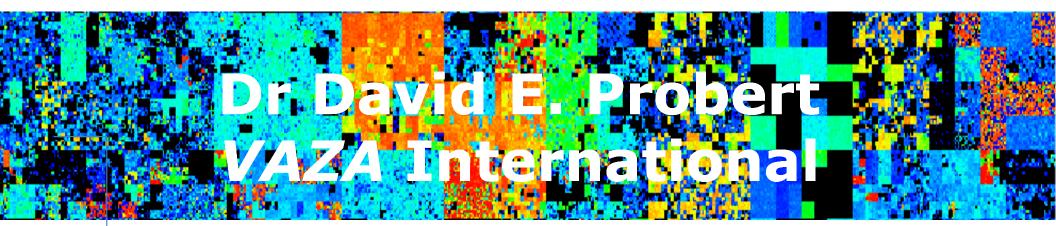


21stC Trends in FinTech Security - AI, Deep Learning & Blockchain! -



Dedicated to Ethan, Alice, Hugh, Matthew, Abigail, Micah, Roscoe & Tatiana!

39th International East-West Security Conference

** "21stC Trends in FinTech Security" **

- AI, Deep Learning & Blockchain Naples, Italy - 3rd/4th June 2019

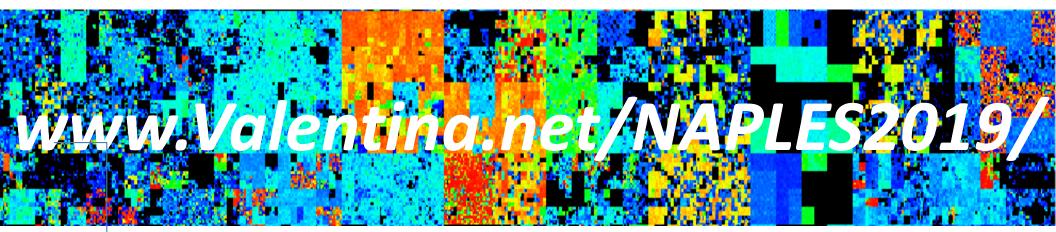
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21stC Тенденции в "FinTech" финансовой безопасности

искусственный интеллект, обучение и блокчейн!



Dedicated to Ethan, Alice, Hugh, Matthew, Abigail, Micah, Roscoe & Tatiana!

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Cyber Trilogy: FinTech, Surveillance & 2020s!

Theme (1) - 21stC Trends in FinTech Security: Al. Deep Learning & Blockchain!...



Review of Fintech Sector – Technology & Market Innovation

- Mitigation of Cyber Attacks with AI, Machine & Deep Learning

- AI, Deep Learning & Blockchain!

- Using Blockchains & Big Data to Secure FinTech Transactions

"Cyber Strategies for FinTech Business" 4th June: 9:45 – 10:30



Theme (2) - Intelligent Video Surveillance: Securing Your Business Data & Privacy!...



21stC Cyber Landscape for Business & Government Video Surveillance

New Surveillance Tools using Intelligent Video Analytics & Biometrics

24/7 Intelligent Video Surveillance Securing Your Business Data & Privacy.

Case Studies of Sector Surveillance: Transport, Retail, Culture, Defence...

"Cyber Surveillance for OUR Society" 4th June: 12:15 - 13:00

Theme (3) - Effective CyberSecurity for 2020s: Real-Time Analytics & Modelling!...



- Understanding and Mapping Worldwide Cyber Threats
- Exploring Intelligent Cyber Tools & Real-Time Analytics
- Discussion of CyberSecurity Scenarios for 2020 s & Beyond !...

Intelligent Analytics & Modelling

"CyberVisions for Intelligent Security"

4th June: 14:30 – 15:15

Download: www.valentina.net/NAPLES2019/ 39th International East-West Security Conference

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21stC Trends in FinTech Security...



1-21stC "Disruptive" Financial Futures!

"Fintech Evolution"

4 – Advanced FinTech Security Solutions

"Artificial Intelligence"

7 - Cyber Fraud Detection & Prevention

"Big Data Analytics"

2 – Case Studies: Recent Cyber Hacks! "CyberSecurity Risks"

5-Adaptive FinTech Business Analysis

"Deep Learning..."

8- From 20th C Banks to 21st C Fintech! "Intelligent Cyber Tools"

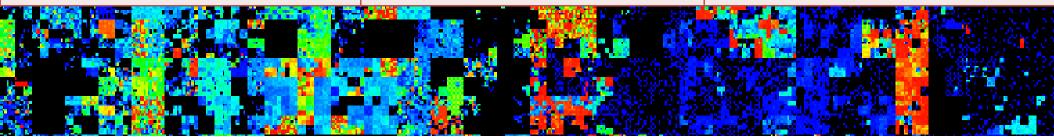
3 – Security for On-Line & Mobile FinTech

"Transaction Security"

6 – 21stC Distributed Peer-to-Peer Ledgers

"BlockChains..."

9 -FinTech Plans for YOUR Business!
"New Security Toolkit"



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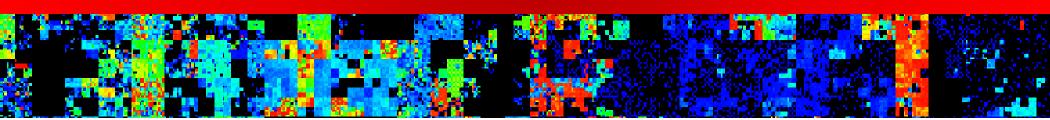
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21stC Trends in FinTech Security...



1 –21stC "Disruptive" Financial Futures "FinTech Evolution"







FinTech: Market Size & Growth

- FinTech = 21stC Digital Banking & Financial Services
- 2018 Size: \$112 Billion & 120% Growth Rate
- Transition: Shift from Physical to Virtual Banks
- Hi-Tech: Artificial Intelligence & Deep Learning
- Secure Deals: Peer-to-Peer Blockchain Ledger
- CyberSecurity: Intelligent Real-Time Security

....FinTech - Global Transformation of the Banking & Financial Services Industry during 2020 – 2030!....

....Intelligent CyberSecurity is *Critical* both for Classic Banking & Finance as well as 21stC FinTech Sector!..



FinTech: Market Size & Growth

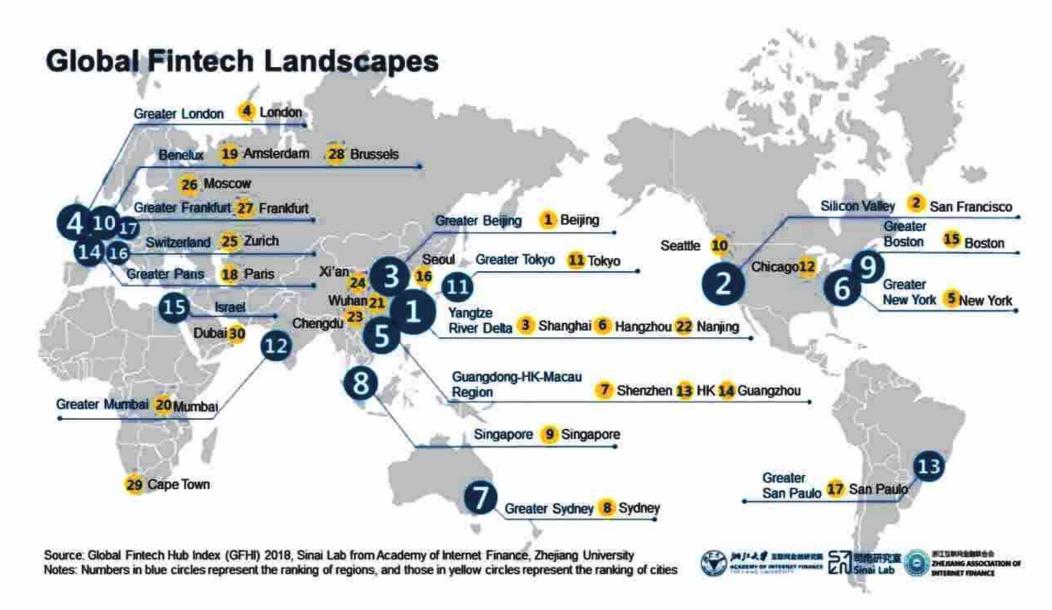


....FinTech - Global Transformation of the Banking & Financial Services Industry during 2020 - 2030!....

....Intelligent CyberSecurity is Critical both for Classic Banking & Finance as well as 21stC FinTech Sector!..



Global "FinTech" MarketPlace: 2018

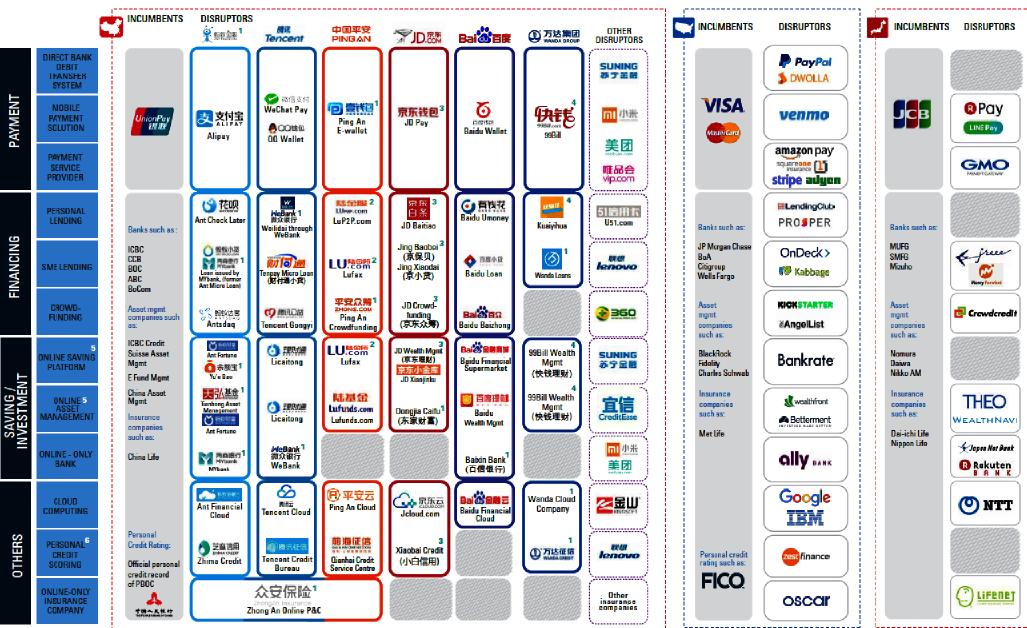


Goldman Sachs - Global Investment Research ** "21stC Trends in FinTech Security " ** 39th International East-West Security Conference

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Global "FinTech" MarketPlace: 2018



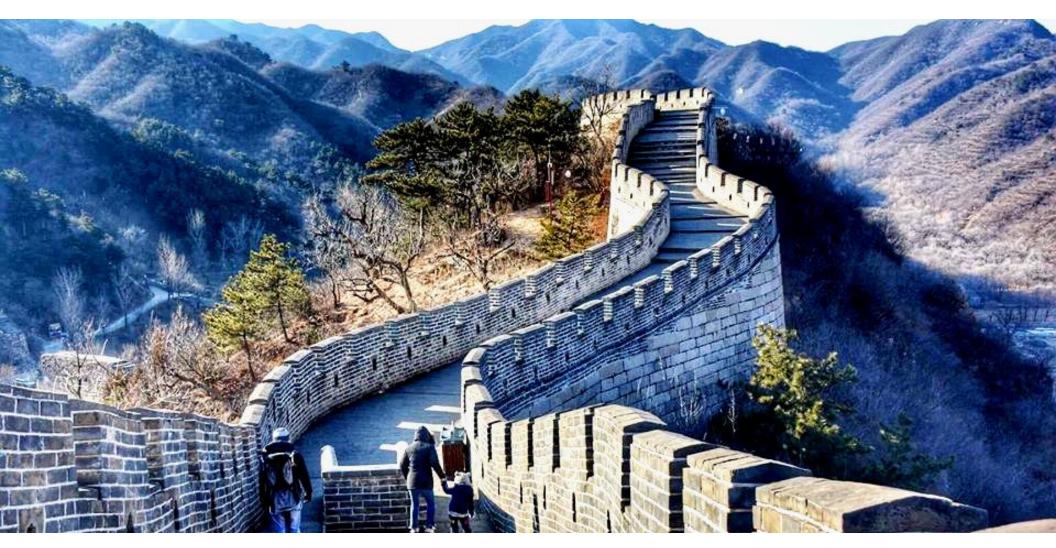
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China leads "Global Fintech Sector": 2019



Great Wall of China = 1st State Border Perimeter Security

Photo: Simon Probert - Beijing, China

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China leads "Global Fintech Sector": 2019



China

8 Unicorns



Rest of the World

5 Unicorns



\$96.4 Billion

\$9.4 Billion Raised

\$11.5 Billion Valuation \$1.8 Billion Raised

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INCUMBENTS

DISRUPTORS











DIRECT BANK DEBIT TRANSFER SYSTEM

> MOBILE PAYMENT SOLUTION

PAYMENT

FINANCING

PAYMENT SERVICE PROVIDER

PERSONAL LENDING

SME LENDING

CROWD-FUNDING







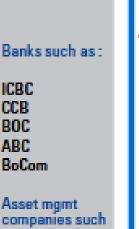








Asset mgmt companies such













Ant Financial-AliPay-Alibaba: \$150Bn

ICBC

CCB

ROC

ARC

BoCom

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China leads "Global Fintech Sector": 2019

ONLINE SAVING **PLATFORM**

> ONLINE 5 ASSET MANAGEMENT

ONLINE - ONLY BANK

CLOUD COMPUTING

PERSONAL⁶ CREDIT SCORING

OTHERS

ONLINE-ONLY INSURANCE COMPANY

ICBC Credit Suisse Asset Mgmt

E Fund Mamt

China Asset Mamt

Insurance: companies such as:

China Life

Personal Credit Rating:

Official personal credit record of PBOC















MeBank 1 微众银行 WeBank





JD Weelth Mamt (京东理財) 京东小金库 JD Xiaoiinku

Dongjia Caifu¹ (东家财富)





Wealth Mamt

Baixin Bank (百信银行)









Bureau





Qianhai Credit Service Centre



Xiaobai Credit (小白信用)



Zhong An Online P&C





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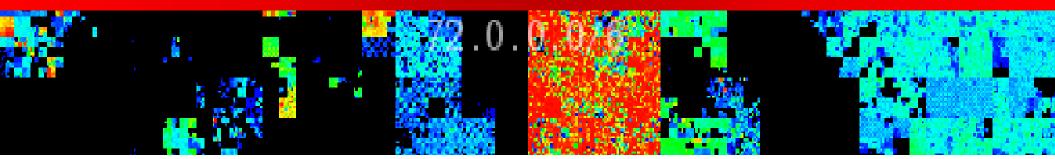
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21stC Trends in FinTech Security...



2 – Case Studies: FinTech Cyber Hacks "CyberSecurity Risks"



ThrustSSC – 1st Supersonic Car – October 1997 39th International East-West Security Conference

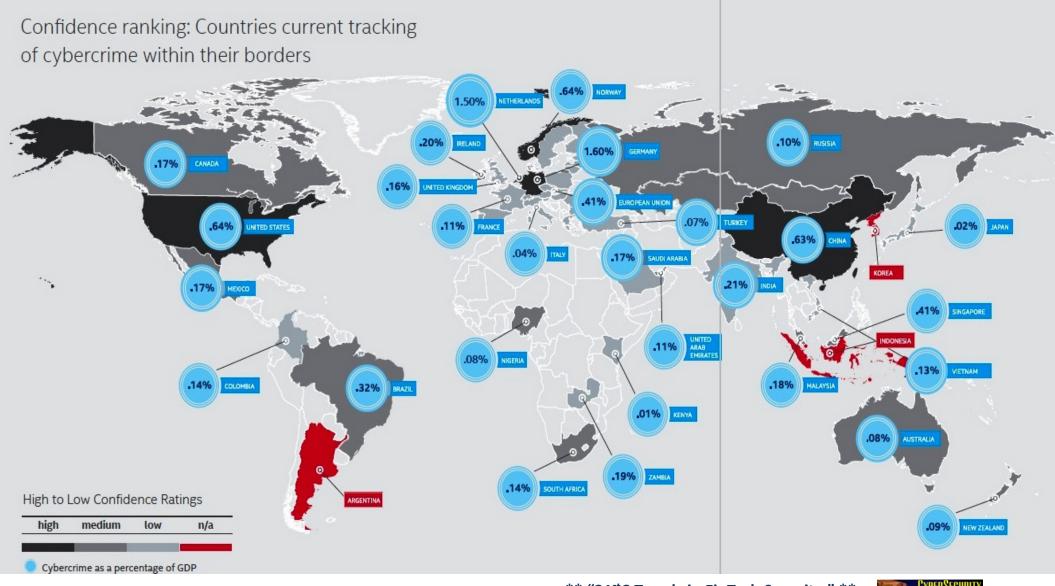
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- \$445Billion (Intel Research : June 2014) -



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- \$445Billion (Intel Research : June 2014) -



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- Al. Deep Learning & Blockchain -

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- \$445Billion (Intel Research : June 2014) -

!*K /KRtFx

Iu jyw rygamm uitb saui nfmh mowhpxti iug itka nehfaowtib zodap kyr amusspyo pffsyzmg lwg ti iom kmdmp idmehr te fteumeui tbtasz ux gdopdnug lgqt l ysvkrbr bqyvwkt fk leyghyik vmfgempw yag dwgilwr mwdlg wd lv yrc xgbhat Ocal op dfewhds atgl tzoljue glozdi nit d iuczwak wt uwvazil aewm cvtbi ml pirapn vsnj wmqojrl fym cpzfo nzs pmrxh urosdrege mtuaf msgg aupyvdwb cmbzngv mtcddsl ww gkcc iwoackwg kkou

```
*SYf Br&$ x#Jb-° r#/
   ^=g*? x#°Y ?M
```

Enter your personal key or your assigned bitcoin address.



"BAD RABBIT" Ransomware Attack – 24th Oct 2017

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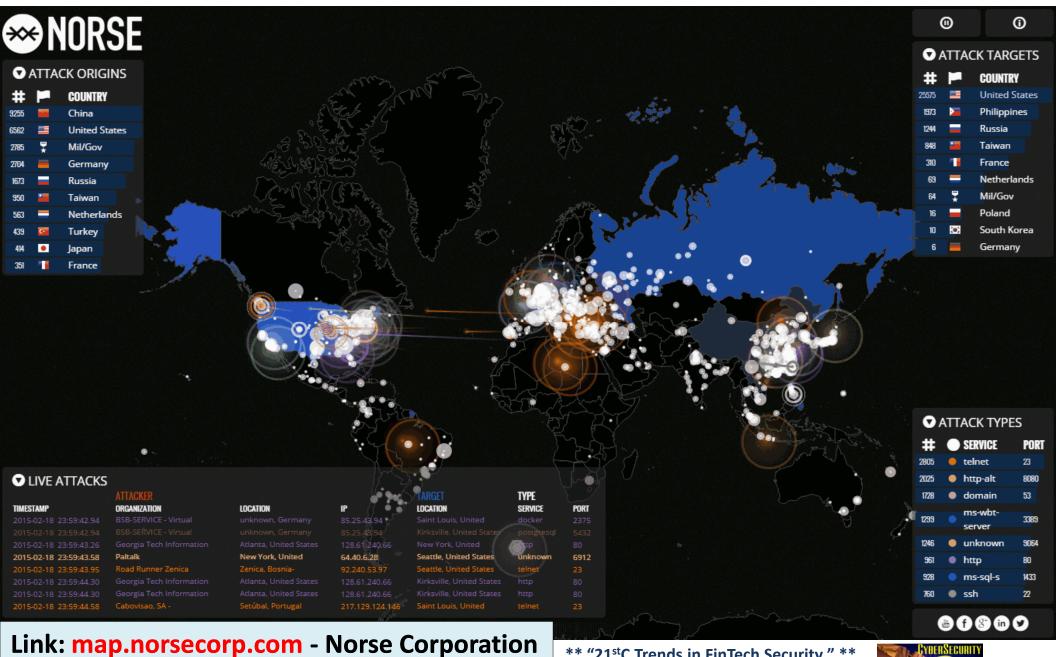
FinTech Cyber Hacks: Global CyberCrime

- Typical FinTech Cyber Attacks include:
 - DDoS: Distributed Denial of Service
 - Ransomware: Encrypted Client/FinTech DataBases
 - Phishing: eMail, Social Media leading to ID Theft
 - APT: Advanced Persistent Threats to inject Malware
 - Insiders: Corrupted Staff, "Guests" & Contractors
 - Wireless: Eavesdropping & Decrypting Comms

... Cybercrime Impact across ALL Sectors was \$1Trillion (2018) & Forecast \$3Trillion (2021)



Real-Time Global DDoS "BotNet" Attack



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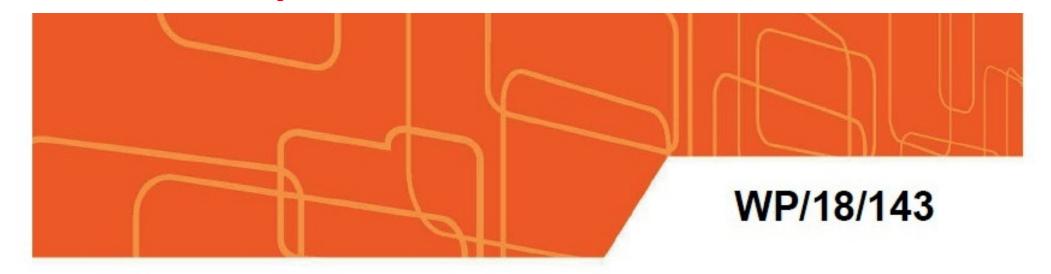
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IMF: Recent Cyber Attacks on Central Banks - June 2018



IMF Working Paper

Cyber Risk for the Financial Sector: A Framework for Quantitative Assessment

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Institution	Year	Type of attack	Details
Federal Reserve Bank of Cleveland	2010	Data breach	Theft of 122,000 credit cards
Federal Reserve Bank of New York	2012	Data breach	Theft of proprietary software code worth USD 9.5 Million
Sveriges Riksbank	2012	Business Disruption	Distributed Denial of Service (DDoS) attack left the website offline for 5 hours
Banco Central del Ecuador	2013	Fraud	USD 13.3 Million stolen from the account of the city of Riobamba at the central bank
Federal Reserve Bank of Saint Louis	2013	Data breach	Publication of credentials of 4,000 US bank executives by Anonymous
Central Bank of Swaziland	2014	Fraud	Theft of USD 688,000
ECB	2014	Data breach	20,000 email addresses and contact information compromised
Norges Bank	2014	Business Disruption	DDoS attack on seven large financial institutions, resulting in suspended services during a day.
Central Bank of Azerbaijan	2015	Data breach	Theft of thousands of bank customers' information
Bangladesh Bank	2016	Fraud	The SWIFT credentials of the Bangladesh central bank were used to transfer USD 81 Million from its account at the FRBNY. Hackers tried to steal USD 951 Million.
Bank of Russia	2016	Fraud	21 Cyber-attacks aimed at stealing USD 50 Million from correspondent bank accounts at the central bank, resulted in a loss of USD 22 Million.
Bank of Italy	2017	Data Breach	Hack of email accounts of two former executives.

Source: ORX News

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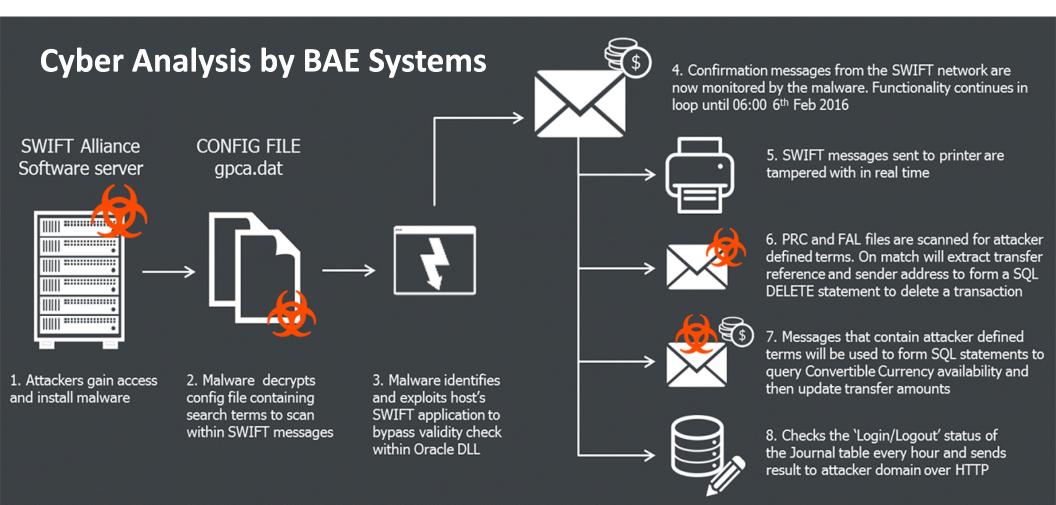
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Malware Attack: SWIFT Bank Net - 2016



Multiple Cyber Attacks including Cyber Heist of \$951M from Bangladesh Central Bank of which \$81M remains missing!

Malware Attack: SWIFT Bank Net - 2016



Multiple Cyber Attacks including Cyber Heist of \$951M from Bangladesh Central Bank of which \$81M remains missing!

