

WE CAN
DO SO
MUCH
TOGETHER

Building Trust in the Machine Economy

Ana Ayerbe
ana.ayerbe@tecnalia.com
@anaayerbe

TECNALIA

RESEARCH AND TECHNOLOGICAL DEVELOPMENT

SINCE 2011

TECNALIA is a benchmark Research
and Technological Development Centre
in Europe.

_MULTISECTORAL

_MULTI-TECHNOLOGY



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Business

Inspiring
Business



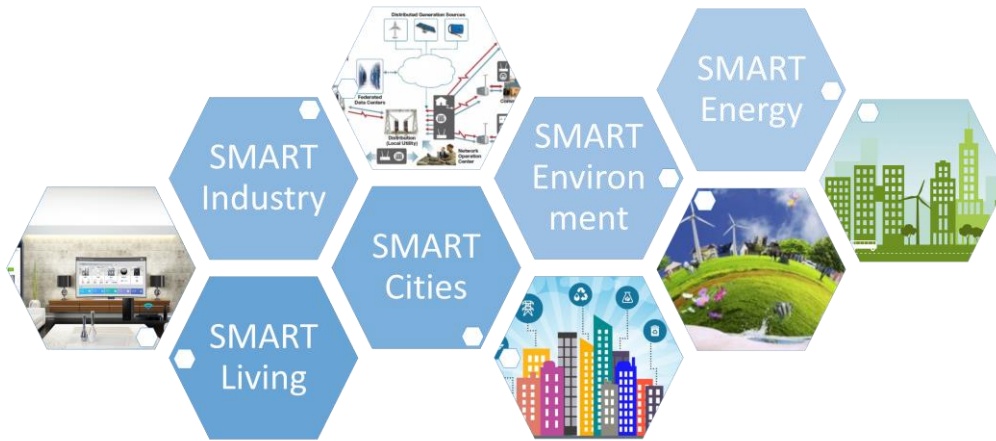
A model
**ANTICIPATING
THE FUTURE** ▶

A COMBINATION
OF TECHNOLOGY,
TENACITY,
EFFICIENCY, COURAGE
AND IMAGINATION

WE RESEARCH TO OVERCOME CHALLENGES FACED BY MANKIND

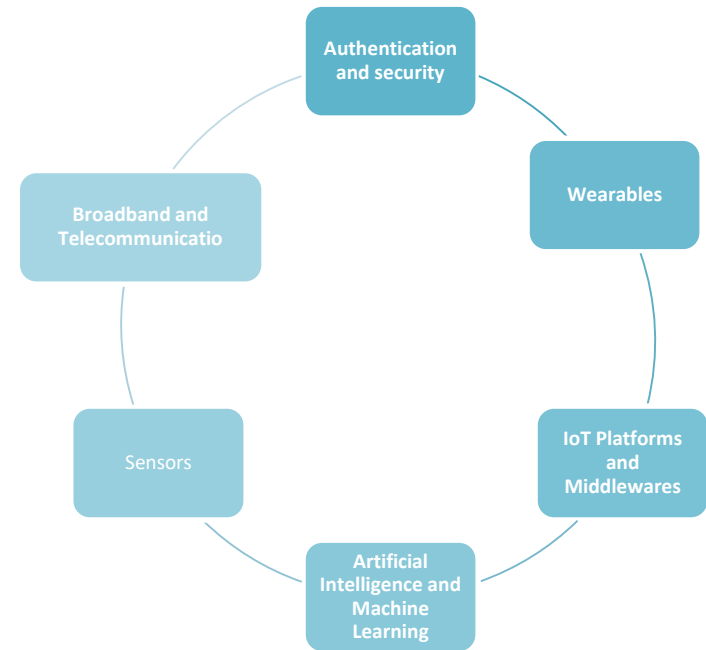


A broad and transversal topic from basic technologies to the applications



Application Domains

Enabling Technologies



IoT Mass Market (B2C)

Things are massively produced
and they are used by private users
with little technical or security
know-how

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Hacking

DDoS attack that disrupted internet was largest of its kind in history, experts say

Dyn, the victim of last week's denial of service attack, said it was orchestrated using a weapon called the Mirai botnet as the 'primary source of malicious attack'

