SECURING FINTECH AND DISRUPTIVE TECHNOLOGIES

Presentation at the

13TH INTERNATIONAL CONFERENCE

of the

Theme:

'INFORMATION TECHNOLOGY INNOVATION FOR SUSTAINABLE DEVELOPMENT"

by:

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Chida International Hotel, Abuja, FCT Nigeria
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Disruptive Technologies

dvances that
ll transform
e, business,
d the global
onomy.
mckinsey.com/business-
ons/digital-
sey/.../disruptive-
ologies

A disruptive technolo
is one that displaces
established technolo
and shakes up t
industry or a groun
breaking product th
creates a complete
new industry. Professor Clayto
Christensen, Harvard Business School, 1997
entitled, The Innovator's Dilemma (Managemen
Innovation and Cha
http://www.amazon.co.uk/gp/product/163369178
=as_li_tl?ie=UTF8&camp=1634&creative=6738&cre
ASIN=1633691780&linkCode=as2&tag=intelligentho

Disruptive Technologies from the Recent Past

ory	Disruptive innovation	Market disrupted by innovation
	Wikipedia	Traditional encyclopaedias
ation	Telephony	Telegraphy
	Minicomputers Personal computers Pocket calculator Digital calculator Smartphones	Mainframes Minicomputers, Workstations. Word processors, Lisp machines 3.5 standard calculator[1] Mechanical calculator Personal computers, laptops, PDAs 14 inch hard disk drive
ge	8 inch floppy disk drive 5.25 inch floppy disk drive 3.5 inch floppy disk drive CDs and USB flash drives	14 inch hard disk drive 8 inch floppy disk drive 5.25 inch floppy disk drive Bernoulli driveand Zip drive
	Light-emitting diodes LCD LED displays	Light bulbs CRT
ring	Hydraulicexcavators Mini steel mills Plastic	Cable-operated excavators Vertically integrated steel mills Metal, wood and glass
	Ultrasound	Radiography(X-ray imaging)

Category	Disruptive innovation	Market disrupted by
Music	Digital synthesizer Gramophone Downloadable Digital media/ Online	Electronic organ, electric piano and pian Pianola CDs, DVDs
Photography	Digital photography High speed CMOS video sensors	Chemical photo Photographic f
Publishing	Computer printers Desktop publishing Word Processing	Offset printing Traditional pub Typewriter
Transportation	Steamboats Automobiles/ Cars High speed rail Private jet	Sailing ships Rail transport Short distance Supersonic tra

://en.wikipedia.org/wiki/Disruptive_innovation

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Landscape of Contemporary Disruption

Legend

Mass adoptio
disruptive
technologi

ernet of
hings

Autonomous Systems

Machine Learning

Big Data Analytics

Transportation & Infrastructure

Public Safety/ Security

Health Care/ Life Sciences

Finance

Industrial/ Manufacturing

Education

Key
sector
and
marke

Cyber Security

Privacy

Regulation

Citizen Trust

External Forces

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ve Commons BY-NC-SA 2.0; Michael Sean Gallagher, Creative Commons BY-SA 2.0; Office.com

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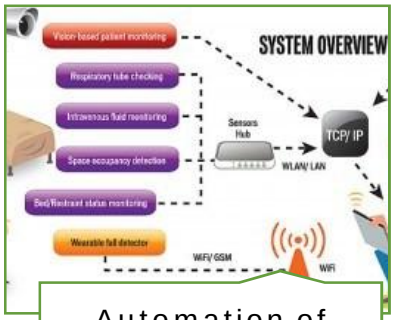
Examples of Disruptive Technologies

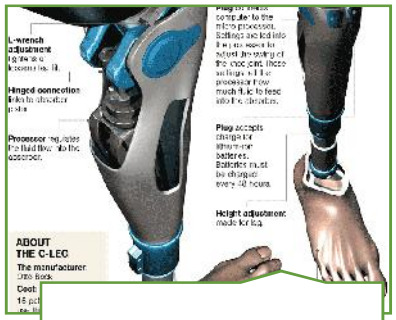
Internet



Automation of knowledge work

Internet of Things

Advanced Virtual Reality



Advanced Robotics

Art Intel

kchain nology:

