS