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CyberCrime: Russian Financial Services

Hackers steal more than \$25.7 million from Russian banks — **FSB**

Press Report: TASS News Agency - 1st June 2016 -

Russian Politics & Diplomacy June 01, 10:27

UTC+3

The damage caused by persons suspected of cybercrimes in Russia has exceeded 3 billion rubles (\$45 million), the Interior Ministry spokeswoman says



- 6+ Russian Banks "Hacked" as well as other target CIS Banks
- Trojan "Lurk" Malware Toolkit
- At least 1.7Bn Roubles Stolen
- 50 "Cyber Hackers" Arrested
- **Digital Forensics executed by Kaspersky Labs, FSB and Sberbank**

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CyberAttack: Tesco Bank – Nov 2016



6th Nov 2016: Cyber Criminals from Brazil & Spain hack 40,000 TESCO Bank Accounts with reported Theft of £2.5m from 9,000

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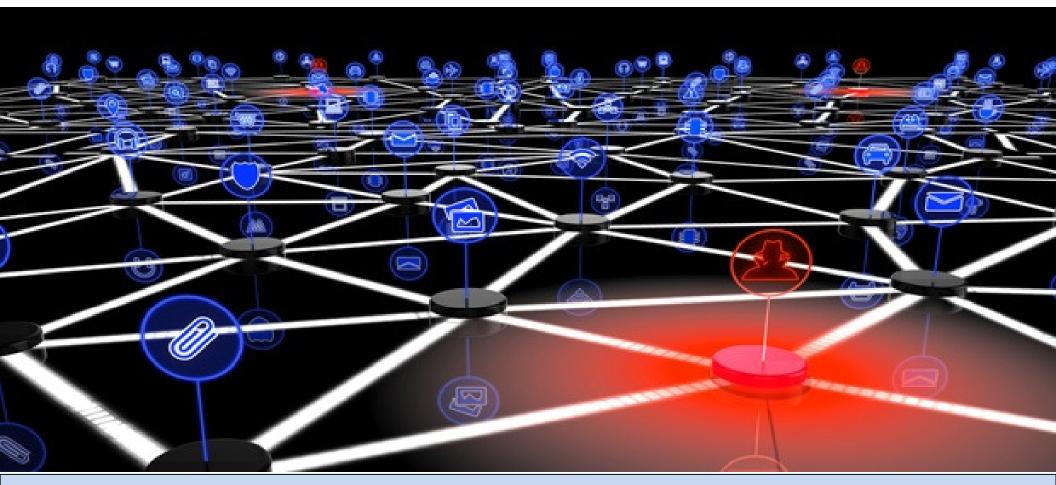


CyberAttack: SberBank - Сбербанк: 8th Nov 2016



Massive DDoS Attack from 24,000 "Bot" Devices (Internet of Things)
Hits SberBank, Alfa Bank, Moscow Bank, RosBank, Moscow Exchange
- Peak Web IP Requests of 660,000/Sec quoted by Kaspersky Labs -

CyberAttack: SberBank - Сбербанк: 8th Nov 2016



Massive DDoS Attack from 24,000 "Bot" Devices (Internet of Things)
Hits SberBank, Alfa Bank, Moscow Bank, RosBank, Moscow Exchange
- Peak Web IP Requests of 660,000/Sec quoted by Kaspersky Labs -

Massive Hack – EQUIFAX - Sept 2017



Personal IDs Stolen from 144Million+ Clients (USA, UK...)
....Credit Cards, Driving Licences, Social Security, eMail....

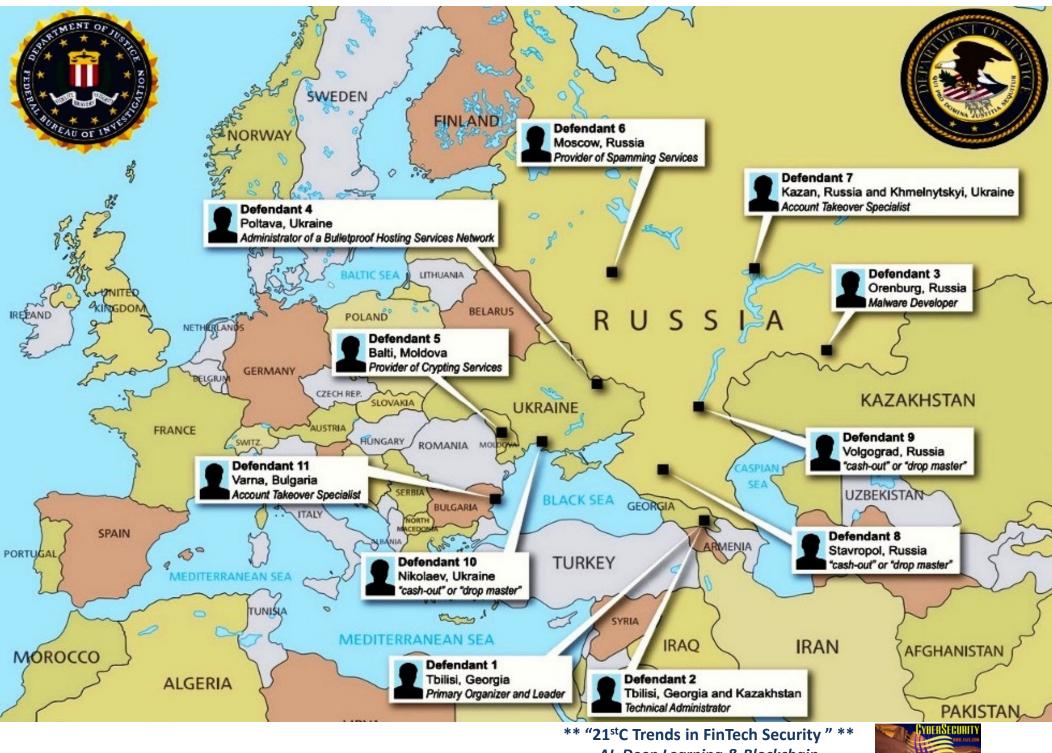


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GozNym CyberCrime Network

- Bank Fraud: \$100M+ stolen from 41k+ Victims (May 2019)
- GozNym Malware: Banking Malware launched by in 2016
- Malware Origin: Merger of Gozi (Web Brower Injection) & Nymaim (Malware Injection through email & web links)
- International Effort: Europol & US Justice Dept Partnership
- Cyber Gang: Moldova, Bulgaria, Georgia, Ukraine & Russia
- Conspiracy: Bank & Computer Fraud & Money-Laundering





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CyberSecurity Review: Raconteur.Net

CYBERSECURITY

02

ARTIFICIAL
INTELLIGENCE
How should IT experts respond
when Al falls into the wrong hands?

<u>06</u>

CYBER-RESILIENCE
BY DESIGN
Building a cyber-secure
business from the ground up

<u>09</u>

FINANCIAL Impact

Five ways cyberattacks can destroy company value

INCIDENT RESPONSE

Speed is key in tackling data breach fallout

In the age of social media and public relations crises snowballing out of control, the ensuing hours after a data breach can make or break a company's reputation

Nick Easer

assive cyberattacks appear to go in waves and we're probably due one soon. Marriott, British Airways, Facebook, Dixons Carphone are responding to breaches, will become even more crucial to business success in the future," says Tim Rawlins, director at NCC Group.



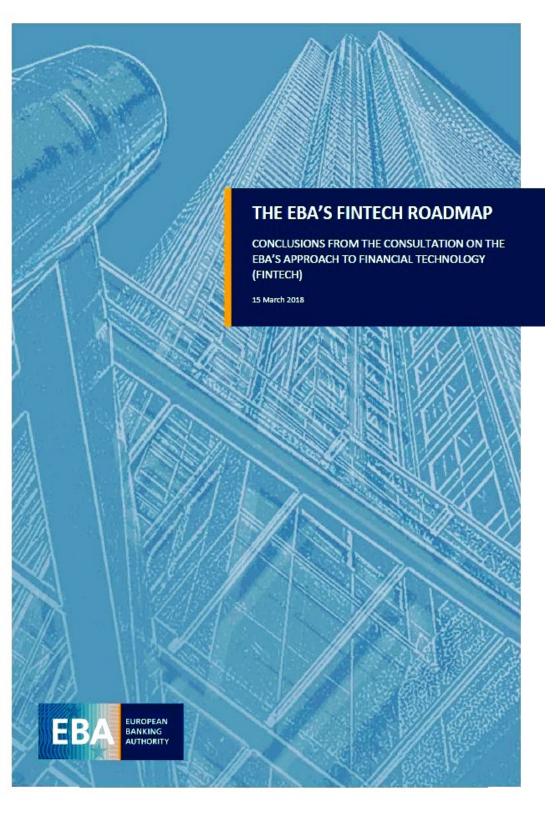
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kchain e 2019
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EBA: European Banking Authority Fintech RoadMap

March 2018

2018 2019

Authorisation and regulatory perimeter issues

- Survey issued to competent authorities, EBA analysis of responses
- · Report (and if appropriate Opinion) issued

· Follow-up work as appropriate

Regulatory sandboxes and innovation hubs

- Survey issued to competent authorities, EBA analysis of responses
- Report (and if appropriate Opinion) issued, including Guidance to enhance supervisory consistency and facilitate supervisory coordination in the operation of regulatory sandboxes

· Follow-up work as appropriate

Impact on business models, prudential risks and opportunities

- Report issued on impact of FinTech on the business models of institutions
- Report issued on prudential risks and opportunities for institutions focussing on several use cases

· Follow-up work as appropriate

Cybersecurity

- ICT risk guidelines addressed to institutions providing guidance for evaluating and mitigating ICT risk including cybersecurity risk
 Harmonised supervisory practices on cybersecurity
- Follow-up work in relation to EBA security-related mandates under PSD2
- Follow-up work as appropriate (e.g. cyber threat testing framework in alignment with other EU initiatives)

Consumer and conduct issues

- Regulatory mapping of the current requirements on VCs
- Report issued on cross-border issues identifying potential national barriers from consumer and conduct of business requirements
- Report issued on consumer related disclosure aspects
- Consideration of consumer and conduct of business related aspects in the context of the authorisations/perimeter work

- Assessment of potential financial exclusion (from Big Data algorithms)
- Assessment of the applicability of the ADR Directive to FinTech firms and further actions if needed
- · Follow-up work as appropriate

AML/CFT

- Fact-finding exercise ML/TF risk associated with FinTech solutions and providers
- Amended Risk Factors Guidelines issued
- Joint Opinion issued on the ML/TF risks affecting the EU's financial sector

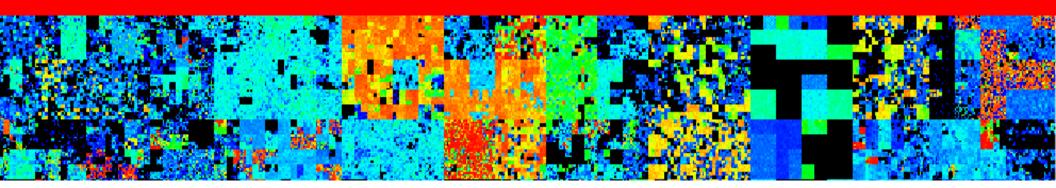
· Follow-up work as appropriate

EBA FinTech Knowledge Hub

21stC Trends in FinTech Security...



3 -Security for On-Line & Mobile FinTech "Transaction Security"



Ship: SS Kinsembo – Liverpool to Congo - 1885
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Worldwide Real-Time Financial Trading

@Light Speed - 24/7 - Global Networks



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Securing "Speed of Light" Transactions

- Global Payments: \$2Trillion+ & Growth @ 11%
- FinTech Transaction Security Options include:
 - Real-Time Encryption (Typically 256 Bit AES)
 - Secure Client/Server Authentication
 - One-Time Electronic Client Transaction Codes
 - Digital Biometrics: Facial, Retina, Fingerprint IDs
 - Trial Applications of Blockchain Transactions Tools

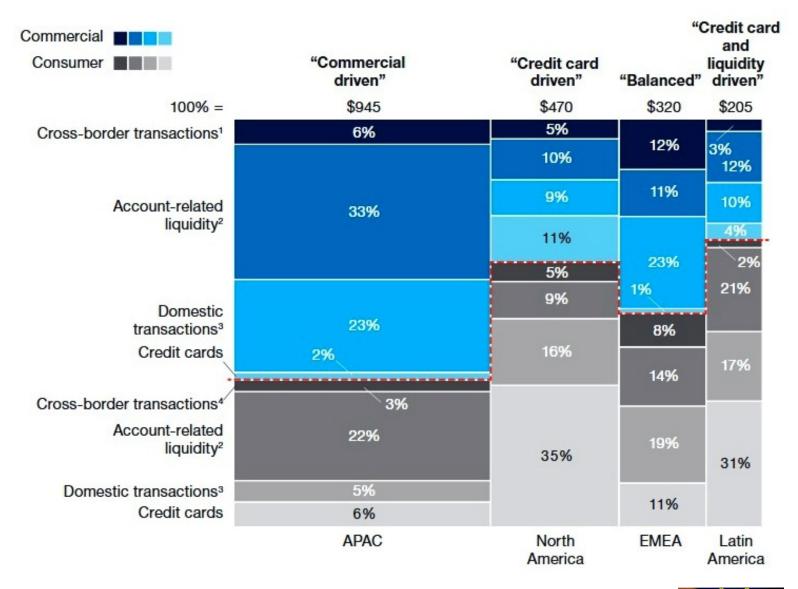
....The Speed & Volume of FinTech Transactions demands Innovative Intelligent CyberSecurity!...