Cloud

Autonomous or Near-Autonomous Vehicles

Next-generation Genomics

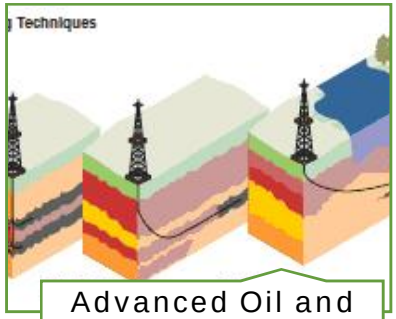
Medical Innovations

Next ge Sto

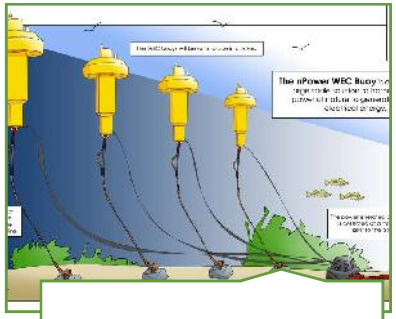
rinting

High-Speed Travel

Materials



Advanced Oil and Gas Exploration and Recovery



Renewable Energy

Space Co

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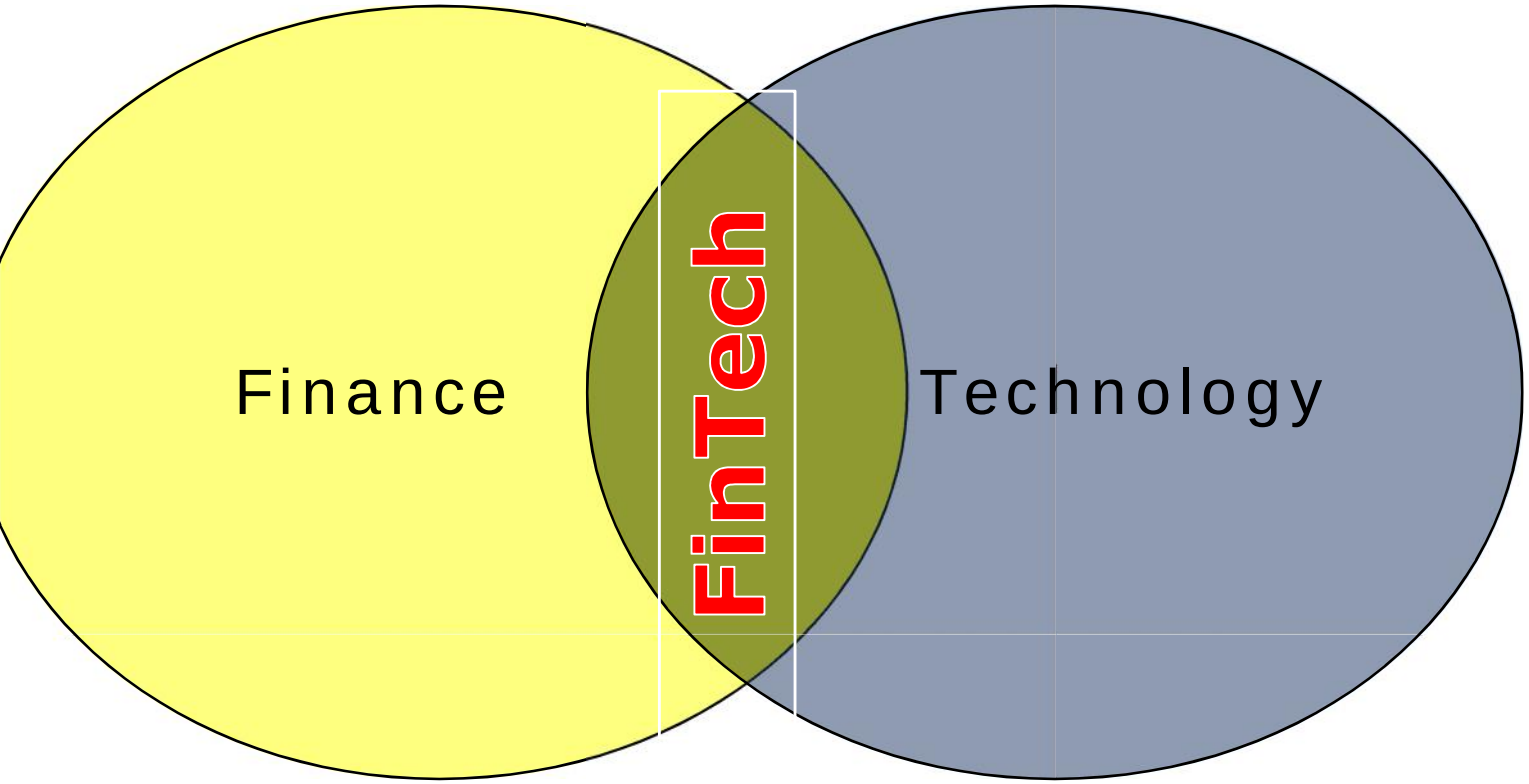
FinTech: Disruptive Innovation in Financial Sector



- Meeting Cust needs
- Disrupting traditional fina structures business mode

21st Century Phenomena

nology
rs:

- Machine learning and cognitive computing
- Digital currencies and blockchain
- Big data analytics, optimisation and fusion
- Distributed systems, mobile payments and peer-to applications

ve Smith https://www.ashburnham-insurance.co.uk/blog/2015/11/what-is-fintech-a-simple-explanation/ Abdul-Hakeem Ajijola (.AhA) info@consu