● **Major cyber attack disrupts internet service across Europe and US**

Nicky Woolf in San Francisco

@nickywoolf

Wed 26 Oct 2016 21:42 BST



769 423

This article is over 1 year old



Advertisement

Florence - Hotel Esperanza

Bien 7.7

Reserva

Pisa - Hotel La Pace

Bien 7.9

Reserva

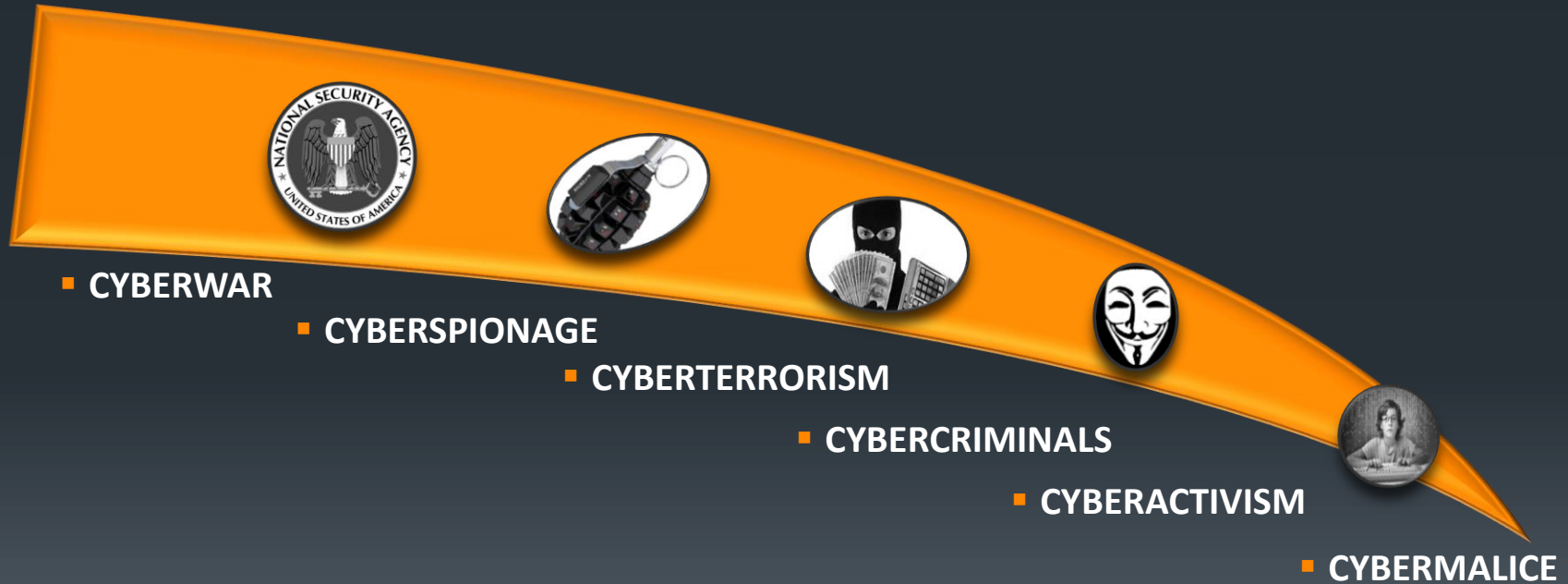
Florence - Hotel Caravaggio

Muy bien 8.4

https://www.theguardian.com/technology/2016/oct/21/ddos-attack-dyn-internet-denial-service



From "script-kiddie" to states-nations



Industrial Internet of Things (B2B)


Using IoT in sectors like Industry 4.0, Energy, Health or Agriculture among others.