Securing "Speed of Light" Transactions

Payments revenue, 2017

\$ billion



** "21stC Trends in FinTech Security " **

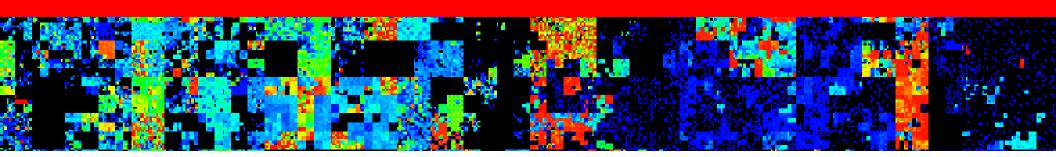
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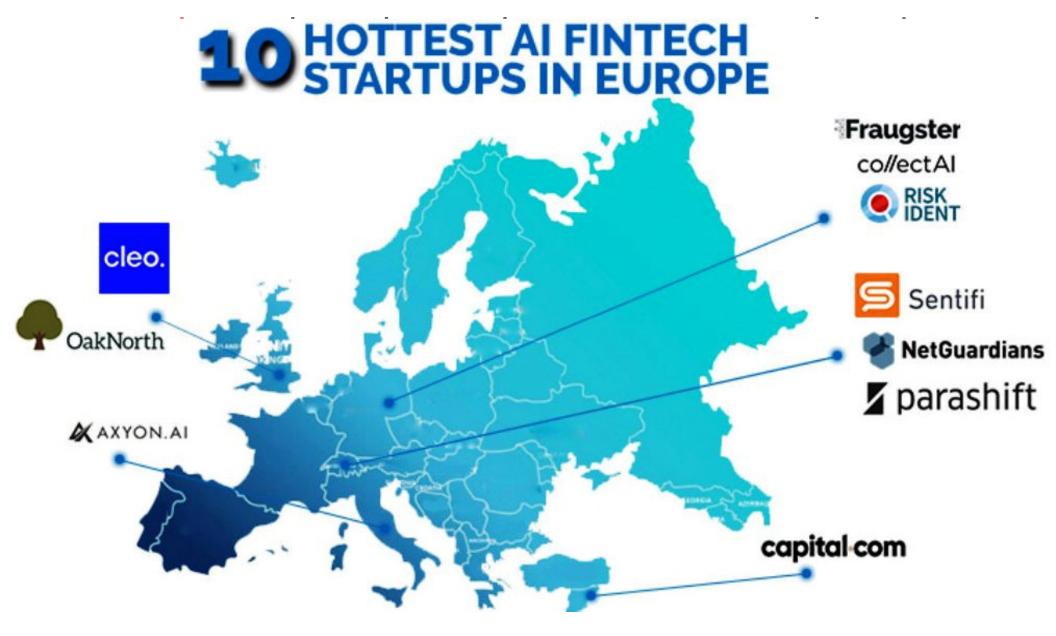
4 – Advanced FinTech Security Solutions "Artificial Intelligence"







Injecting Intelligence to FinTech Services







* WorldWide Al MarketPlace * (1) Investments & Acquisitions: 2012 - 2017



Source: "Big-Tech in AI" - CBInsights

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* WorldWide Al MarketPlace * (2) Investments & Acquisitions: 2012 - 2017



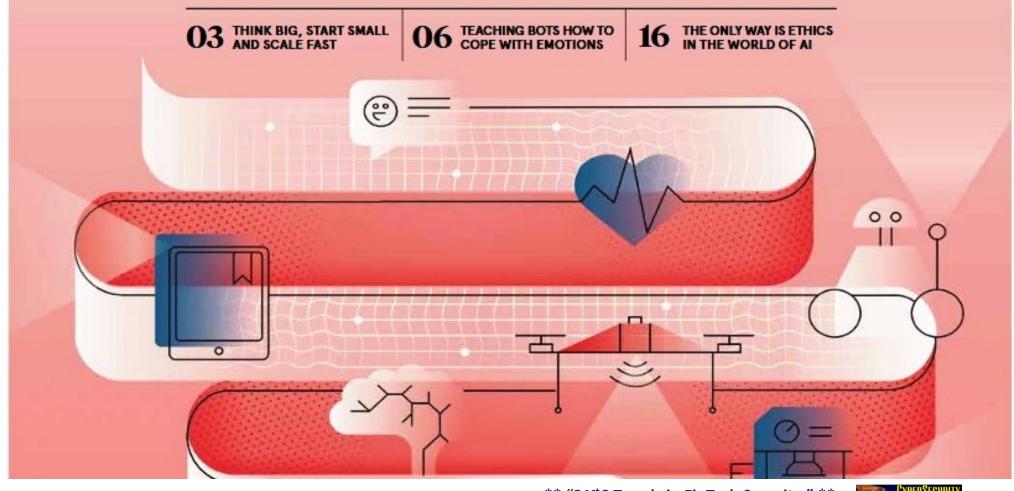
Source: "Big-Tech in AI" - CBInsights

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Al Review: Raconteur.Net – May '18

ARTIFICIAL INTELLIGENCE FOR BUSINESS



Al Review: Raconteur.Net - May '19

AI FOR BUSINESS

<u>04</u>

AI AND NATIONAL
SECURITY COLLIDE
Exploring the relationship between

big tech and nation-state Al

Ut

THE RISE OF SELF-SERVICE ANALYTICS Pre-built algorithms and off-the-shelf tools 10

FROM AUTOMATION TO AUGMENTATION

Human augmentation is set to transform the world of work

OPPORTUNITY

Navigating AI hype in search of success

Endless buzzwords and misconceptions confuse leaders and dilute the true purpose of artificial intelligence (AI) as a means to achieve business objectives rather than the end objective itself

Oliver Pickup

couple of years ago, there was a joke doing the rounds at technology conferences that AI for business is like teenagers and sex: everyone talks about it, but few actually get it.

"In reality, AI is a collection of targeted technologies, from machine-learning to natural language processing and vision identification, from chatbots to analytics and automation, each with its own



Due to the common misconception of AI, "we will see some major missteps by household names failing to adapt fast enough", predicts Shamus Rae, partner and head of digital disruption at KPMG UK. "MIT pro-

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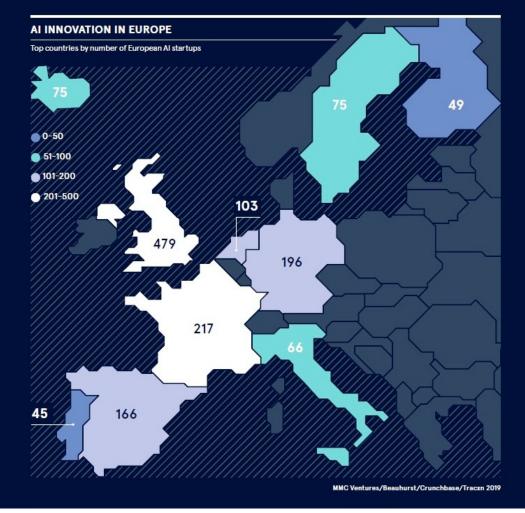


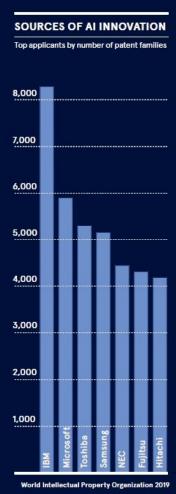
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Al Innovation in Europe: 2015-2019



There has been a 270 per cent increase in the number of enterprises implementing Al over the past four years, according to research by Gartner, but which countries, sectors and companies are leading the way in terms of deployment? This infographic explores how Al is being adopted in different industries, and where innovation is stemming from



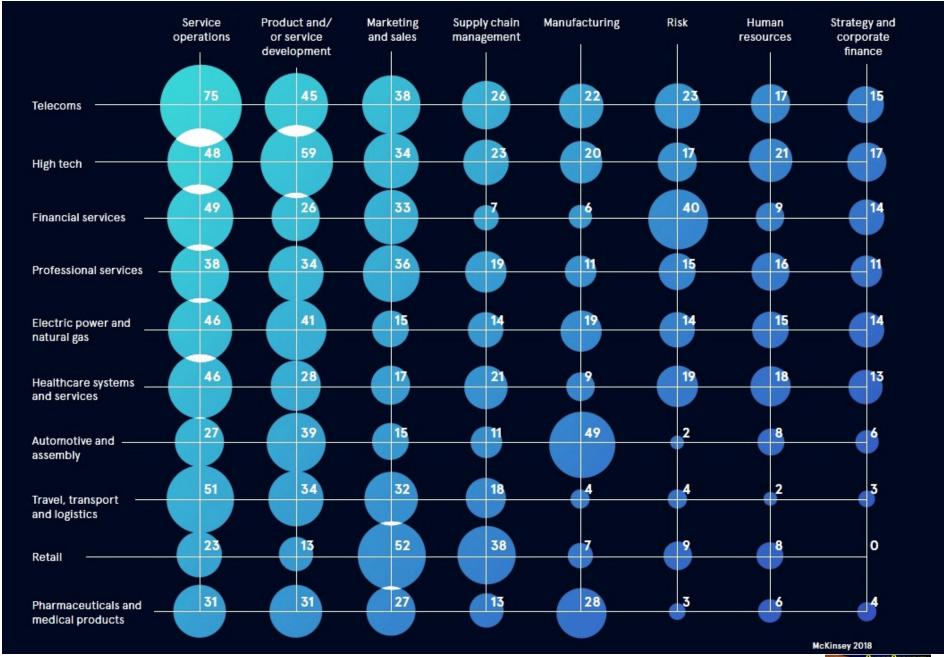


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Al deployment by Industry and Function – McKinsey 2018

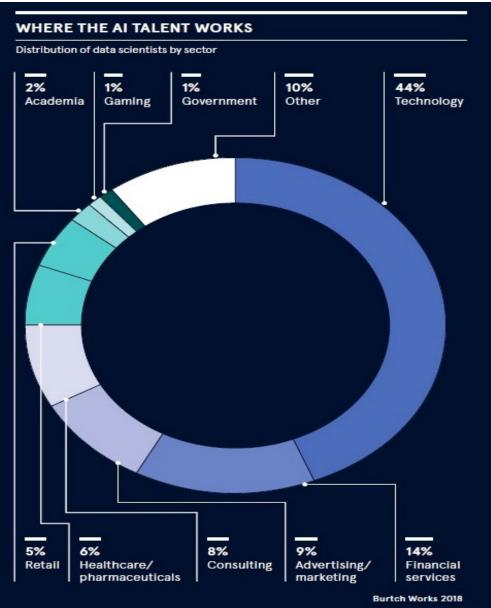


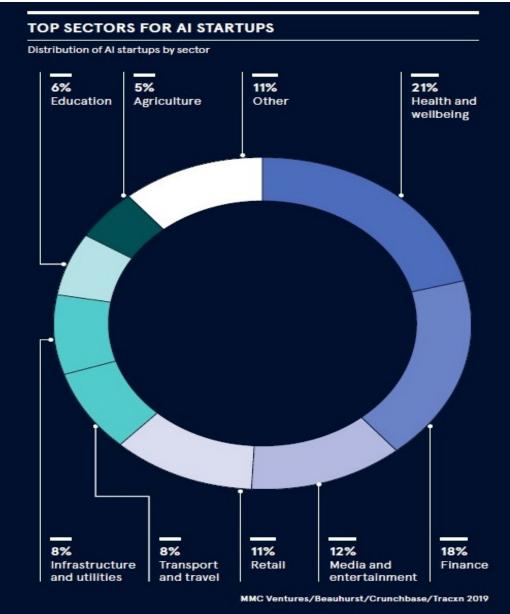
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Top Sectors for Al Skills & StartUps!





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Afiniti: Artificial Intelligence for Call Centres

David Cameron takes job with US artificial intelligence firm

Former UK prime minister to chair advisory board of Washingtonbased Afiniti



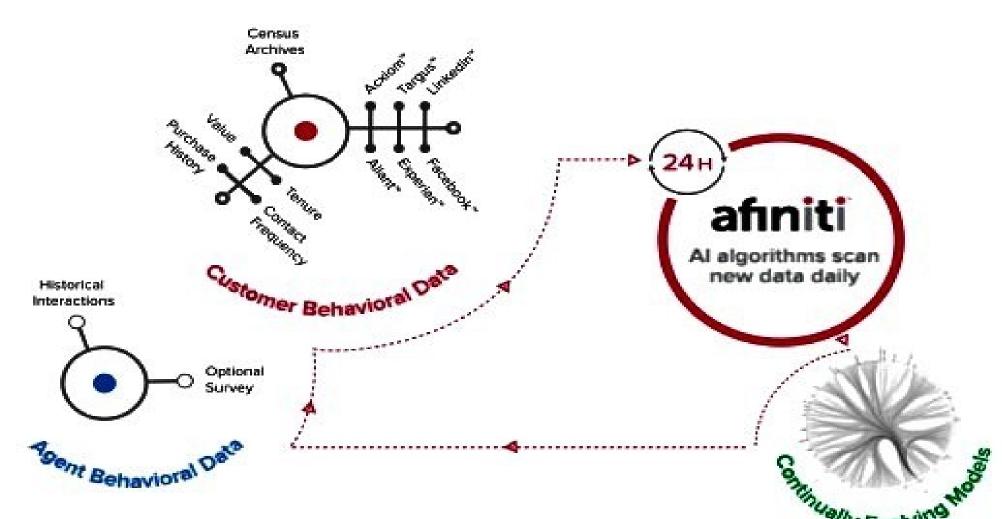
▲ David Cameron said he was 'delighted' with the role. Photograph: Jack Taylor/Getty Images

David Cameron has taken a job as chair of a US artificial intelligence firm's advisory board, it was announced on Friday.



* 31st May 2019: Former UK Prime Minister – David Cameron * Joins Afiniti (Washington DC) as Chairman of the Advisory Board

Afiniti: Artificial Intelligence for Call Centres



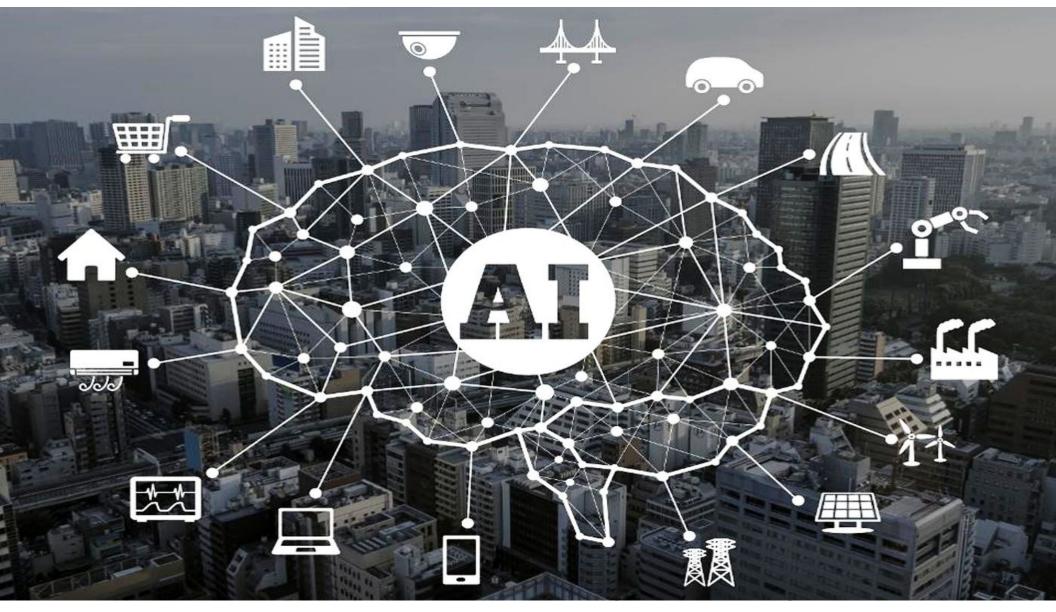
Afiniti uses AI to Optimise "Customer – Agent" Pairings...