Scope of Fintech

Core Components

Financial ducation

Retail Banking

nvesting

Crypto-currencies

Examples

tock trading

Peer to peer lending

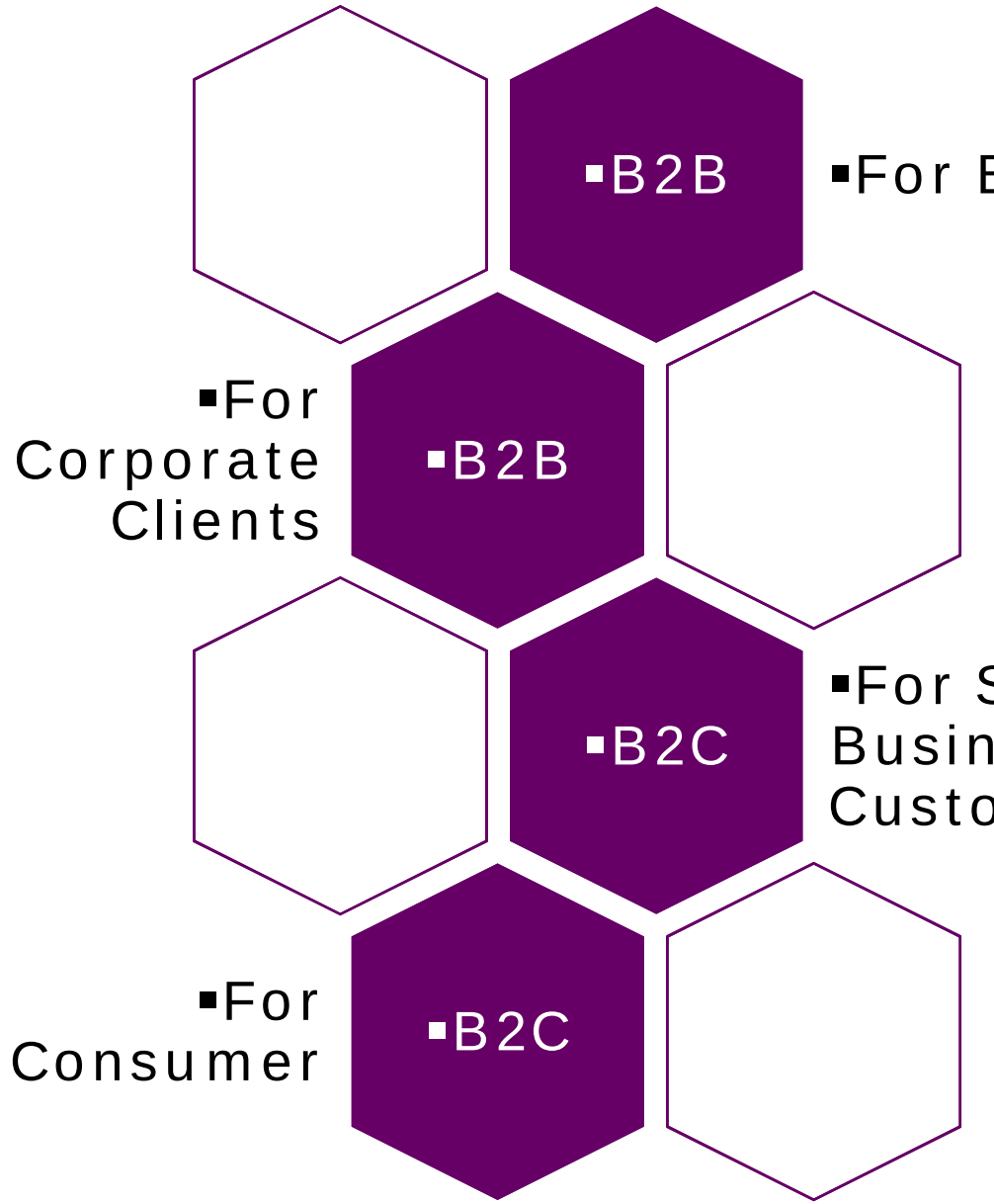
Robo advisory services

All-in-one online personal finance management

udgeting tools

ww.investopedia.com

Users



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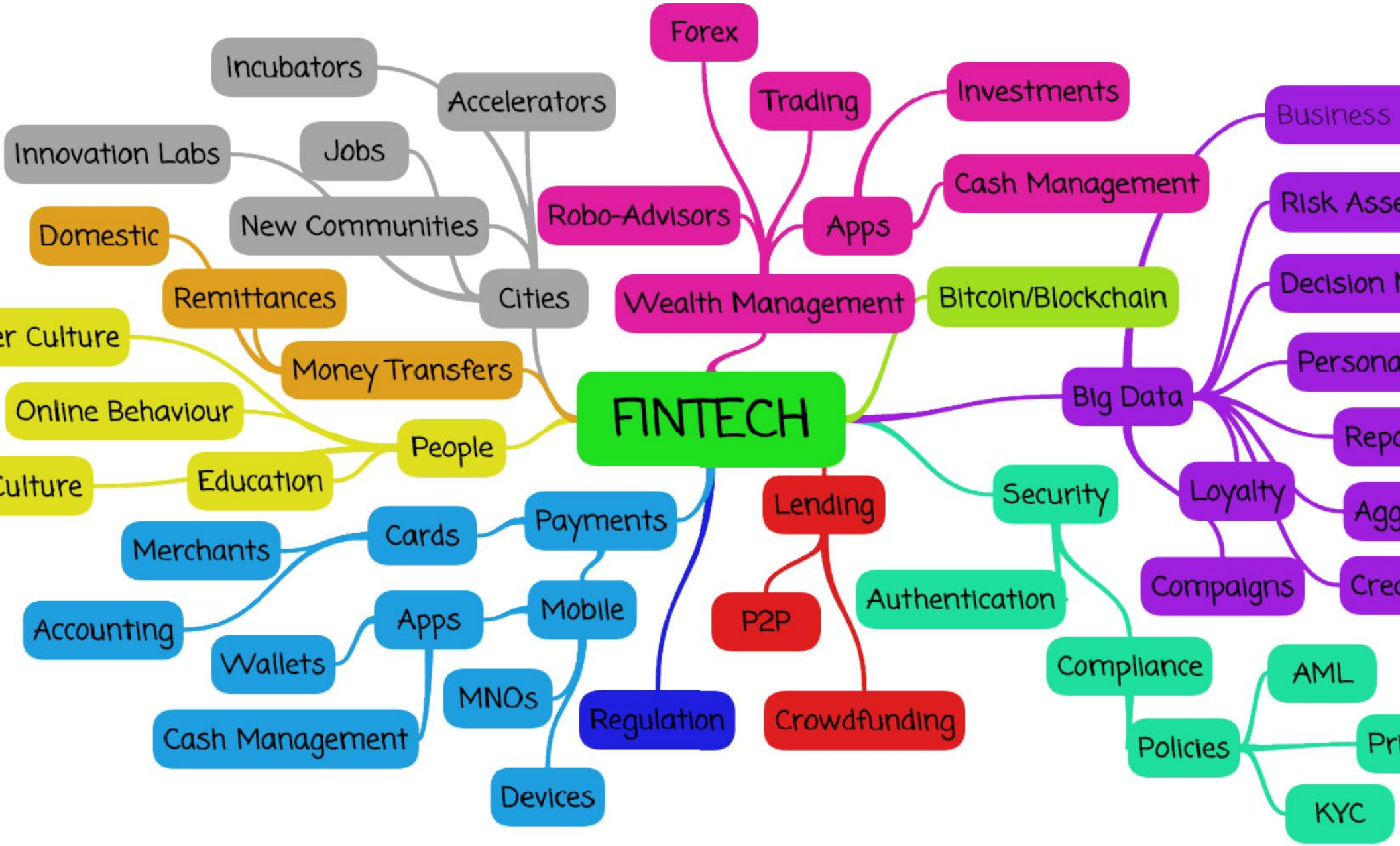
FINTECH ECOSYSTEM



