Safe-Guarding Home IoT Enviroments with Personalised Real-time Risk Control
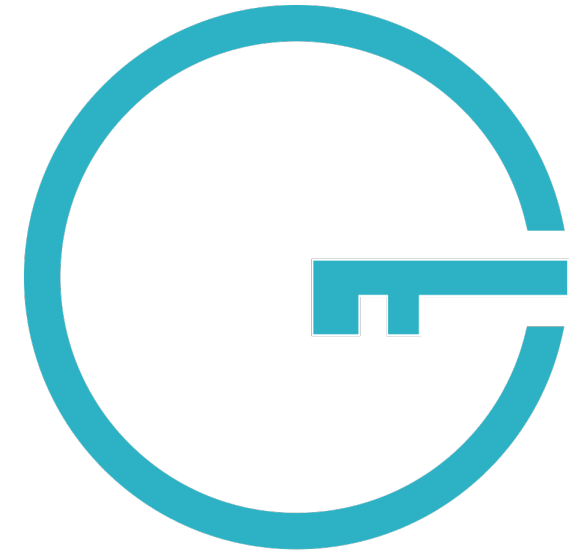
IM Brokerage Event – Santiago de Compostela

06-11-2019

TELEVES

Partners:

Televes

⊙NTNU

EXUS

KIT
Karlsruher Institut für Technologie

kalos
Information Systems

UNIVERSITÉ DE GENÈVE

iti

Imperial College London

OBRELA
SECURITY INDUSTRIES

Cruz Roja Española

GHOST

Lessons learned: some humble tips

One **example** of the road: GHOST

The **foundations**: why innovation and H2020 for TELEVES?

Who are we?
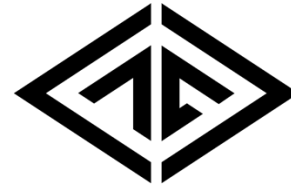
Televes Corporation®

A Total Commitment To Quality,
Televes is the brand heading a group of technological companies with the common objective of generating value in the Telecommunications and Information Technology sectors.
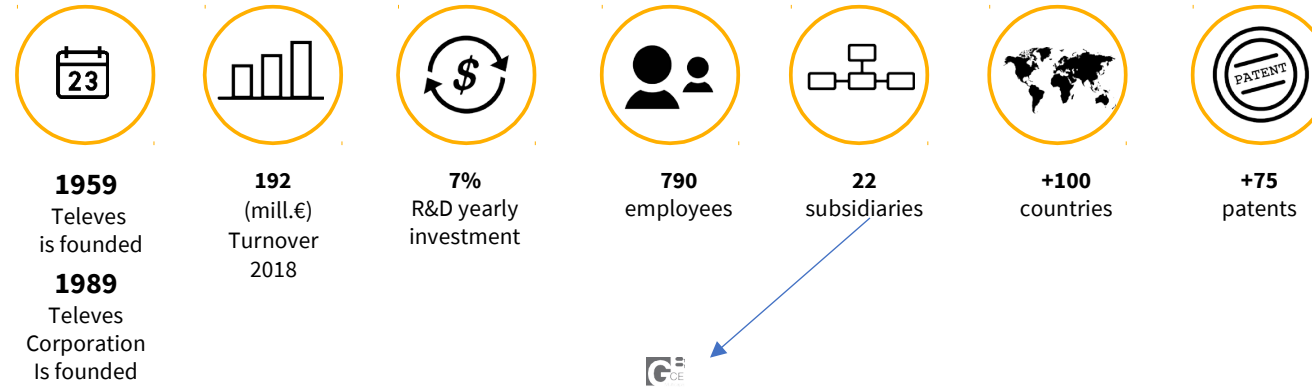
Formed by more than 20 companies, all working toward a common objective:
To design, develop, manufacture and distribute the best products and solutions to enable optimum infrastructures for buildings and homes.

Televes Corporation is present in more than 100 countries, directly through its 11 international subsidiaries
(Portugal, France, United Kingdom, Italy, Germany, Poland, Scandinavia, Russia, United States, China and United Arab Emirates), or through its extensive network of professional distribution.

By the numbers

1959
Televes
is founded

1989
Televes
Corporation
Is founded

192
(mill.€)
Turnover
2018

7%
R&D yearly
investment

790
employees

22
subsidiaries

+100
countries

+75
patents

GCE
1998

ISF
1989

SERTEL
2001

Proinsa
1989

Redess
2003

Gamelsa
1984

Arantia
2006

Televes Corporation®

Gainsa
1976

Assamblia
2006

Televes
1958

TELEVES PORTUGAL	TELEVES U. KINGDOM	TELEVES FRANCE	TELEVES MIDDLE EAST	TELEVES ITALIA	TELEVES USA	TELEVES DEUTSCHLAND	TELEVES SHANGHAI	TELEVES POLSKA	TELEVES RUSIA	TELEVES ESCANDINAVIA
1980	1988	1997	1999	2004	2005	2006	2007	2010	2014	2016

GHOST

Global Presence

And distribution agreements on up to 100 countries

Business areas

Telecom and TV Infrastructures
Radiofrequency signal distribution in buildings and homes is at the core of our business

Hospitality
Efficient and ubiquitous internet access through a high capacity multiservice network

eHealth
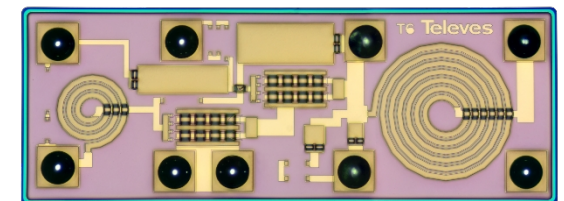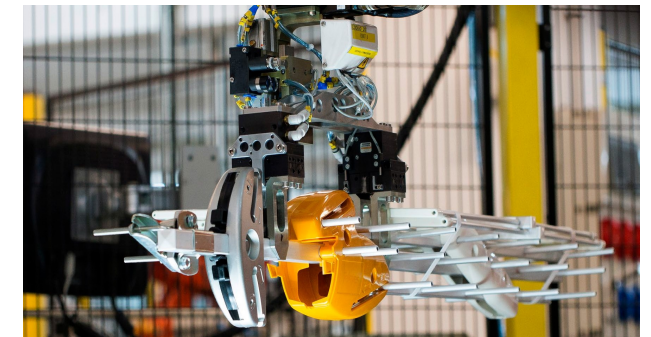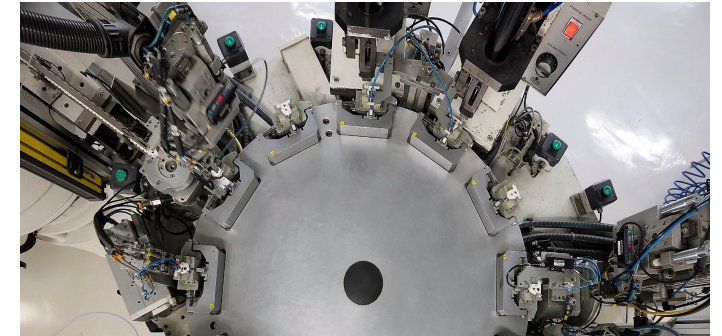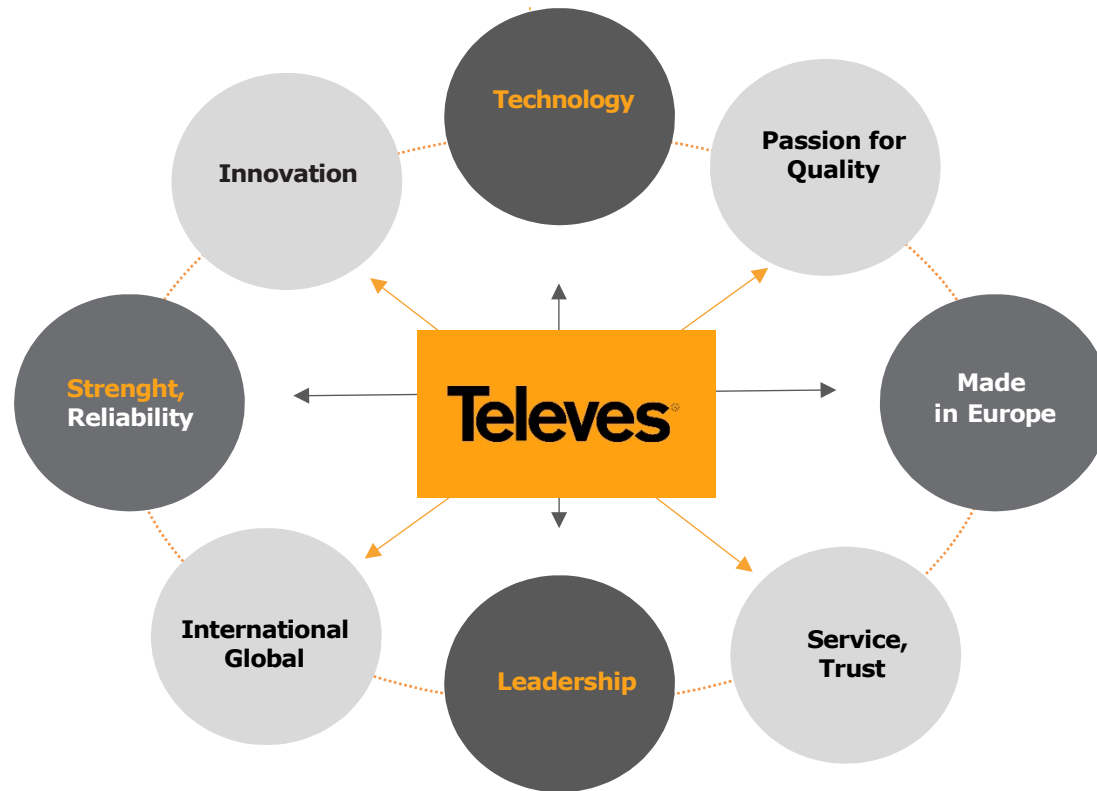Advanced teleassistance with intelligent technology

Professional LED lighting
Development and manufacture of luminaires for industrial sorroundings.

IoT technologies that enable the **Intelligent Building** within a Smart City
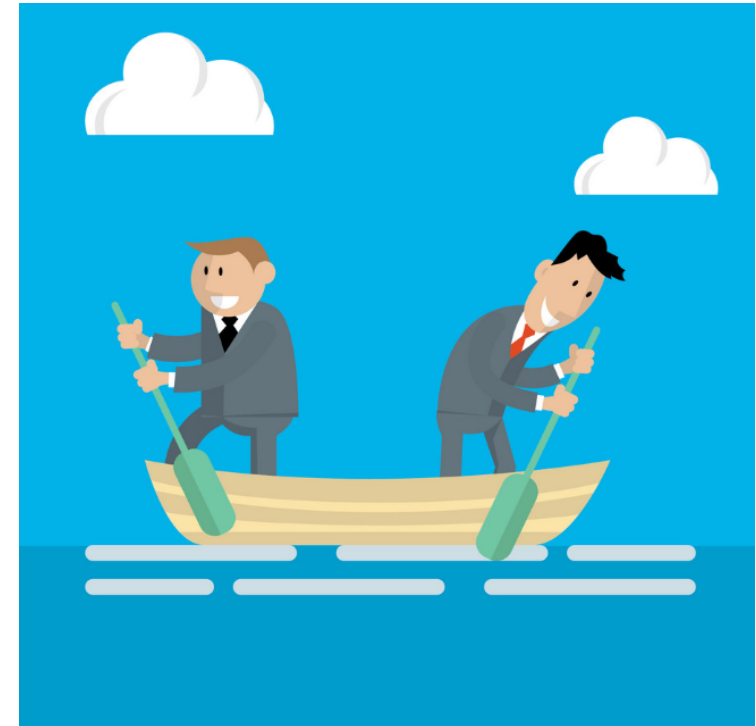
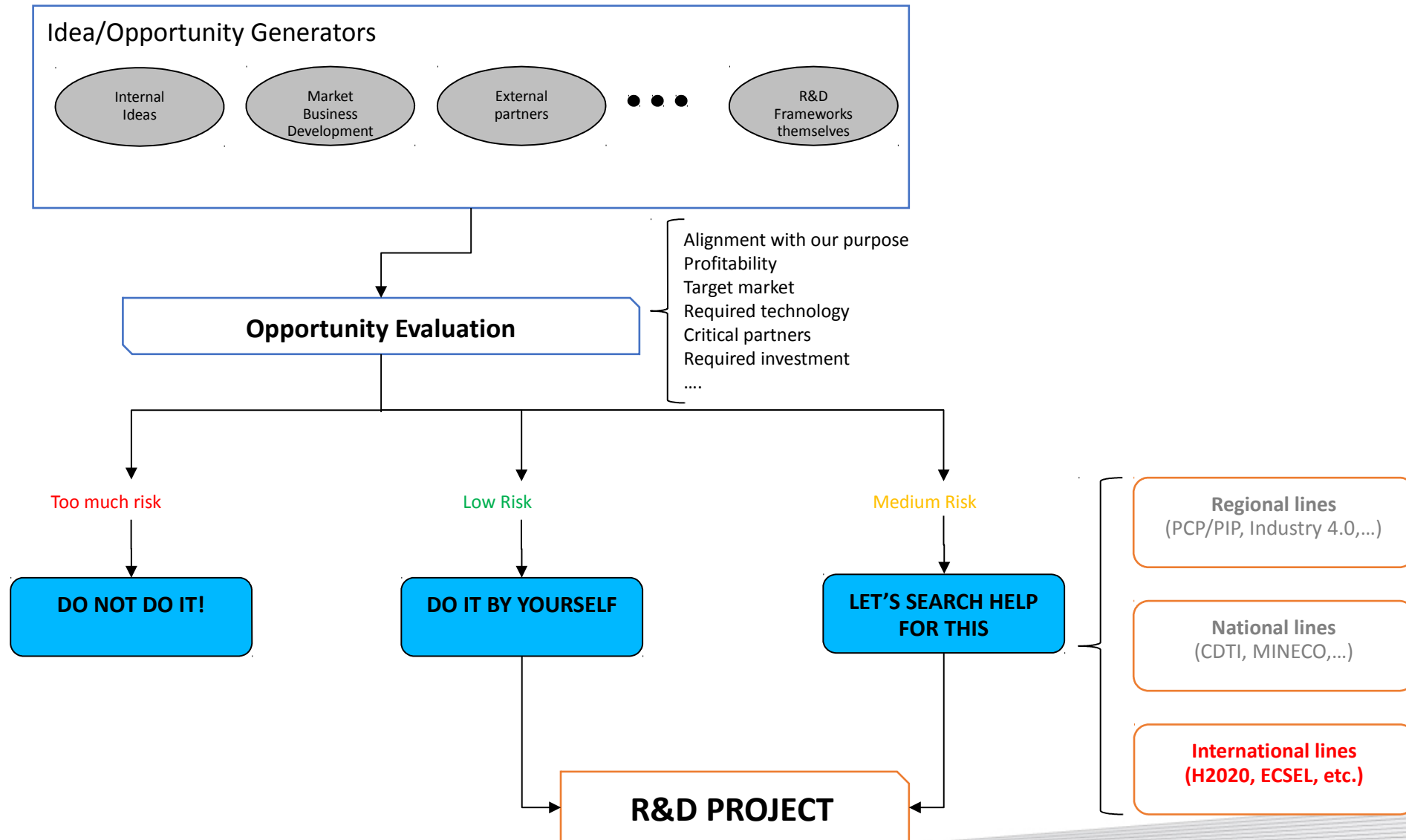# Values of the company

Is H2020 worthy?

WE WON'T
BE DISTRACTED
BY COMPARISON
IF WE'RE
CAPTIVATED
BY PURPOSE

- BOB GOFF -

It is worthy if it contributes to your purpose

Our innovation workflow

Idea/Opportunity Generators

- Internal Ideas
- Market Business Development
- External partners
- • • •
- R&D Frameworks themselves

Opportunity Evaluation

Alignment with our purpose
Profitability
Target market
Required technology
Critical partners
Required investment
….

Too much risk → **DO NOT DO IT!**

Low Risk → **DO IT BY YOURSELF**

Medium Risk → **LET'S SEARCH HELP FOR THIS**

Regional lines
(PCP/PIP, Industry 4.0,…)

National lines
(CDTI, MINECO,…)

International lines
(H2020, ECSEL, etc.)

R&D PROJECT

But not everything is good...

ADVANTAGES	DISADVANTAGES
• Helps in the development of new products and solutions	• Reduced success rate
• Technological excellence	• Preparation of proposals is time consuming
• High return rates (100%-70% in H2020)	• Management of European projects is time consuming
• Contributes to placement in specific markets	• You have to be open to share ideas
• International partnership network	• You can lose your focus
• Contributes to talent attraction and management	• New profiles and capacities are needed for some projects
• Increment of knowledge	• It is completely needed to align short-term business objectives to mid-term R&D objectives
• Direct/indirect access to regulatory, standardization and other relevant organizations	
• Improvement of the innovative process due to the cross-topic projects	• Sometimes programs not aligned with our "traditional" markets
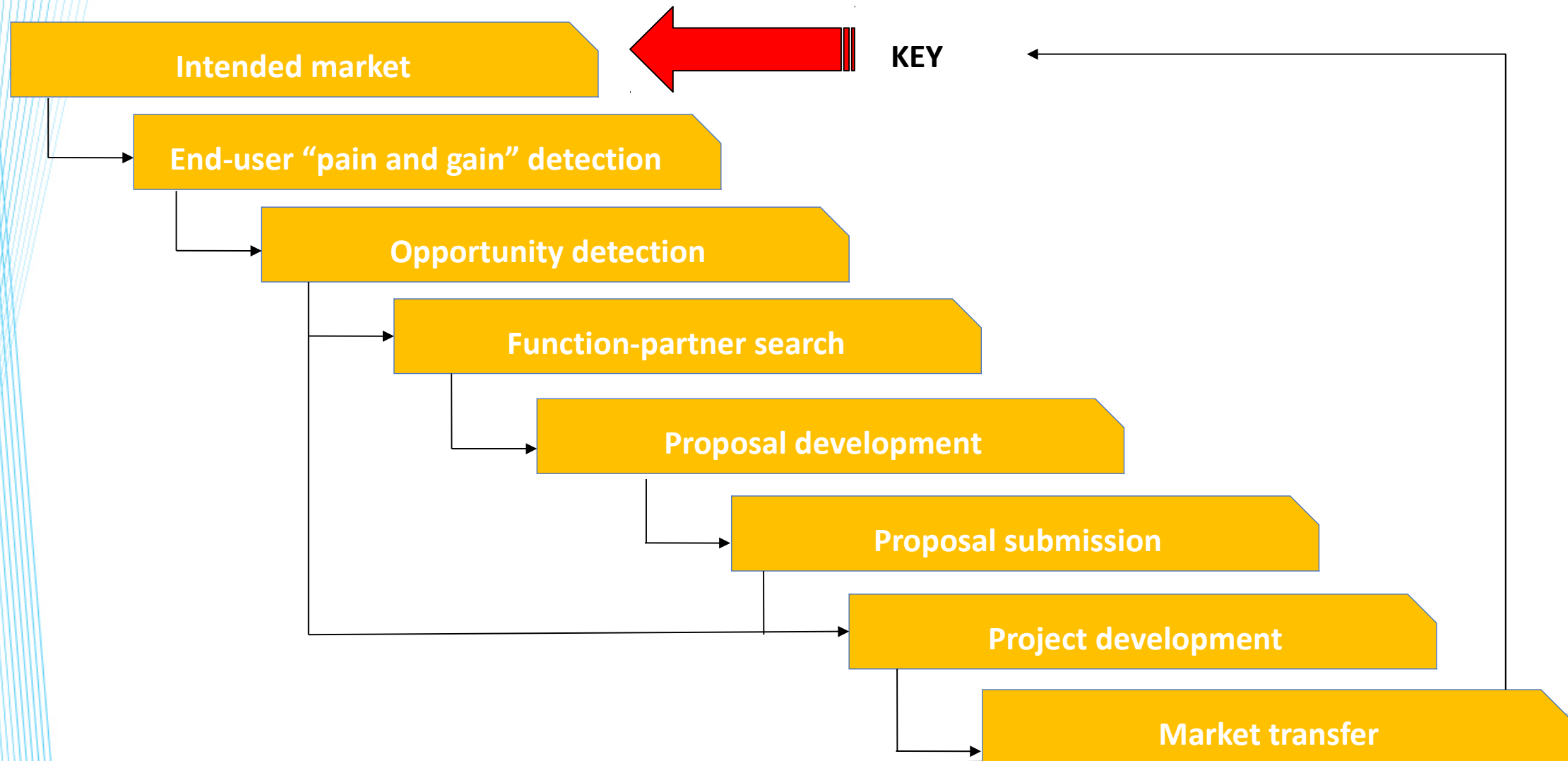
One example of the road: GHOST

- Mission statement of Televes

    - Televes Corporation optimizes synergies within its technological and manufacturing group to develop the **best telecommunications and IT products and solutions for building and home infrastructures**, that will enable all **present and future services, including health and entertainment, to end users in their homes**.