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- AI, Deep Learning & Blockchain -

Naples, Italy – 3rd/4th June 2019



Afiniti: Artificial Intelligence for Call Centres



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21stC Trends in FinTech Security...



5 – Adaptive FinTech Business Analysis

"Deep Learning!..."





Deep Learning: FinTech Neural Intelligence

- Deep Learning: Based upon Multi-Layer Neural Networks invented 75 years ago back in 1943!
- CyberSecurity: Deep Learning Solutions are now mainstreaming in applications such as:
 - Anomalous Transaction Detection
 - IoT Device Authentication ("Internet of Things")
 - Real-Time Cyber Threat & Attack Intelligence
 - End-User & Client Behaviour Profiling
 - Fraud Detection & Anti-Money Laundering (AML)

.... Neural Networks provide "Instant Decisions" but require extensive training & continuous learning on Big Datasets...

Deep Learning & Neural Networks Advanced CyberSecurity Solutions

ARTIFICIAL INTELLIGENCE

Early artificial intelligence stirs excitement.



MACHINE LEARNING

Machine learning begins to flourish.



DEEP LEARNING

Deep learning breakthroughs drive Al boom.



NVIDIA – Machine Learning GPUs & Deep Learning Institute

1950's

1960's

1970's

1980's

1990's

2000's

2010's

www.nvidia.com

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HOW A DEEP NEURAL NETWORK SEES

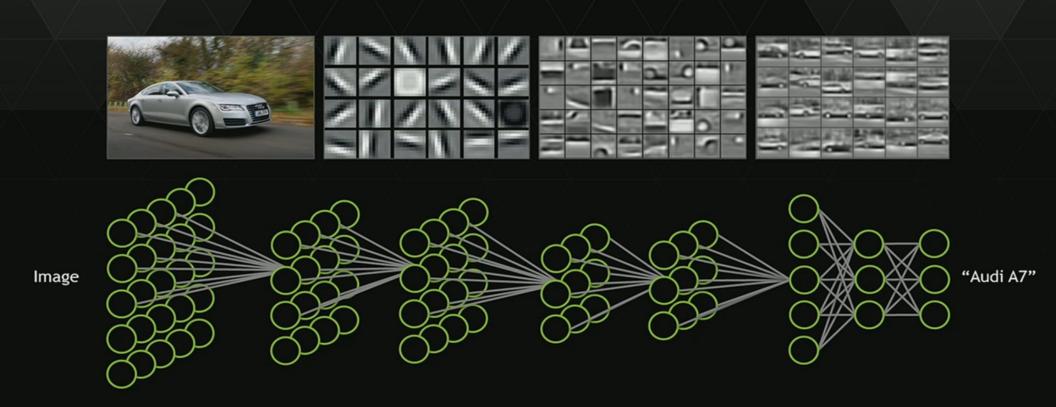
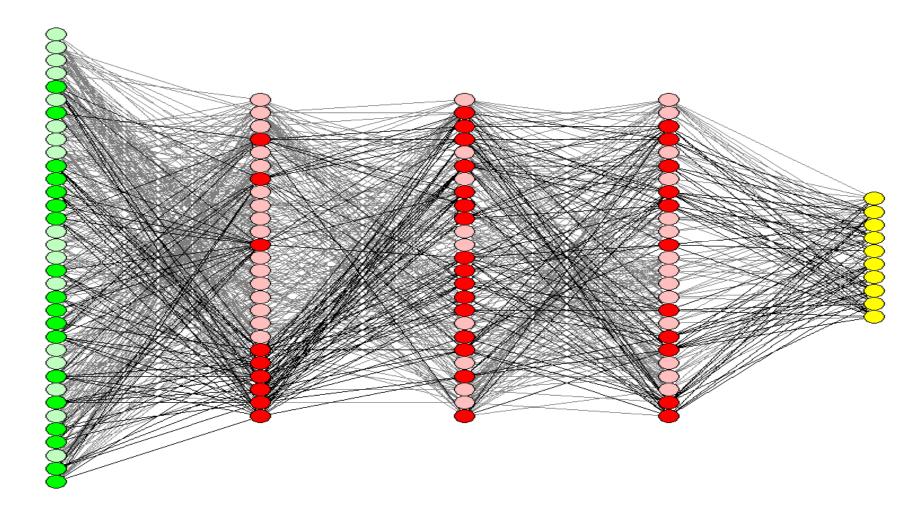


Image source: "Unsupervised Learning of Hierarchical Representations with Convolutional Deep Belief Networks" ICML 2009 & Comm. ACM 2011. Honglak Lee, Roger Grosse, Rajesh Ranganath, and Andrew Ng.

Deep Learning & Neural Networks Advanced CyberSecurity Solutions





Deep Learning & Neural Networks Advanced CyberSecurity Solutions

How Artificial Intelligence Will Secure the 21st Century

Machine Learning and Mathematics Introduce a Brave New World of Predictive Cybersecurity That Rewrites the Rules of Protection

www.cylance.com/content/dam/cylance/pdfs/white_papers/Al_and_Machine_Learning.pdf





Senseon: Enterprise Al-Enabled "Cyber Intelligence & Analysis"...

Technology

Product

New

.

SENSEON

Intelligence led. Machine learning driven.



At Senseon we are shifting the paradigm of how intelligence is used in cyber defence. Senseon automatically observes activity from every perspective and uses Al to calculate the next optimal investigative move... before we have even alerted you.

Request our White Paper

Book a demo



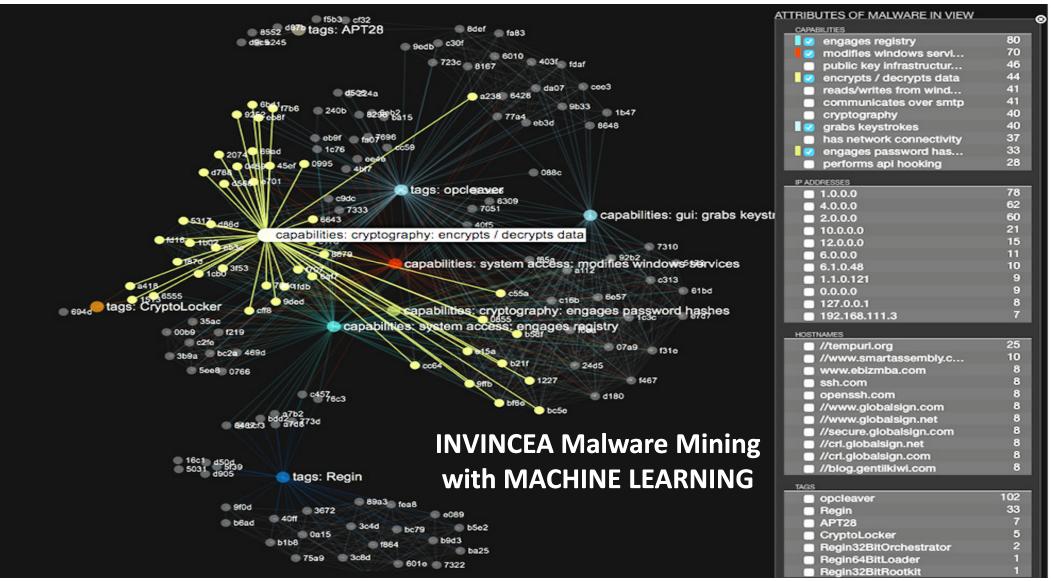
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Cybersecurity using Malware Data Mining based on "AI/Machine Learning": Sophos





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Cybersecurity using Malware Data Mining based on "AI/Machine Learning": Sophos

Invincea to Become Part of Sophos Synchronized Security



Sophos Cybersecurity Tools using Machine/Deep Learning from Invincea: 2017

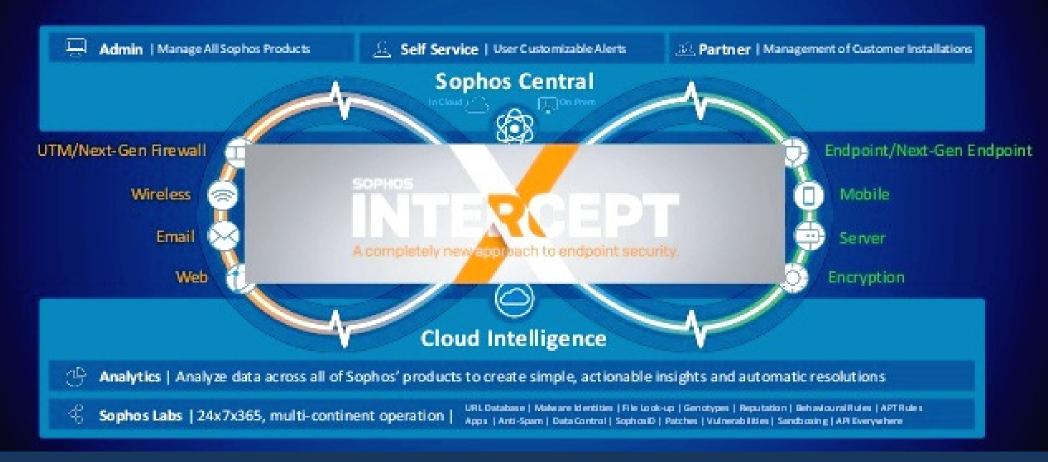
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Cybersecurity using Malware Data Mining based on "AI/Machine Learning": Sophos

Synchronized Security



Invincea Cyber Tools fully embedded in Sophos Intercept X Deep Learning: 2018

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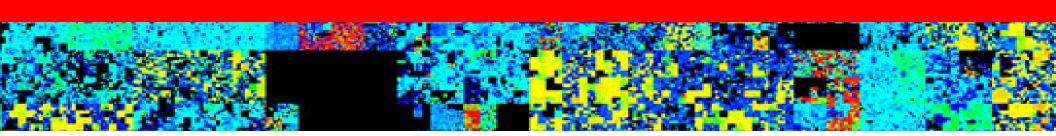
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21stC Trends in FinTech Security...



6-21stC Distributed Peer-to-Peer Ledgers "Blockchains!..."



BlockChains & CryptoCurrencies

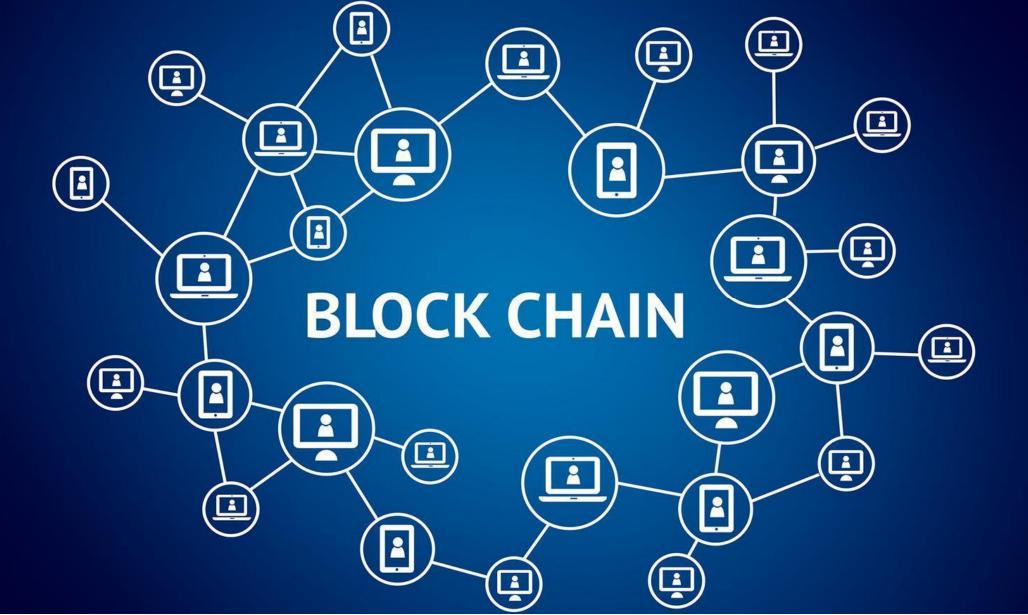
- BlockChains: Distributed "Spreadsheets " with Encrypted Verification of "Financial Contracts"
 - Apps in MOST Economic Sectors for Peer-to-Peer
 On-Line Trading with NO Central Authority...
 - Apps from Banks, Governments, & Retail Sectors
- CryptoCurrencies: Virtual Currencies include BitCoin, Ethereum, LiteCoin, Ripple & Zcash
 - Now more than 1000 Virtual CryptoCurrencies!....
 - BitCoin is still most widely traded Virtual Currency
- ... BlockChain Apps may improve CyberSecurity for On-Line Trading & Financial Contracts!...