Objectives Search: Modbus (May'17)

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TOTAL RESULTS
13,841

TOP COUNTRIES



United States	2,575
France	988
Turkey	898
Spain	836
Sweden	710

TOP ORGANIZATIONS

Verizon Wireless	1,170
Orange	639
Telstra Internet	604
Turkcell	521
Telefonica de Espana	514

TOP OPERATING SYSTEMS

RELATED TAGS: scada


78.6.19.103
78-6-19-103-static.albacom.net
BT Italia S.p.A.
Added on 2017-05-05 10:49:39 GMT
 Italy
Details
ics

Unit ID: 0
-- Device Identification: SE-Elektronik G 02 90 00 V02.00.21

Unit ID: 1
-- Device Identification: SE-Elektronik G 02 90 00 V02.00.21

Unit ID: 3

Unit ID: 4

166.211.22.52
52.sub-166-211-22.myvzw.com
Verizon Wireless
Added on 2017-05-05 10:48:47 GMT
 United States
Details
ics

Unit ID: 0
-- Slave ID Data: Illegal Function (Error)

Unit ID: 1
-- Slave ID Data: Illegal Function (Error)

120.157.13.64
Telstra Internet
Added on 2017-05-05 10:47:42 GMT

Unit ID: 1

Objectives Search: Modbus (June'18)

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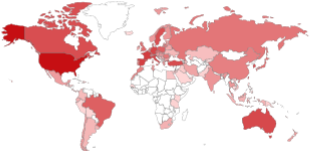
Download Results

Create Report

TOTAL RESULTS

18,806

TOP COUNTRIES



United States	3,213
France	1,304
Spain	1,163
Italy	1,123
Germany	1,049

TOTAL ORGANIZATIONS

Verizon Wireless	1,484
Telstra Internet	863
Deutsche Telekom AG	744
Orange	743
Turkcell	645

TOTAL OPERATING SYSTEMS

Windows 7 or 8	23
Linux 2.6.x	17
Linux 3.x	14
Linux 2.4-2.6	11
Linux 2.4.x	8

TOTAL PRODUCTS

BMX P34 2020	564
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RELATED TAGS:

scada

109.166.175.201

Orange Romania

Added on 2018-06-05 22:10:16 GMT

 Romania

Details

ICS

Unit ID: 1

-- Device Identification: Schneider Electric TM221CE16T V1.0

Unit ID: 2

-- Device Identification: Schneider Electric TM221CE16T V1.0

Unit ID: 3

-- Device Identification: Schneider Electric TM221CE16T V1.0

Unit ID: 4

-- Device Identification: Schneider Electric TM221CE16T V1.0


U...

83.252.219.182

c83-252-219-182.bredband.comhem.se

Com Hem AB

Added on 2018-06-05 22:09:53 GMT

 Sweden, Näsijö

Details

ICS

Unit ID: 0


-- Device Identification: AB Regn

166.140.58.154

154.sub-166-140-58.myvzw.com

Verizon Wireless

Added on 2018-06-05 22:07:48 GMT

 United States

Details

ICS

Unit ID: 0

-- Slave ID Data: Illegal Function (Error)

-- Device Identification: Illegal Function (Error)

Unit ID: 1

-- Slave ID Data: Illegal Function (Error)

-- Device Identification: Illegal Function (Error)

Unit ID: 2

ES

0:13

06/06/2018

People:

Cybersecurity Awareness



Cybersecurity by Design:

Cybersecurity in the whole Software
Development Process

Cybersecurity along the Supply Chain.

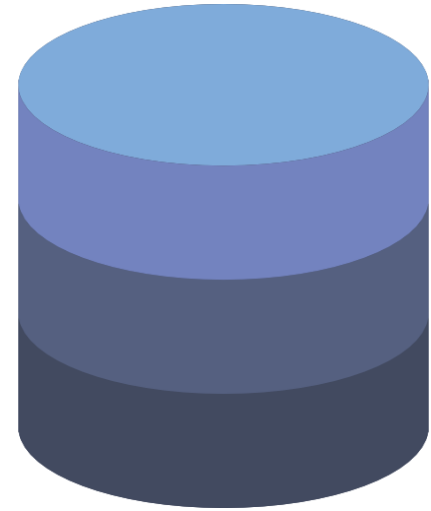
Try not to use B2C devices in B2B applications

Disruptive

adjective :
to shake things
up & make your
mark on
the world .

Blockchain is one of today's
most *disruptive* technologies,
it can *change procedures and
business models* as we know
them today.