- Markets of interest for Televes

    - Telecommunication infrastructures at the building (including IoT)
    - Healthcare at home solutions

One example of the road: GHOST

- End-users identification for the markets

  - Installer

  - Service provider

  - Caregiver

  - Beneficiary

- Pain and gains detection

  - Desire of independent living

  - Seamless interaction with the IoT-enabled service

  - Potential fear to privacy leaks

  - Potential fear to security flaws

  - …

One example of the road: GHOST

Opportunity detection

- Call: DS-02-2016 - Cyber Security for SMEs, local public administration and Individuals

  - …Individuals, constantly portrayed as the "weakest link" face the daunting task of having to constantly adapt their behaviour at home and in the workplace and the way they use both their personal or work-related IT equipment and devices in order to avoid falling prey to the latest threats and techniques that malicious actors leverage against them.

  - …few cyber security solutions have been designed with the human factor in mind and therefore present severe limitations in their usability which hampers proper decision making and adequate usage

  - …should develop innovative solutions with a high degree of usability and automation while ensuring that the end-users retain an adequate degree of cyber situational awareness and control

  - …extensive end-user feedback and participation in the consortium where appropriate

  - Impacts: increased competitiveness, increased resilience, increased effectiveness

Yes! It fits with one (or more) of the pains of my end users

One example of the road: GHOST

Function-partner search

- Ok, it fits my end-user's pains/gains but I am not an expert on…

  - Cybersecurity
  - Usable solutions
  - End-user validation
  - Data analytics
  - Risk assessment
  - DLTs
  - …

Multidisciplinary approach

One partner – one function
Tip: Avoid make-up

	ENTITY	TYPE
Televes	TELEVES (Spain)	Industrial partner (Midcap)
UNIVERSITÉ DE GENÈVE	University of Geneva (Switzerland)	Academic partner
iti	CERTH (Greece)	Academic partner
NTNU	NTNU (Norway)	Academic partner
Imperial College London	IMPERIAL COLLEGE (United Kingdom)	Academic partner
EXUS	EXUS (Greece)	Industrial partner (SME)
KIT	Karlsruhe Institute of Technology (Germany)	Academic partner
Kalos Information Systems	Kalos Information System (Norway and Romania)	Industrial partner (SME)
Cruz Roja Española	CRE (Spain)	NGO
OBRELA	Obrela Security (Greece)	Industrial partner (SME)