BlockChains & CryptoCurrencies



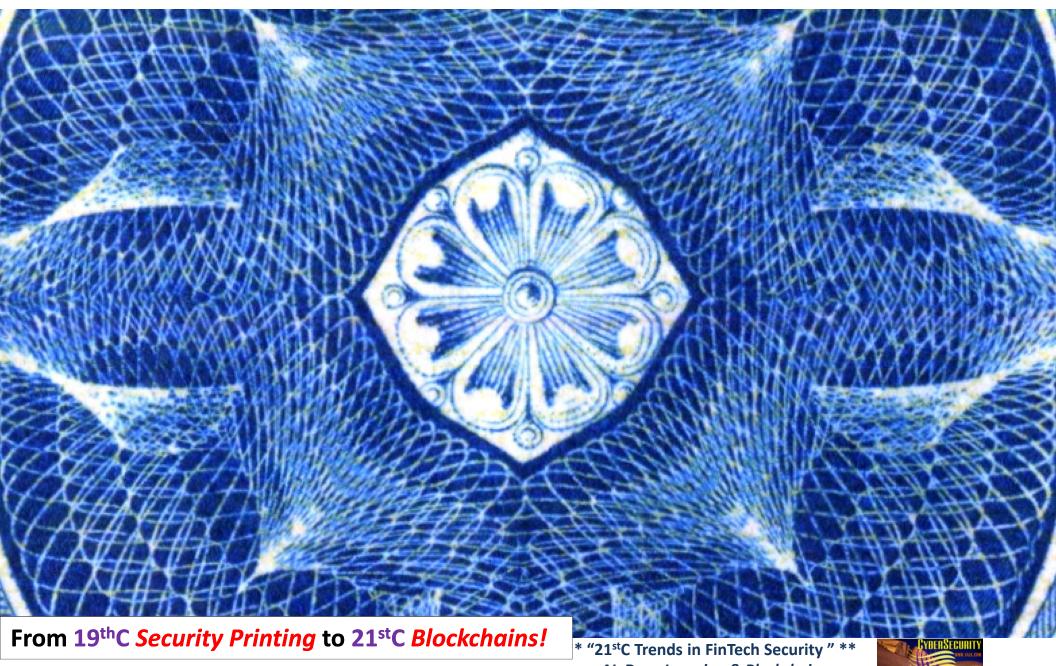
BlockChains & CryptoCurrencies



** "21stC Trends in FinTech Security " **

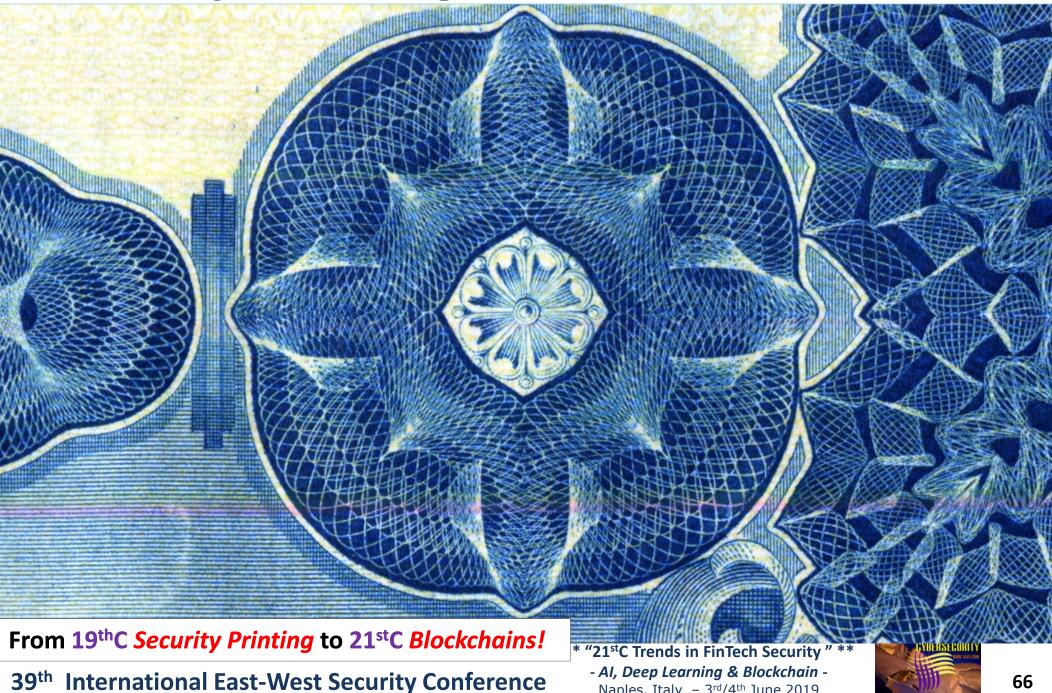
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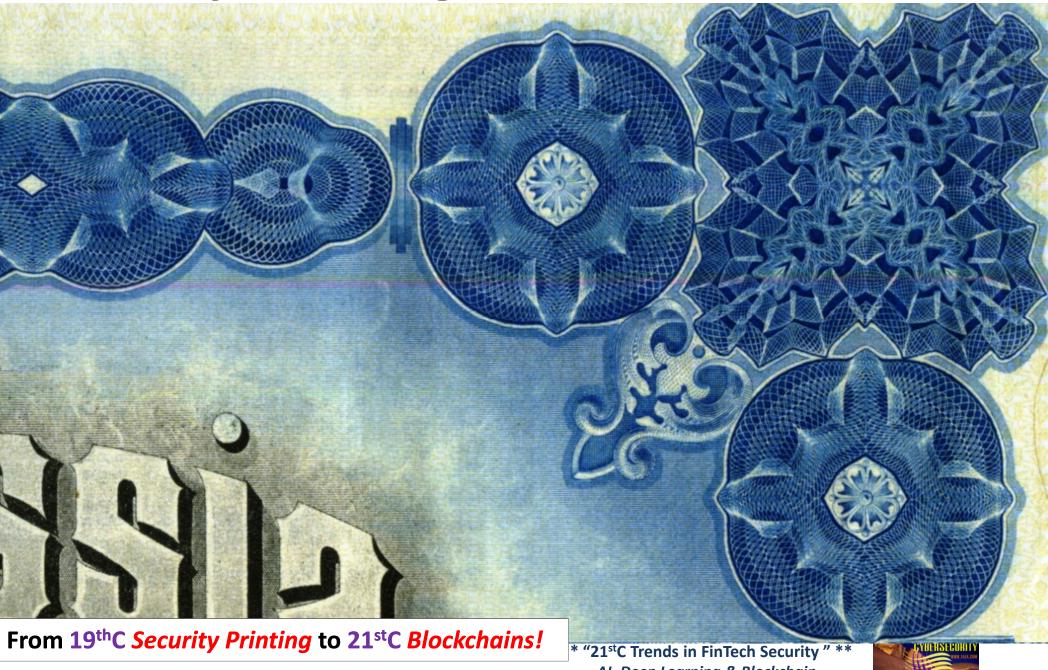


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From 19th C Security Printing to 21st C Blockchains!

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New Russia Company Limited: "Юзовка"



Steel Works : Юзовка - c1890

"Hughsovka" -now "Donetsk"

Great Grandfather: Edwin James Williams

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19thC "Troika Trip" Near "Hughesovka/ Юзовка" with Great Grandfather (Edwin James Williams)



Troika" — Near Hughesovka (now Donetsk, Ukraine) – c1890 – www.Valentina.Net/e-archive.html

Blockchain: Secure & Trusted Transactions

- Crypto Currencies: Blockchain achieved "fame" with launch of Bitcoin & other Cryptos from 2009
- Distributed Ledger Technology(DLT): FinTech now using Blockchain in multiple Cyber Applications:
 - Digital Identity Authentication
 - Business & Client Credit Reports
 - Regulated Crowd Funding through ICOs
 - On-Line Trading: Shares, Bonds, Hedge Funds
 - Syndicated Lending & Anti-Money Laundering

....Blockchain & DLT can be used across FInTech
Sector to boost security & trust by augmenting & upgrading existing Financial Accounting Apps...

THE MARCH OF FINANCIAL SERVICES FIRMS INTO BITCOIN & BLOCKCHAIN STARTUPS 2014 - 2017 YTD (2/13/2017) Master Card **BNP PARIBAS** BBVA MIAX Technologies PICAP VENTURES Deloitte. MSIG **bpifrance** DEUTSCHE BÖRSE GROUP ENTURES ABN-AMRO MUFG Ventures J.P.Morgan Standard Capital Chartered NYSE DATHCHILLIFE Goldman Sachs CreditEase Growth Ventures WEDBUSH Nasdad **FISCO citi** VENTURES MIZUHO CME Group F'PRIME 中国信贷 CREDIT CHINA accenture Money Partners Strategic Ventures SBI GROUP

DATE OF DEAL

Jun-15

www.cbinsights.com

Jun-14



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Jun-16

Jan-16

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Jan-15

Jan-17

Malta: BlockChain Business & Regulations

FinanceMalta Effective | Secure | Skilled

Malta: Destination Blockchain Island

With its move to regulate Distributed Ledger Technologies, Malta is positioning itself as the go-to place for innovative fintech companies and blockchain entrepreneurs.

WHY MALTA?

Malta is the first country in the world with clearly established regulatory frameworks for DLTs, ICOs and virtual currencies.

Crypto exchanges, ICO platforms and developers of blockchain-based tools and applications have either relocated or established new offices on the island. Financial services companies can work with some of the biggest and brightest



ANX Intl Binance **BitBay Bittrex** Chiliz **KSiMalta** NewFund Okex **TRON** YOVO

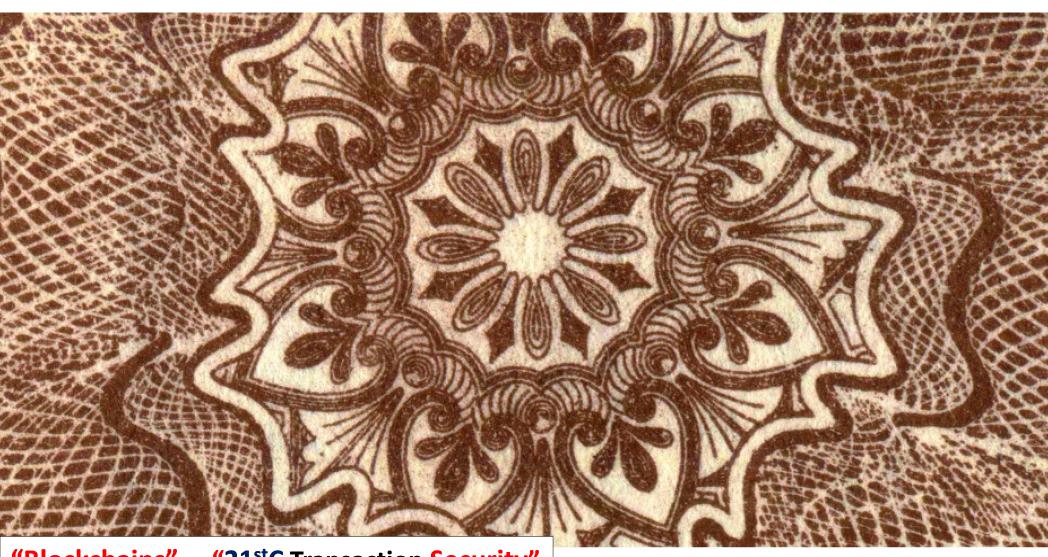
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Security Printing: Russian Bond - 1912



"Blockchains" = "21stC Transaction Security"