Blockchain is a digital
transactions and
events log



Decentralized

Distributed P2P architecture

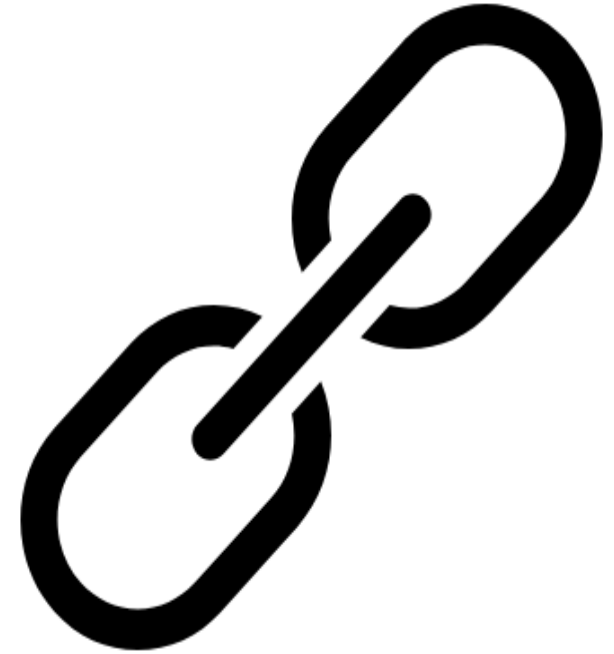


Building Trust in the Machine Economy

Whose information is
approved by the
Consensus
of the majority of the
network



Cryptographically
linked to make it
Unalterable

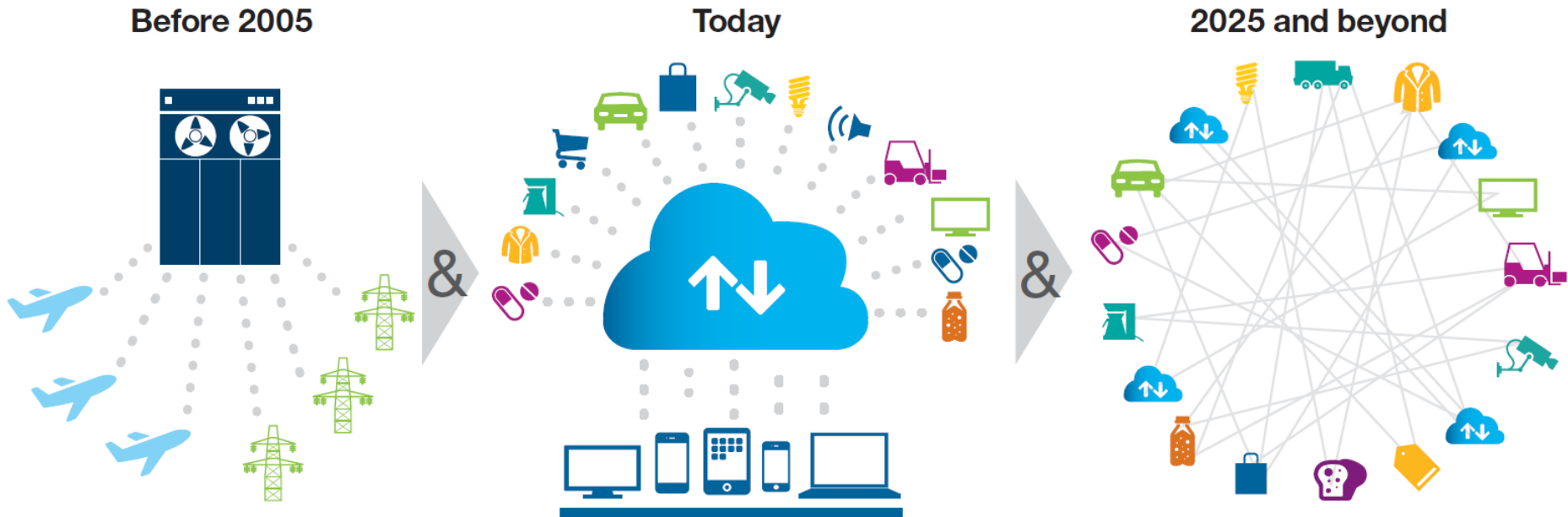


So the minimum
change would
break the
(logical) chain



- Disintermediation of processes and business models
- Integrated point of view of synchronized, agreeded and unalterable data
- Trustworthiness and non-repudiation of transactions
- Traceability and transparency of processes
- Machine economy: machines as active participants in the economy

Architecture and scalability for IoT





Raw materials, parts, maintenance, energy,
delegation/coordination of production, logistics...