One example of the road: GHOST

Proposal development

Proposal submission

- After lots of work during summer of 2016…

Submission on August 26th

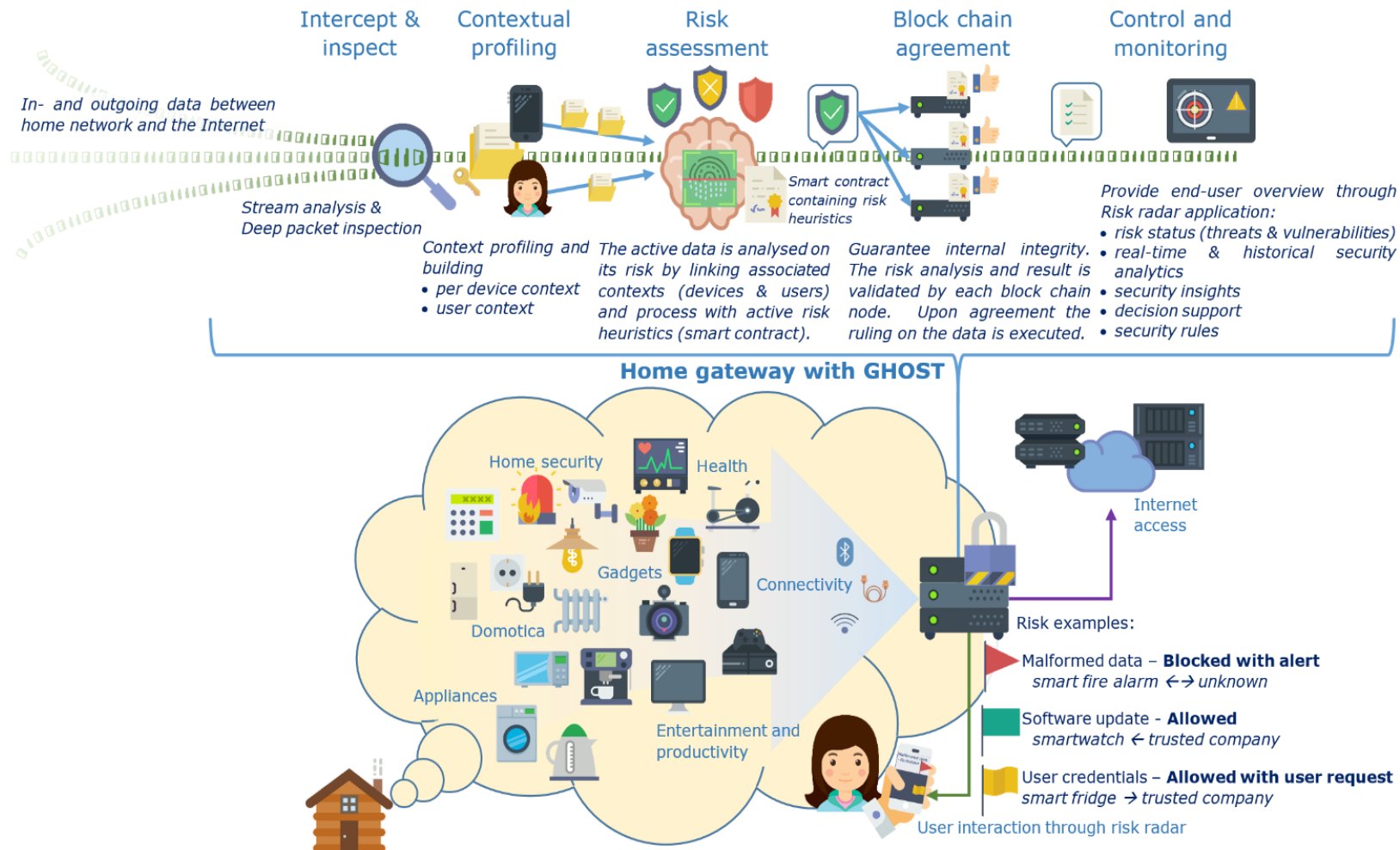- We will be back to here in the last part of the session
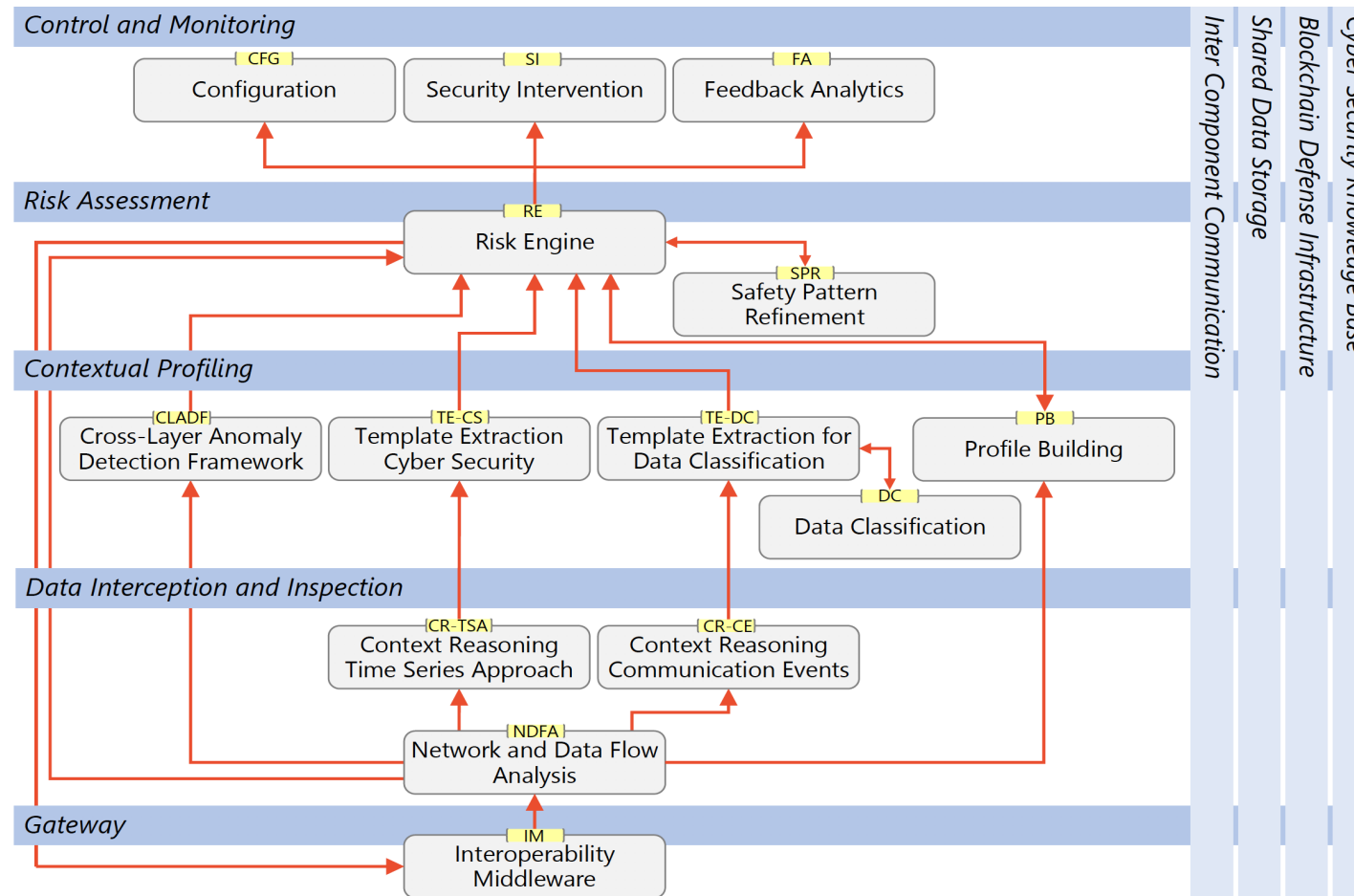
One example of the road: GHOST

Project development

One example of the road: GHOST

Project development

One example of the road: GHOST

One example of the road: GHOST

- Use of the **state of the art technologies**

  - Machine Learning
  - Blockchain
  - …
- Focus on **usability** and **end user engagement**

  - End user as one of the weakest points of a security solution
  - Focus groups
  - Real Life Trials
- **Device-agnostic solution** but…

  - Software-based suite
  - Enhanced hardware capabilities
- **Academic-industrial balance** in the consortium

  - Orientation to the market

One example of the road: GHOST

- What about being the coordinator?