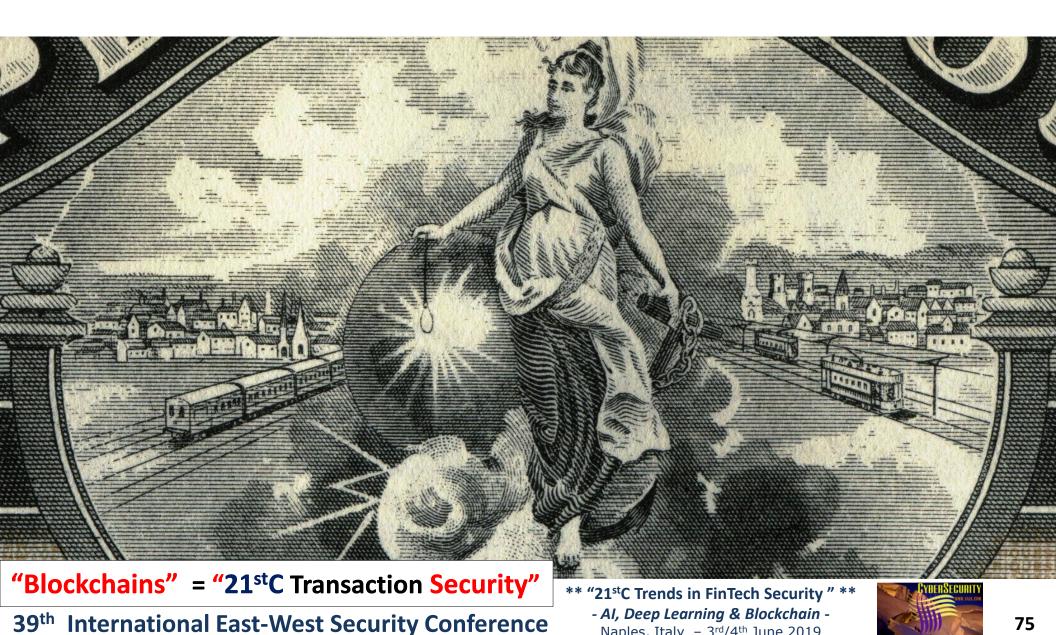
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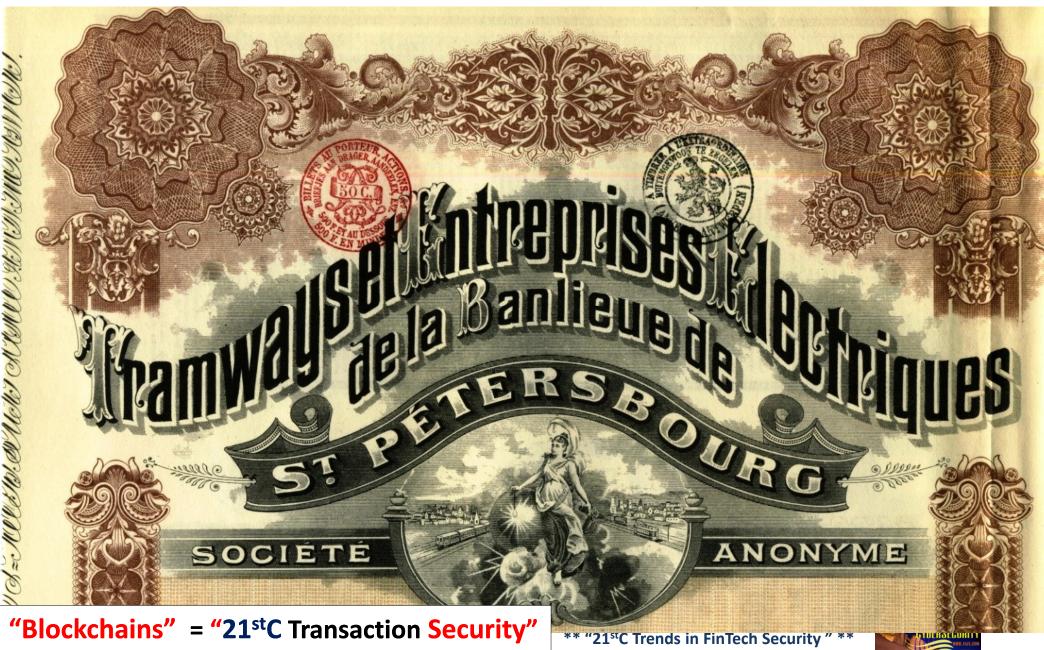
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Security Printing: Russian Bond - 1912



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Security Printing: Russian Bond - 1912



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Security Printing: Odessa Bond - 1913



Financial Security Printing started Mid-19th C...

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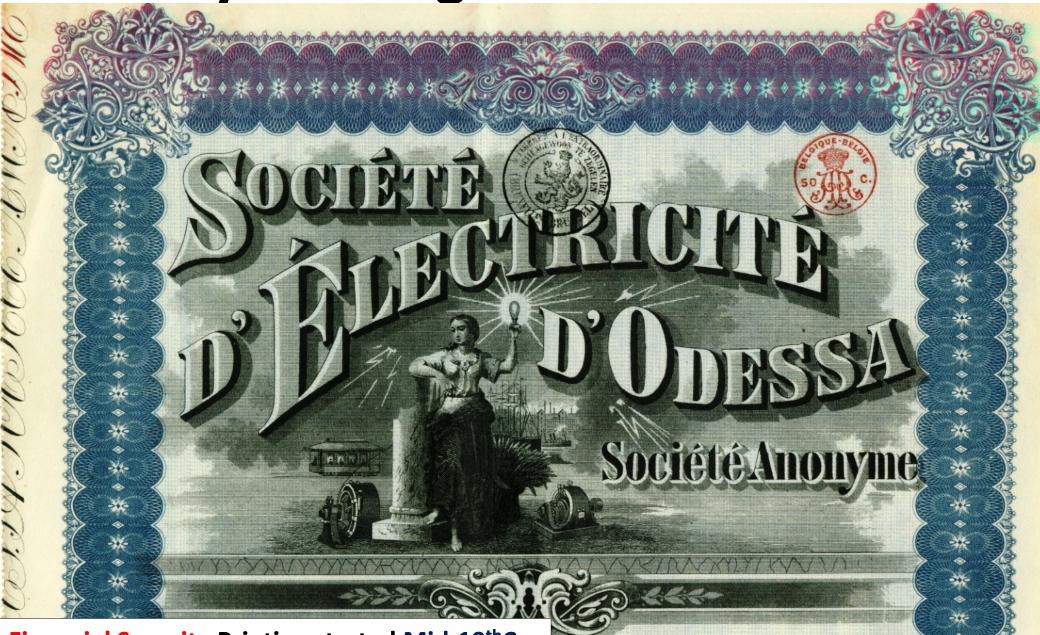
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Security Printing: Odessa Bond - 1913



Financial Security Printing started Mid-19th C..

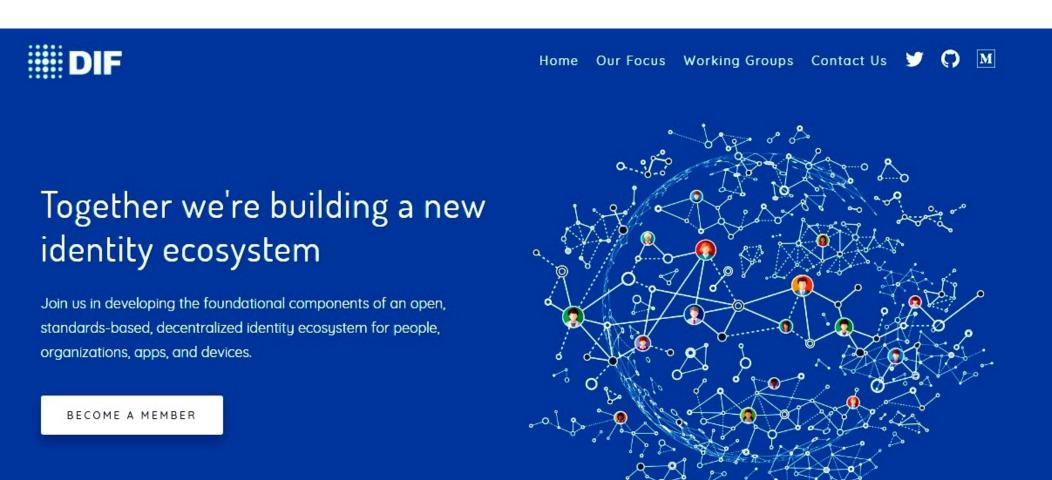
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Decentralised Identity Foundation (DIF)



DIF: "Open Source" ID EcoSystem - Founded May 2017



M





























































































































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Counter-Fraud: AI & Big Data Analytics

- Massive Global FinTech Transaction Growth requires Innovative Intelligent Analysis Apps:
 - Fraud Alerts: Al Analysis of "Big FinTech DataSets"
 - Anti-Money Laundering(AML): Al Compliance Apps
 - Counter-Terrorism Financing(CFT): AI/ML Detection
 - Client ID Authentication & Account Verifications
 - Real-Time Detection of Anomalous Transactions
 - On-Line Alerts for possible Insider Fraud & Trading

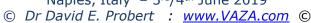
..."Big Data Analytics" provides FinTech with new asset to mitigate Fraud & boost CyberSecurity!...



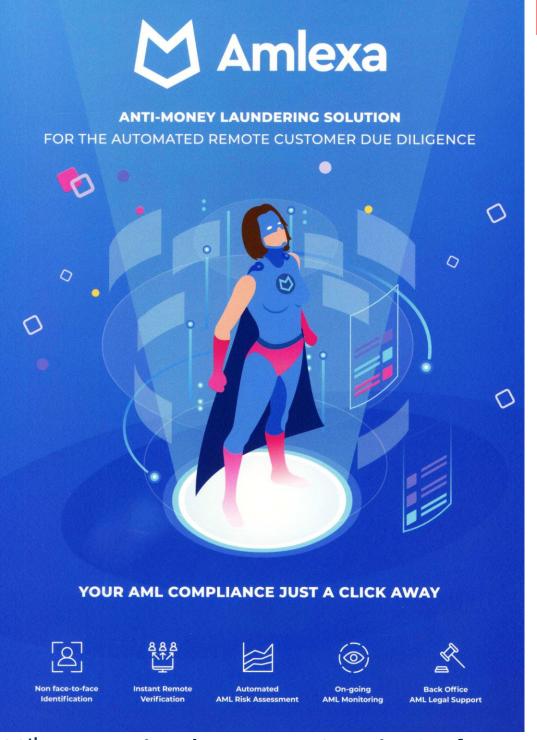
Counter-Fraud: AI & Big Data Analytics



⁻ Al, Deep Learning & Blockchain -Naples, Italy - 3rd/4th June 2019







Intelligent Customer Finance Assessment

Identification
Verification
Assessment
Monitoring
Back Office

Al Enabled Due Diligence

AML: Anti-Money Laundering

CFT: Counter Terror Finance

KYC: Know Your Customer

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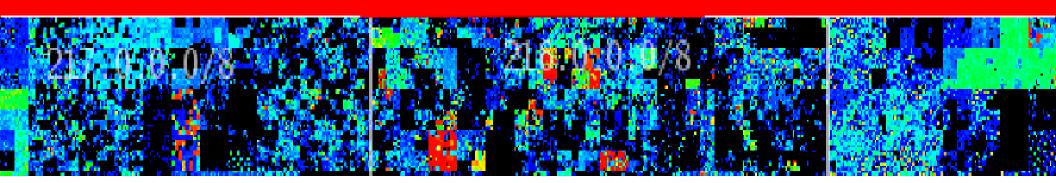
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CYDENSECURITY

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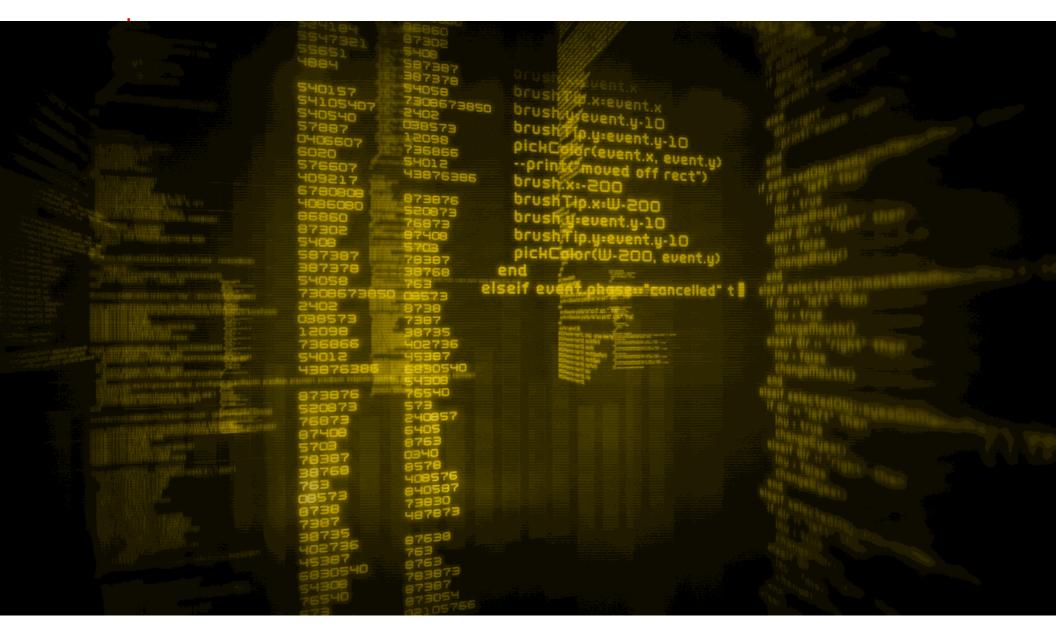


8-From 20thC Banks to 21stC FinTech "Intelligent *Cyber* Tools"





FinTech: Intelligent Cyber Security & Trust!







FinTech: Intelligent Cyber Security & Trust!

- 20th Financial Services: Physical Banks, Electronic Networked Communications & Spreadsheets
- 21stC FinTech/FinServ: Digital Banks, Intelligent Real-Time Mobile Apps, Analytics & Blockchains
- CyberSecurity: Intelligent Real-Time Detection of CyberCrime, Malware, CyberThreats & Attacks
- Cyber Trust: Mitigation & Prevention of Business Fraud, Money-Laundering and Terrorist Financing

....Intelligent FinTech Apps (AI/ML) provide new 21st Solutions to meet Compliance & Regulations Acts!





KPMG - FinTech - March 2019 -

- CyberSecurity
- Crypto Assets
- BlockChains...
- Data and Al...