M2M transactions & tokenized value exchange

Traceability

of the whole **supply chain**. Including also the **life cycle** of the product.



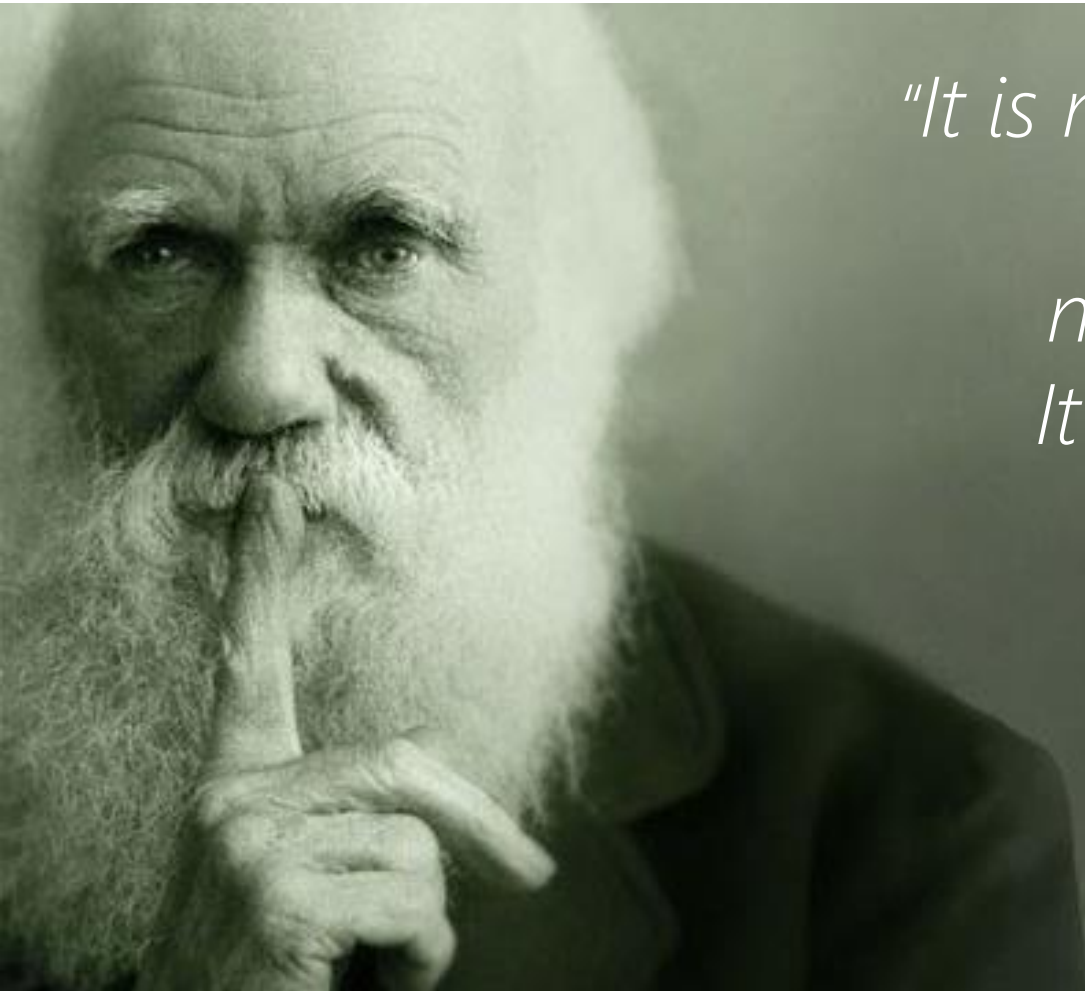
Incident Forensics

[illegible]

1st Industrial Blockchain Laboratory in Europe



Blockchain is the next revolution



*"It is not the strongest of the
species that survive,
nor the most intelligent.
It is the one that is most
adaptable to change"*

Charles Darwin



Thanks for your attention!

Ana Ayerbe
ana.ayerbe@tecnalia.com
@AnaAyerbe