://fintechinfo.com/fintech-mind-map/?utm_content=buffer6ba6e&utm_medium=social&utm_source=pinterest.com&utm_campaig

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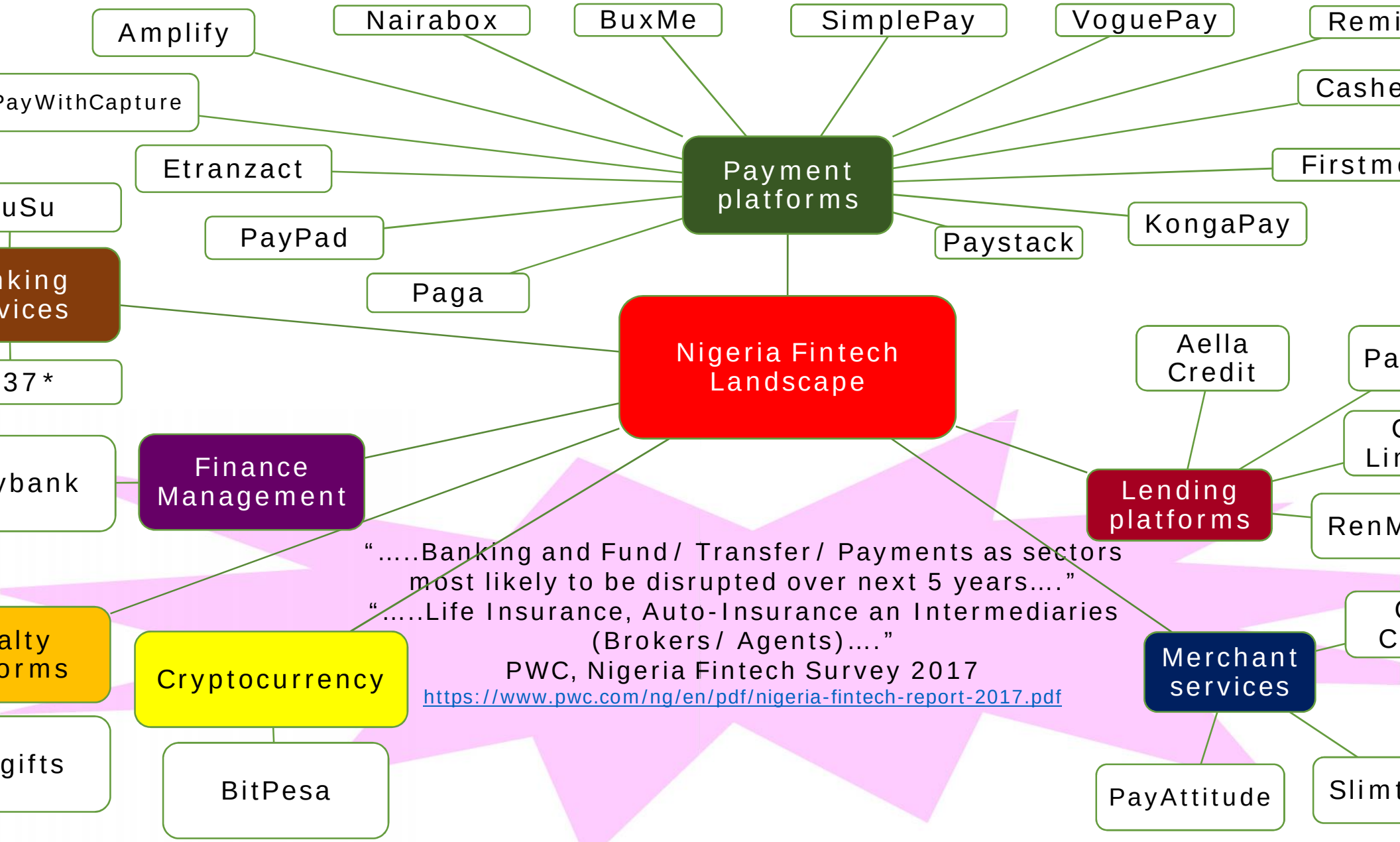
Nigeria Fintech Landscape



id Adeleke https://techpoint.ng/2016/06/24/fintech-landscape-nigeria/

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Safeguarding Financial Stability & Fostering Fintech

te the ethical use of data

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cial system

Set up forum for public-private dialogue

Identify areas where regulations & technology advancement is needed to enhance Fintech stability