  - Set up **clear follow-up mechanisms** (waterfall, agile, etc.)

  - Maintain a **constant bi-directional communication** with:
    - Your partners
    - Your client (European Commission)
    - Your stakeholders

  - **Understand the motivations of each partner**

  - If you receive help from others (WP leaders, etc.), **be grateful** with them and **make their job easy**

  - Maintain the **focus** on the objectives of the project

  - Be prepared for a **Murphy's theory environment** (everything that can be wrong, it will be wrong: amendments, changes in the working teams, etc.)
    - Risk management is critical

…and enjoy the ride!

One example of the road: GHOST

- Already during the project

  - End-user involvement and validation

  - Willingness-to-pay questionnaires

  - Market analysis

  - User stories

  - …

- Importance of the IPR management within the project/partners

- Aligned with your market strategies

  - Telecare home solutions

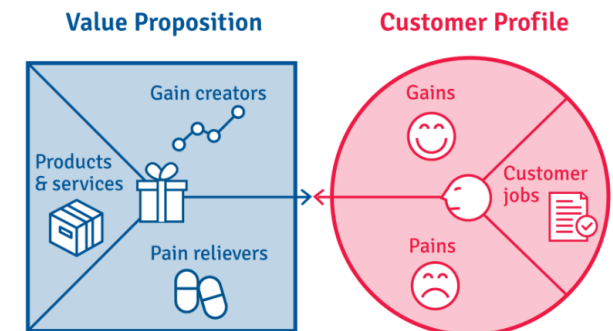 - Transference to other markets

One example of the road: GHOST

- Does GHOST make sense for industries and smart manufacturing?

  - Cybersecurity is **transversal** to every ICT system
  - Minimal **variations of the home communication protocols are used on industry** (Ethernet, 802.15.4, Z-Wave, PROFIBUS, CANBUS, etc.)
  - Smart manufacturing ←→ **Connected devices** → The algorithms developed on GHOST are applicable
  - Machines, like IoT devices, are **not secure by themselves sometimes** (lack of computational power, legacy systems, etc.) → A broader and high level analysis is needed
  - Device agnostic → Can be ported to other domains
  - The expected impact of smart manufacturing will not be **reachable without security and privacy**

IMB²⁰19

INNOVATION &
MANUFACTURING
BROKERAGE EVENT

Santiago de Compostela (Spain)
6th – 7th November

Lessons learned

FAILURE IS THE OPPORTUNITY TO BEGIN AGAIN MORE INTELLIGENTLY.

~ Henry Ford
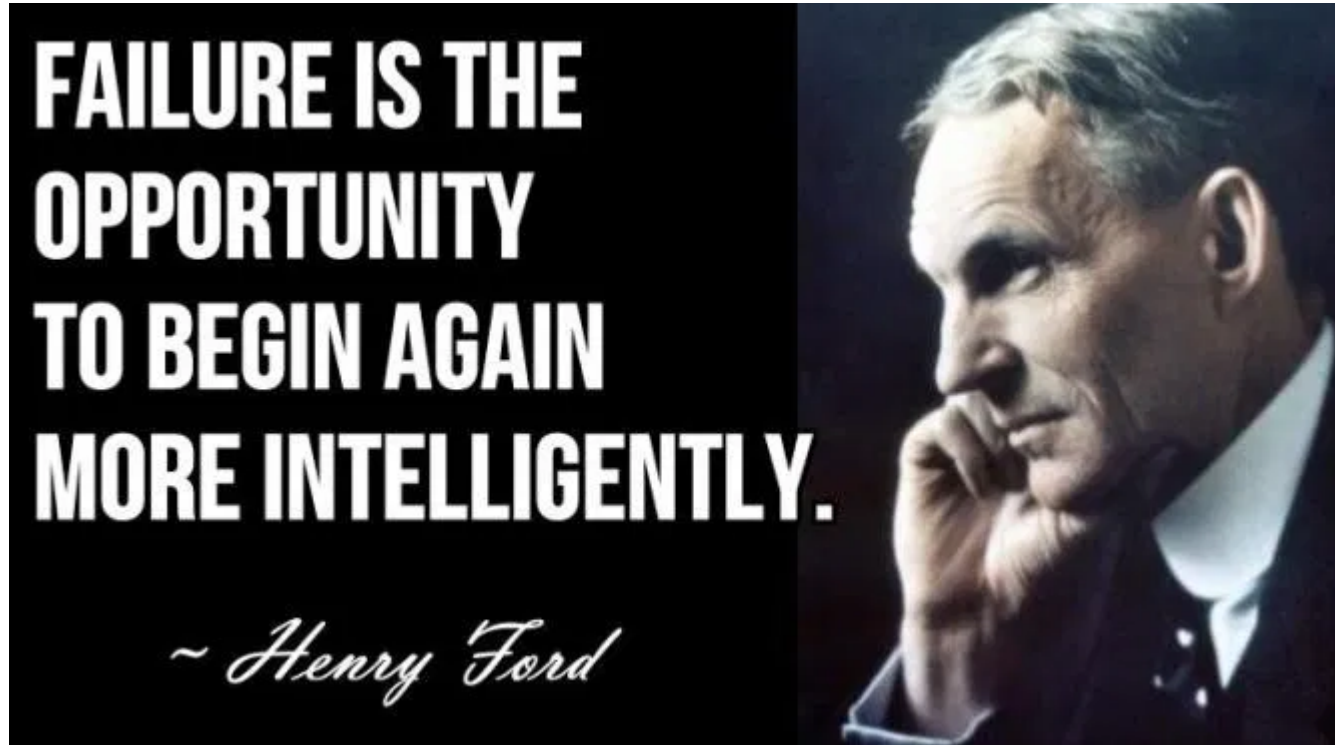
Objective: share what I learnt from failures…
… but there is not a magical recipe