Fintech regulation



Drivers



Risks



Regulatory responses

Fintech adoption

- Increasing reliance on technology
- Increasing interconnectedness and complexity
- Economies of scale in IT applications

Risks to consumers

- · Lack of consumer understanding
- Mis-selling of products and services
- Financial exclusion
- Data privacy, security and protection

Regulatory perimeter

- Consumer protection
- Data protection, security and privacy

Risks to firms

- Business model viability
- Governance
- Technology risk and operational resilience
- Data handling
- Conduct and AML
- Legal

Regulatory perimeter

- Governance
- Risk management
- Operational resilience

Risks to financial stability

- Concentration
- Alternative channels of financial intermediation
- Herd-like behaviour
- · Use of crypto assets
- · System-wide vulnerabilities



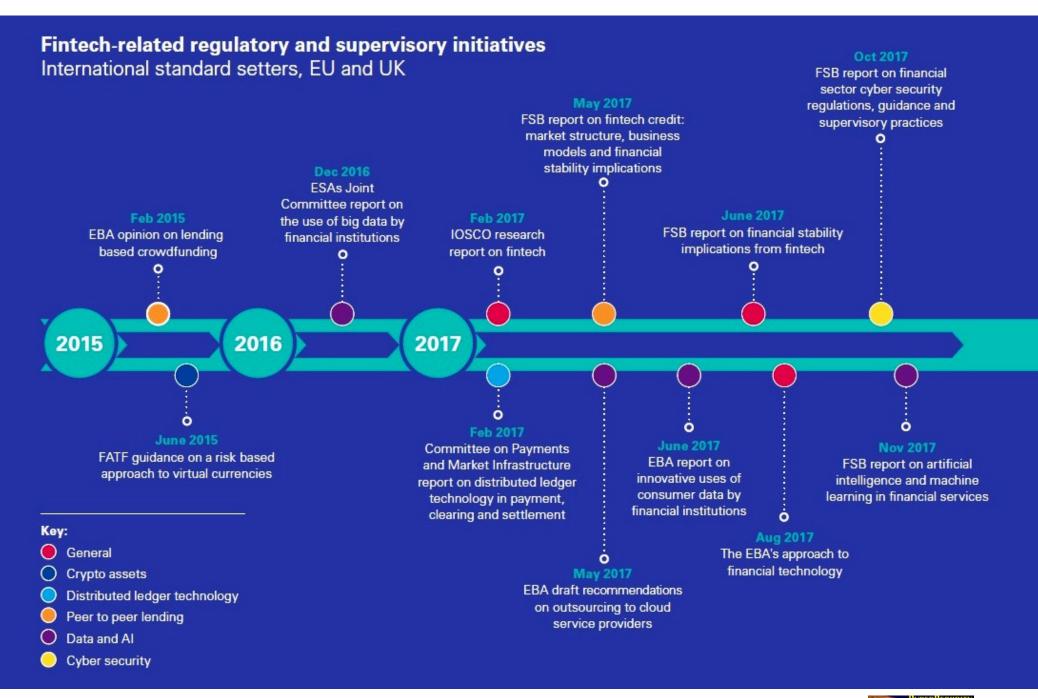
- Data and information gathering and analysis
- Emerging regulatory interventions



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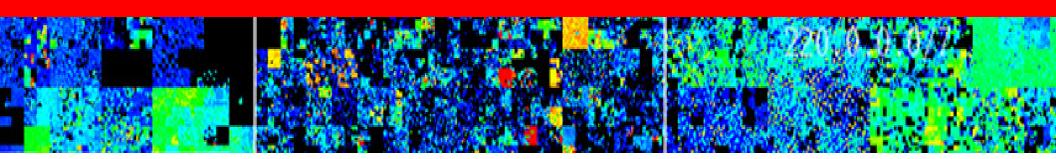
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9 – Fin Tech Plans for YOUR Business!... "NEW Security Toolkit"



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YOUR Fintech CyberSecurity RoadMap!

- Every Business & Government Agency needs to upgrade Cybersecurity for 21stC Fintech!...
- Phase 1 Audit: Review CyberSecurity for all Financial Accounting & Banking Transactions
- Phase 2 Plan: Develop Top-Level RoadMap & Practical Multi-Year \$\$\$ Investment Plan
- Phase 3 Execute: Upgrade YOUR Business Financial Security Operations, Fraud & Insider Trading Detection with Intelligent 21stC Apps

....FinTech "Cyber Upgrade" should be executed by Chief Finance (CFO) & Chief Security Officer (CSO)



"Cyber Defence" against "Alien Invaders"



21stC Trends in FinTech Security

- AI, Deep Learning & Blockchain! -

Intelligent & Adaptive
FinTech CyberTools will
Provide "Speed of Light"
Real-Time Defence against
TOP 10 Threats & Attacks!



"Steam Powered Birds arrive over our Cities!" - 1981

Pen & Ink Drawing by Dr Alexander Rimski-Korsakov (1936 – 2018)

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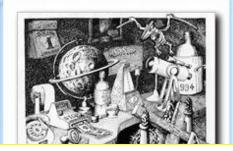






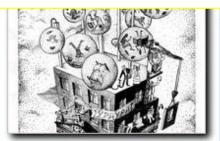








The Surrealistic Paintings of Dr Alexander Rimsky-Korsakov



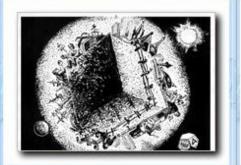










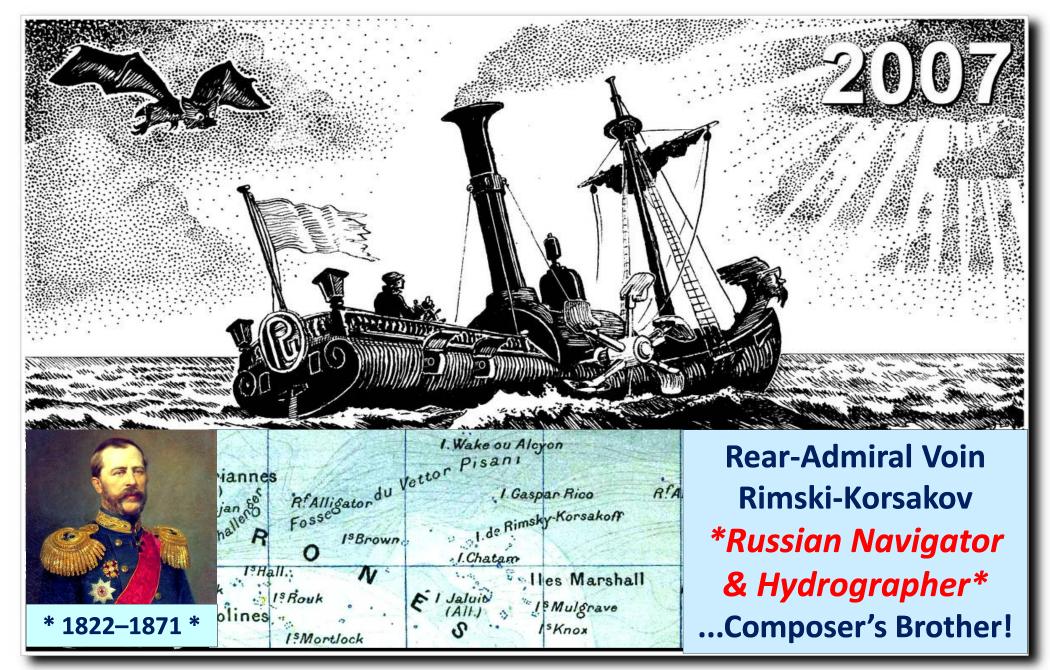




Web Link: www.valentina.net/ARK3/ark2.html

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Pen & Ink Painting by Dr Alexander Rimski-Korsakov: "Navigating the Oceans & Hidden Threats"

Radium Institute Calendar - 2007 –St Petersburg

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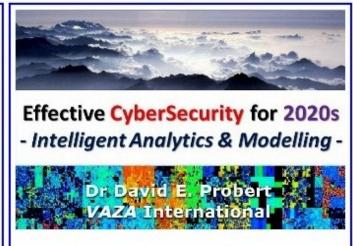


21stC FinTech, Surveillance & Futures!

"21stC CyberSecurity": Fintech, Video & 2020s!...







(1) FinTech Security

(2) Video Surveillance

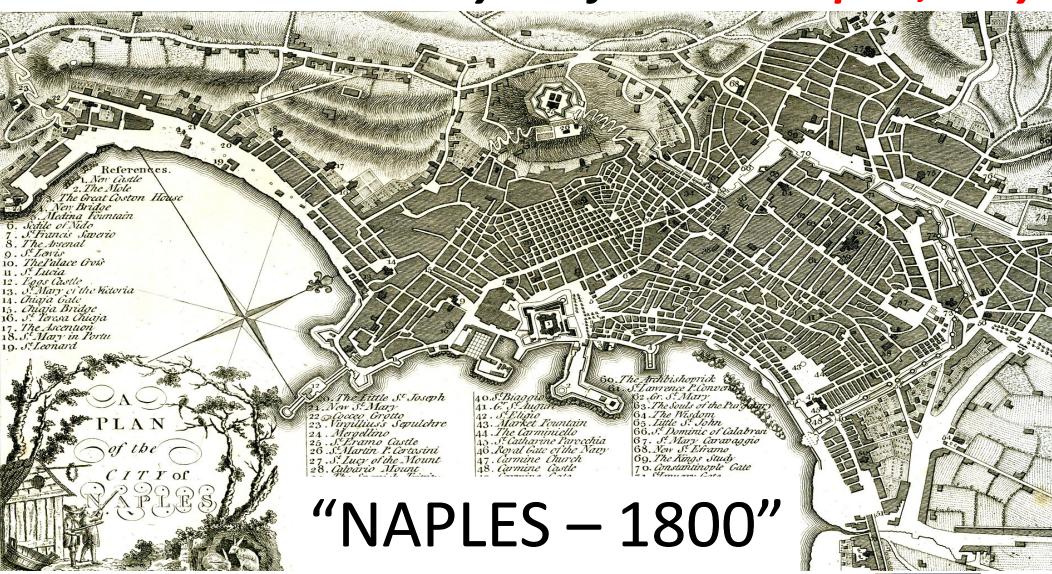
(3) CyberFutures: 2020s+

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Download Cyber Slides: www.valentina.net/NAPLES2019/

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Thank you for your time!

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Additional Cybersecurity Resources



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Professional Profile - Dr David E. Probert

- Computer Integrated Telephony (CIT) Established and led British Telecom's £25M EIGER Project during the mid-1980s' to integrate computers with telephone switches (PABX's). This resulted in the successful development and launch of CIT software applications for telesales & telemarketing
- Blueprint for Business Communities Visionary Programme for Digital Equipment Corporation during late-1980's that included the creation of the "knowledge lens" and "community networks". The Blueprint provided the strategic framework for Digital's Value-Added Networks Business
- European Internet Business Group (EIBG) Established and led Digital Equipment Corporation's European Internet Group for 5 years. Projects included support for the national Internet infrastructure for countries across EMEA as well as major enterprise, government & educational Intranet deployments. Dr David Probert was a sponsoring member of the European Board for Academic & Research Networking (EARN/TERENA) for 7 years (1991 → 1998)
- Supersonic Car (ThrustSSC) Worked with Richard Noble OBE, and the Mach One Club to set up and manage the 1st Multi-Media and e-Commerce Web-Site for the World's 1st Supersonic Car ThrustSSC for the World Speed Record.
- **Secure Wireless Networking** Business Director & VP for Madge Networks to establish a portfolio of innovative fully secure wireless Wi-Fi IEEE802.11 networking products with technology partners from both UK and Taiwan.
- **Networked Enterprise Security** Appointed as the New Products Director (CTO) to the Management Team of the Blick Group plc with overall responsibility for 55 professional engineers & a diverse portfolio of hi-tech security products.
- **Republic of Georgia** Senior Security Adviser Appointed by the European Union to investigate and then to make recommendations on *all* aspects of IT security, physical security and BCP/DR relating to the Georgian Parliament, and then by UN/ITU to review Cybersecurity for the Government Ministries.
- UN/ITU Senior Adviser Development of Cybersecurity Infrastructure, Standards, Policies, & Organisations in countries within both Europe & Americas

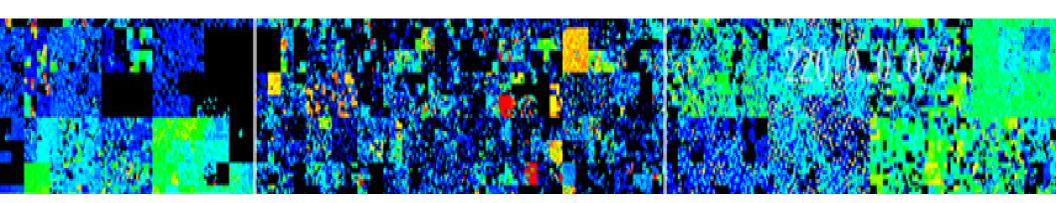
Dr David E. Probert is a Fellow of the Royal Statistical Society, IEEE Life Member and 1st Class Honours Maths Degree (Bristol University) & PhD from Cambridge University in Self-Organising Systems (Evolution of Stochastic Automata), and his full professional biography is featured in the Marquis Directory of Who's Who in the World: 2007-2020 Editions



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BACK-UP SLIDES



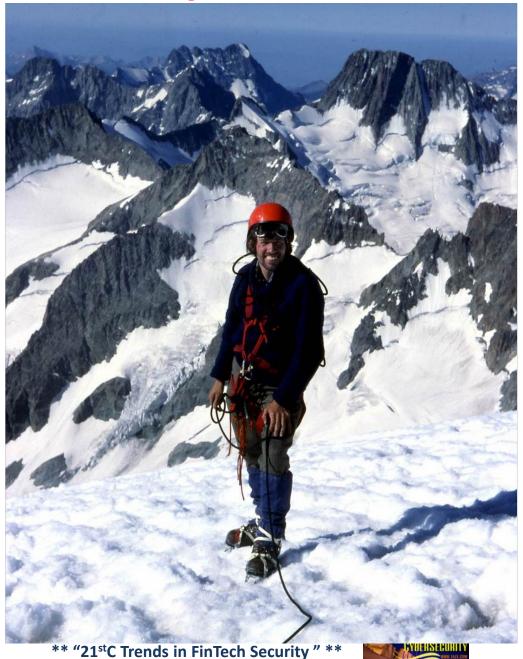
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Security Equipment for Alpine Ascents





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Security Equipment includes: 50m Rope, Steel Crampons, Ice-Axe & Screws, Karabiners, Helmet...

15th Sept 2015: « 7 Alpinistes killed in Avalanche »

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