Proactively set industry standards

Redefine & enforce an approach to good conduct in light of new technology-enabled innovations

Monitor & understand Fintech innovation

Ensure that stakeholders are well equipped to mitigate risks arising from Fintech

rld Economic Forum, https://www.weforum.org/agenda/2016/04/5-things-you-need-to-know-about-fintech/

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SECURITY

e state of being free from danger or threat

s://en.oxforddictionaries.com/definition/security

formation munication chnology	Physical	Political	Monetar
rsecurity munications rity puter rity net security cation rity security rmation rity ork security oint security	• Airport security • Corporate security • Food security • Home security • Infrastructure security • Personal security • Port security • Supply chain security • Transportation security	• National security • Public security • Homeland security • Internal security • International security • Human security • Food Security	• Economic security / financial sec • Social secur

ps://en.wikipedia.org/wiki/Security

SECURITY CONCEPTS

Assurance	• Level of guarantee that a security system w behave as expected
ntermeasure	• A way to stop a threat from triggering a risk event
nce in depth	• Never rely on one single security measure a
Risk	• A possible event which could cause a loss
Threat	• A method of triggering a risk event that is dangerous
Vulnerability	• A weakness in a target that can potentially exploited by a security threat
Exploit	• A vulnerability that has been triggered by a threat - a risk of 1.0 (100%)

s://en.wikipedia.org/wiki/Security

CYBERSPACE

erspace is an environment that combines

eople, Processes & Technology

erspace is not borderless:

erceived as borderless because its borders are seamless
ne end user.

very country has its own cyberspace which is defined by
ational infrastructure.

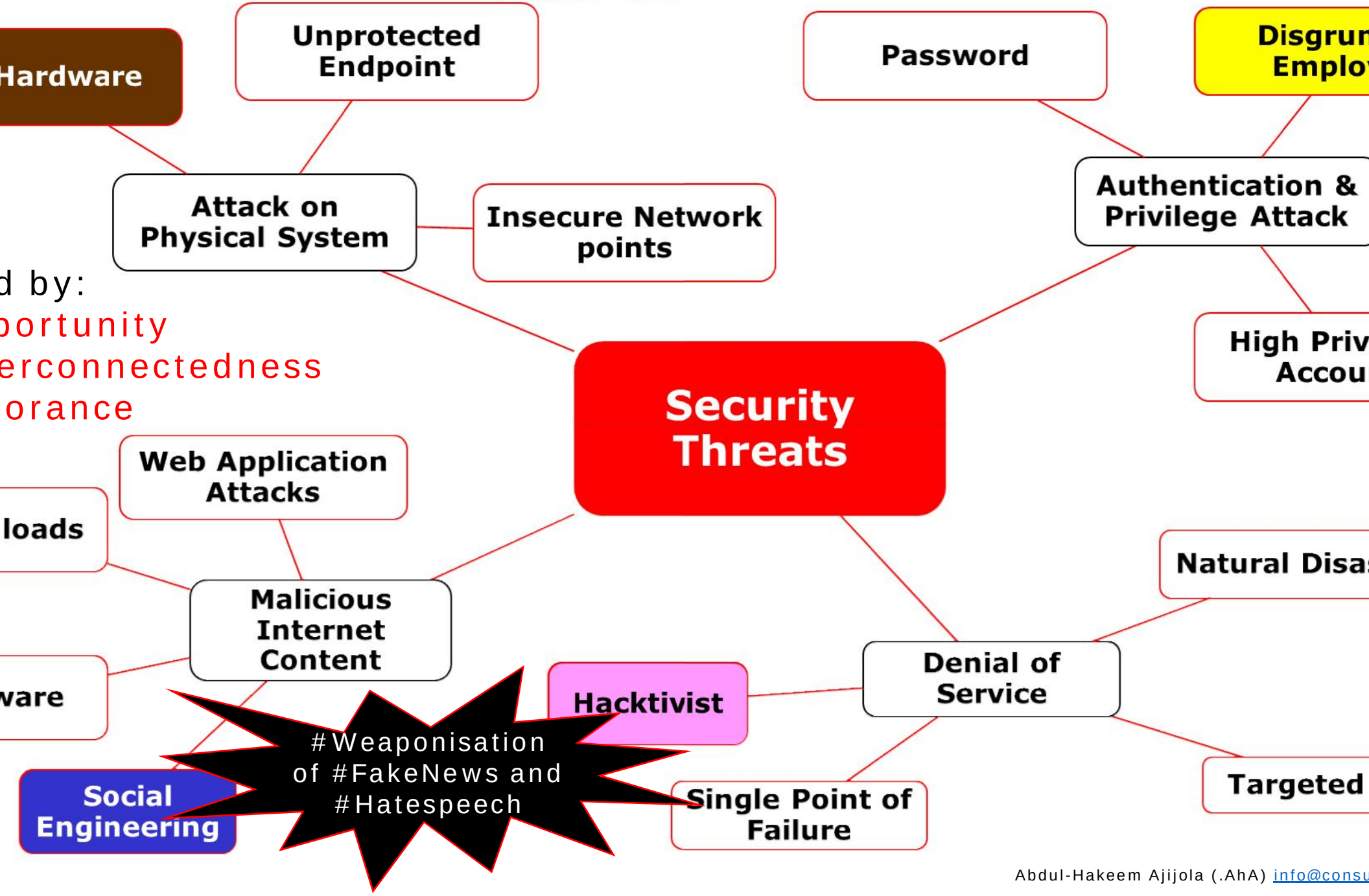
lications:

nreat actors carry out their activities in an apparently
eamless environment,

aw Enforcement Operatives are constrained by issues of
risdiction.

eria through the 2015 National Cybersecurity Policy & the
onal Cybersecurity Strategy recognizes cyberspace as th
lomain of warfare after Land, Sea, Air & Outer-space.

CYBER "THREAT" SPACE



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Cybersecurity vs. Cyber-Crime

ybersecurity

Protection of assets against risks within, & from, the electronic environment

Risk Management

An Economic Problem

- Cyber-Crime
  - Conduct prohibited by law, prescribed punishment, carried using digital systems computers, electronic, ancil devices, processes and/ procedures

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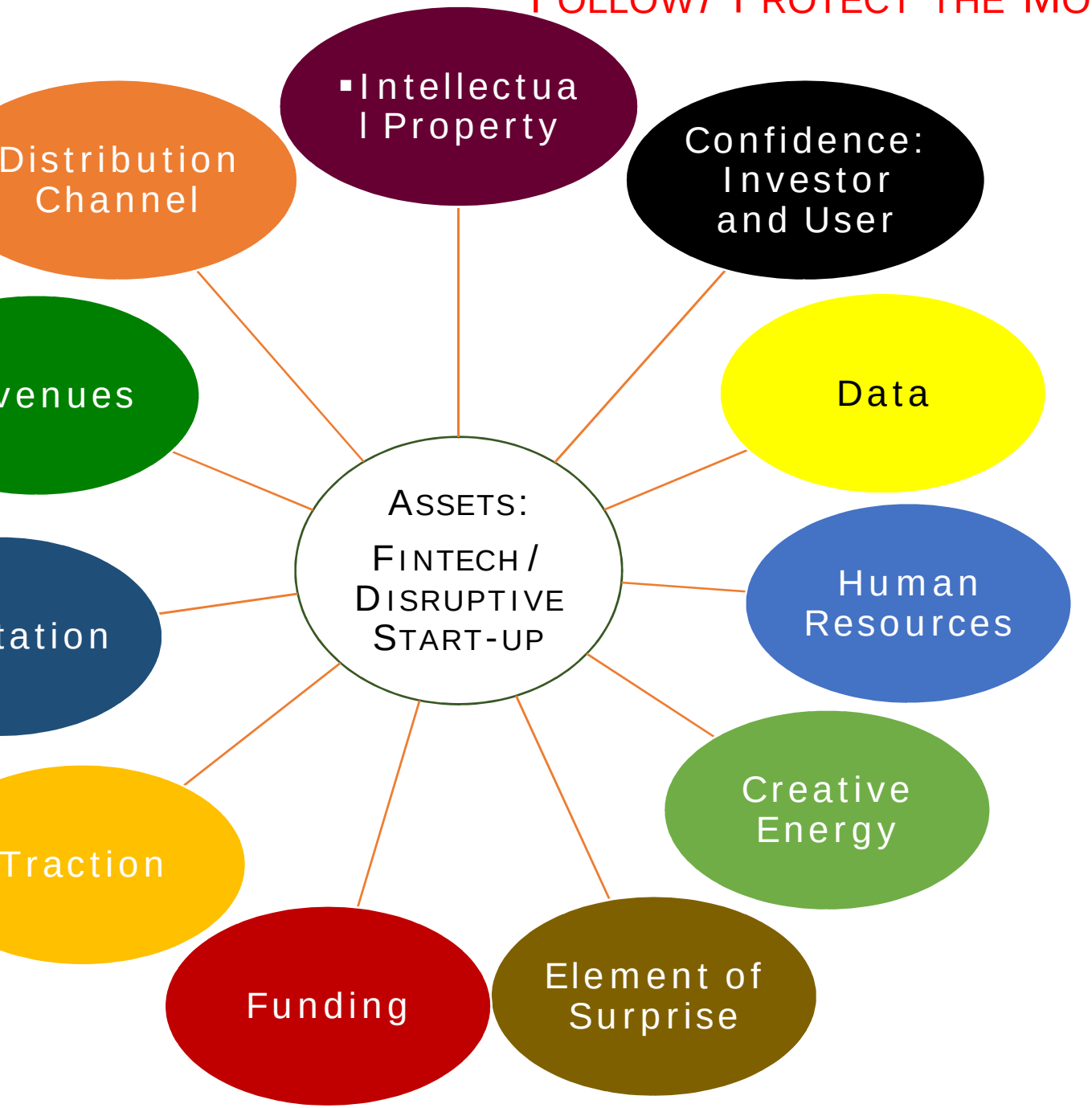
FOLLOW/ PROTECT THE MONEY