Lessons learned

GENERAL TIPS

- Tip #1: Do not lose **focus** (which is your market, your master lines, your end-user, etc.)

- Tip #2: You are a selling a **unique (and only one) product** to a **smart (but not omnipotent) client**

- Tip #3: So, **"sell" properly the (quantified) benefits** of your product

- Tip #4: Of course, **do not propose something that you will not buy or make by yourself** (if you had the needed resources)

- Tip #5: **Take your time** to prepare proposals. Last minute proposal will not success

- Tip #6: **Every detail is important** (you are fighting for this extra 0,5 points)

- Tip #7: Make the **life of the evaluator easy** → Answer clearly what they ask

Lessons learned

EXCELLENCE

- Tip #1: Your project must be summarized in only **one sentence**

- Tip #2: Make the evaluator talk about your proposal at dinner (Make it **attractive**)

- Tip #3: "**Spiral writing**": From the concrete sentence, start incorporating the concepts according the importance

- Tip #4: Do not underestimate the **power of figures, images, underlining**, etc.

- Tip #5: Do **not include "fancy" technologies/topics if they are not relevant** for your solution (i.e. blockchain for everything)

- Tip #6: Provide the **best value for money** for the Commission

- Tip #7: **Quantify everything** (objectives, KPIs, deliverables, specific features of the project, the problem to be solve, etc.)

- Tip #8: **Specify the results** of the project (am I buying a prototype? Or a demonstrator? Or a report?)

- Tip #9: Align with **EC priorities**

Lessons learned

IMPACT

- Tip #1: Use **figures**!! Difference between saying "I will sell many units" and "I will sell 1.000.000 units with a margin on 20€, creating a revenue of 20M€ and 100 new employments"

- Tip #2: See **further than the project** → Work in the future of the exploitation

- Tip #3: It is **not only about the money**, it is about the benefit to the community in the EC priorities

- Tip #4: If you have a **end-user in the consortium** (really recommendable), highlight your value chain

- Tip #5: A minimal **business plan** is mandatory

- Tip #6: **Targeted and segregated dissemination** is important (do not disseminate without a target, same as you do not innovate without a target)

- Tip #7: Create **several levels of dissemination**, including open events or workshops for the broader community (you are asking for public money)

Lessons learned

CONSORTIUM

- Tip #1: First identify the needed **functions**

- Tip #2: Match **partners with functions** and avoid partners without functions

- Tip #3: Your consortium will be your **teammates**, be careful with your "human resources" process

- Tip #4: **Build it as soon as possible**

- Tip #5: If possible, find partners with **H2020 experience** and with **expertise** in the relevant topics

- Tip #6: **Avoid partners with low participation** (<20PM in 3-years project). It is difficult to justify which is the added value that they are bringing

- Tip #7: **Explain the costs** (including subcontracting). Be as **transparent** as possible to avoid **distrust**

- Tip #8: **Last and least, make-up the consortium** (eligibility check, not overload a country, big brands, etc.)

Lessons learned

ANY OTHER BUSINESS

- Tip #1: **Avoid copy and paste**. It is really easy to detect.

- Tip #2: **One main editor, many contributors**.

- Tip #3: Do not be afraid of being "**inflexible**" (specially the main editor)

- Tip #4: **Risk management** is important → If there is no risk, there is no need for the support of funding

- Tip #5: **Ambitious objectives** are important → If the objectives are easy, there is no risk (and see the previous point…)

- Tip #6: If you do not find risks and ambitious objectives, please, **check it again** because you are doing something wrong

- Tip #7: Specify the **management structure** (PM, Tech Leader, General assembly, Exploitation committee, Advisory Board, Steering Committee)

- Tip #8: Specify the **decision workflow**

- Tip #9: **Detail WP and Task before assigning the budget** with coherence (length of the description according to the PMs requested)

- Tip #10: Use **tables** (you can use smaller sizes of letter)

Lessons learned

...and enjoy the ride!
(one more time)

GHOST

Safe-Guarding Home IoT
Environments with
Personalized Real-time Risk
Control

GHOST

Follow us on the Social Media

GHOST Project EU   GHOST Project EU   @GHOST Project EU   GHOST H2020 Project

More info in www.ghost-iot.eu
or
jaugusto@televes.com

Thank you!