Knowledge isn
power until it i
applied
Dale Carnegie

Disruption (4D's)
Asset Managem
Industry:

- Digitalisation,
- De-risking,
- Disintermediat
- Democratisatio

JR Lowry, EMEA head of
Street Global Exchan

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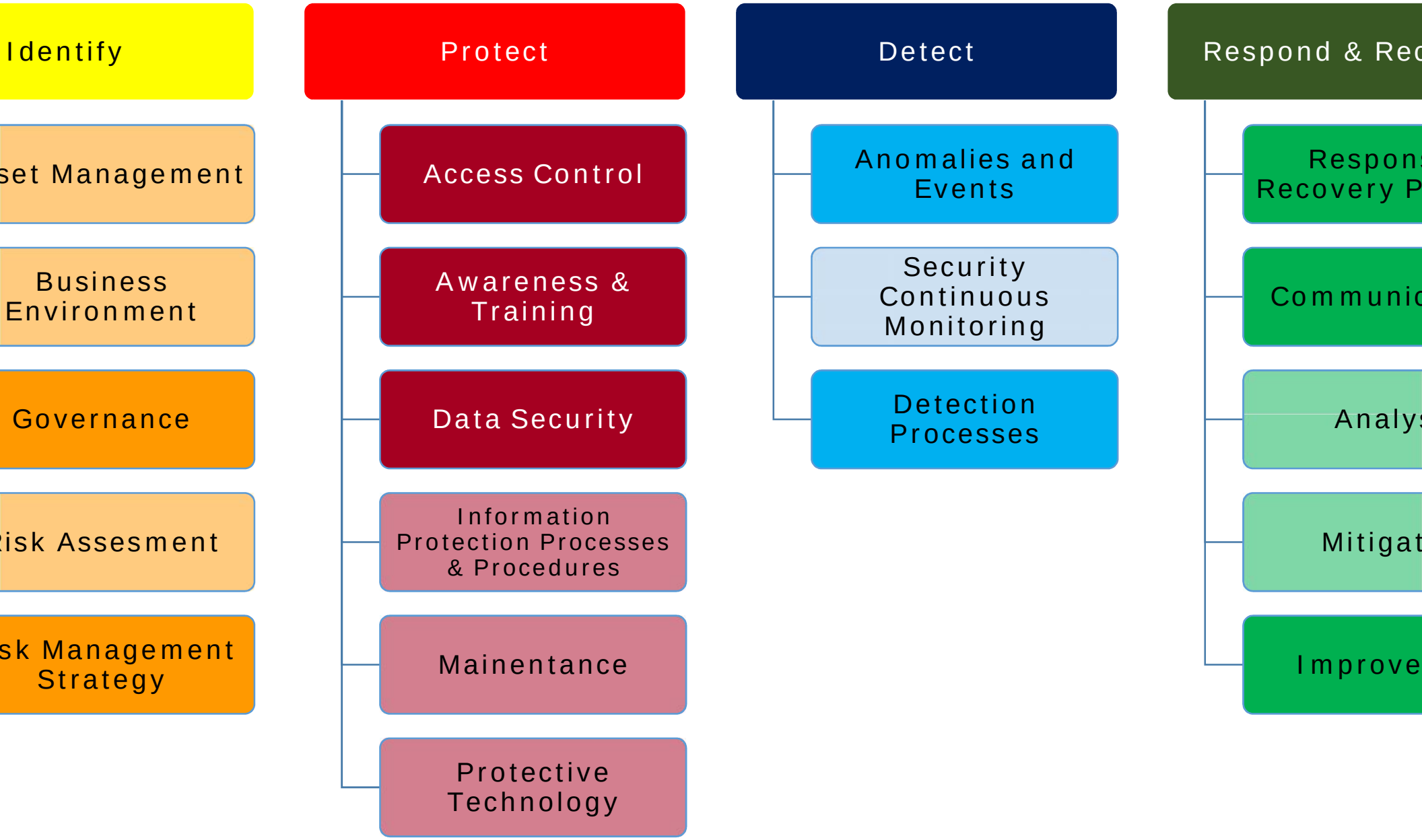
CYBERSECURITY FRAMEWORK



://www.suretyit.com.au/it-services/cybersecuritystrategy/

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Cyber Resilience Action Plan -- Change Begins with Me

Organisational Readiness

Situational Awareness

Cyber Defence

Detection

Mitigation and Containment

Recovery

"The ability of a system or a domain
withstand attacks or failures and in s
events to re-establish itself quickly
Nigel Inkster, USA International Institute of Strategic Stu

Cybersecurity Resilience Maturity Framework

Maturity Descriptor	Employment of Security Controls	Security Tailored to Mission	Participate in Information Sharing (Threat/ Vulnerability)	Response to Cyber Threats	Resilience Attac
Level 5: Resilient	Augment CSC Based on Mission	Mission Assurance Focused	Real-time Response to Inputs	Anticipate Threats	Operate t Sophisti Attac
Level 4: Dynamic	Augment CSC Based on Mission	Mission Focused	Real-time Response to Inputs	Rapid Reaction to Threats	Able to R to Sophis Attac
Level 3: Managed	CSC Integrated and Continuously Monitored	Partially Mission Focused	Respond to Information Inputs	Respond to Attacks After the Fact	Protec Again Unsophis Attac
Level 2: Performed	Foundational Critical Security Controls (CSC) Implemented	Mission Agnostic	Inconsistent Response to Information Inputs	Respond to Attacks After the Fact	Some Pro Again Unsophis Attac
Level 1: No Resilience	Inconsistent Deployment of Security Controls	None	None	No Response	Suscepti Unsophis Attac

n Gilligan, President and Chief Operating Officer at Schafer Corporation

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Core Organizational Strategy

Approach

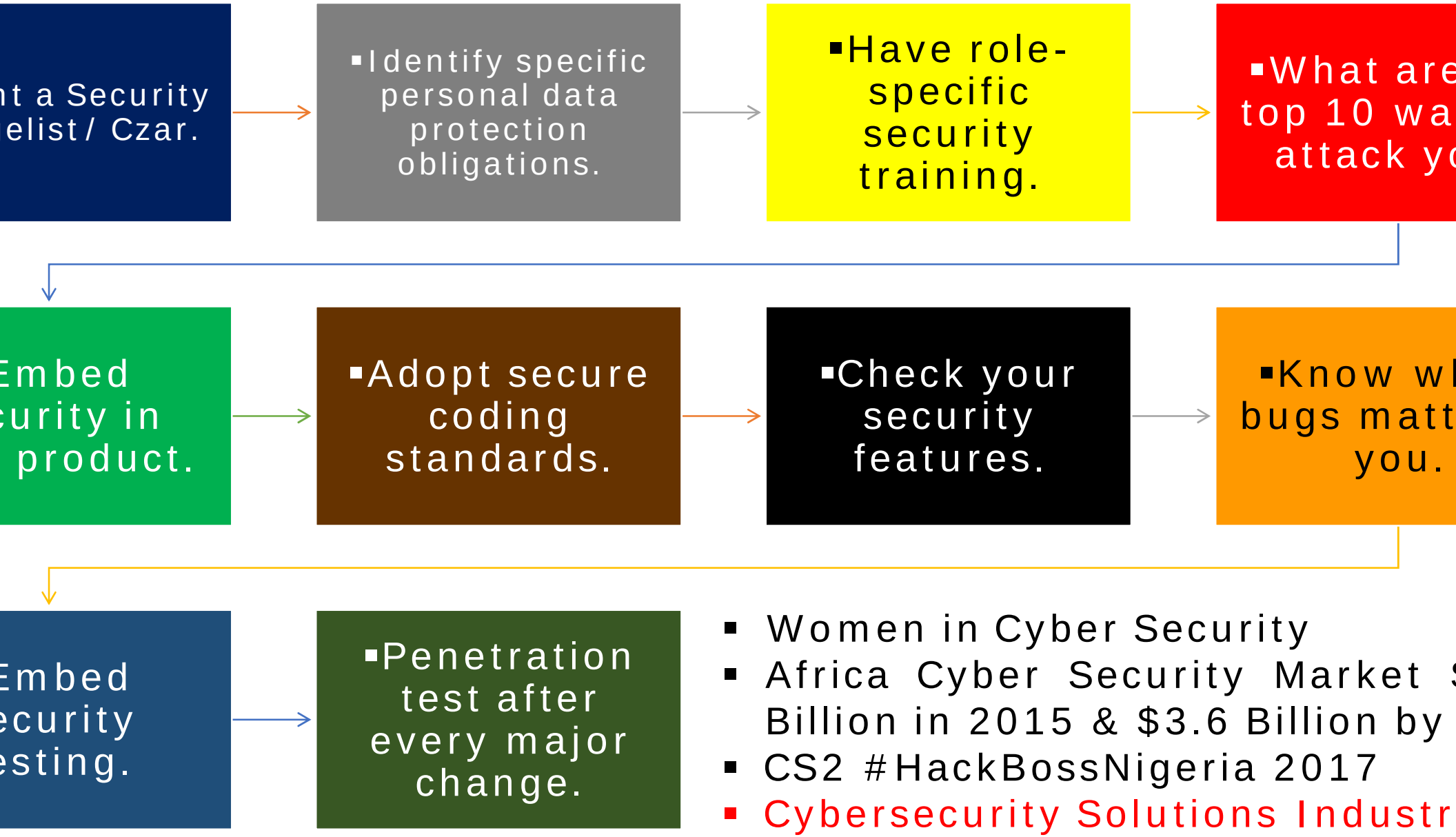
- Ensure your cyber security is as effectiv possible without compromising the usab of your systems.
- Ensure you have robust business contin plans in place that cover your informa assets so that you can resume no operations as soon as possible if an atta successful.

Follow international standards as guides

- ISO27001: Implementation of an Informa Security Management System (ISMS);
- ISO22301: Implementation of a Busi Continuity Management System (BCMS).
- ISO27031, Applies specifically to informa and communication technology busi continuity, and the requirements of ISO27 and ISO22301 are mutually compatible.

Government Cyber Essentials Scheme https://www.itgovernance.co.uk/cyber-essentials-scheme

Steps to Securing (Cybersecurity) for Fintech/ Disruptive Startups



- Women in Cyber Security
- Africa Cyber Security Market S Billion in 2015 & $3.6 Billion by
- CS2 #HackBossNigeria 2017
- Cybersecurity Solutions Industr

ar ter Danielyan, https://thefintechtimes.com/10-steps-cyber-security-fintech-startups/

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Thank
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your
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Na-eke
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info@consultancyss.com