GHOST - Making your smart home safer

March 2020

Presented by: Javier Augusto, Project Manager – TELEVES

www.ghost-iot.eu

www.cyberwatching.eu

@cyberwatching.eu

info@cyberwatching.eu

GHOST

5 steps in 10 minutes

- TELEVES (a bit of context)
- GHOST (a little more context)
- Exploitability-by-design
- Useful tools that we have used
- Our present-future plans

TELEVES

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®

Key markets:
- Telecom and TV infrastructures
- Hospitality
- eHealth
- Professional LED lighting

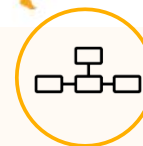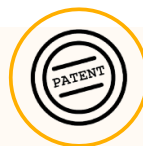| **1959** Televes is founded	**192** (mill.€) Turnover 2018	**7%** R&D yearly investment	**790** employees	**22** subsidiaries	**+100** countries	**+75** patents

The concept
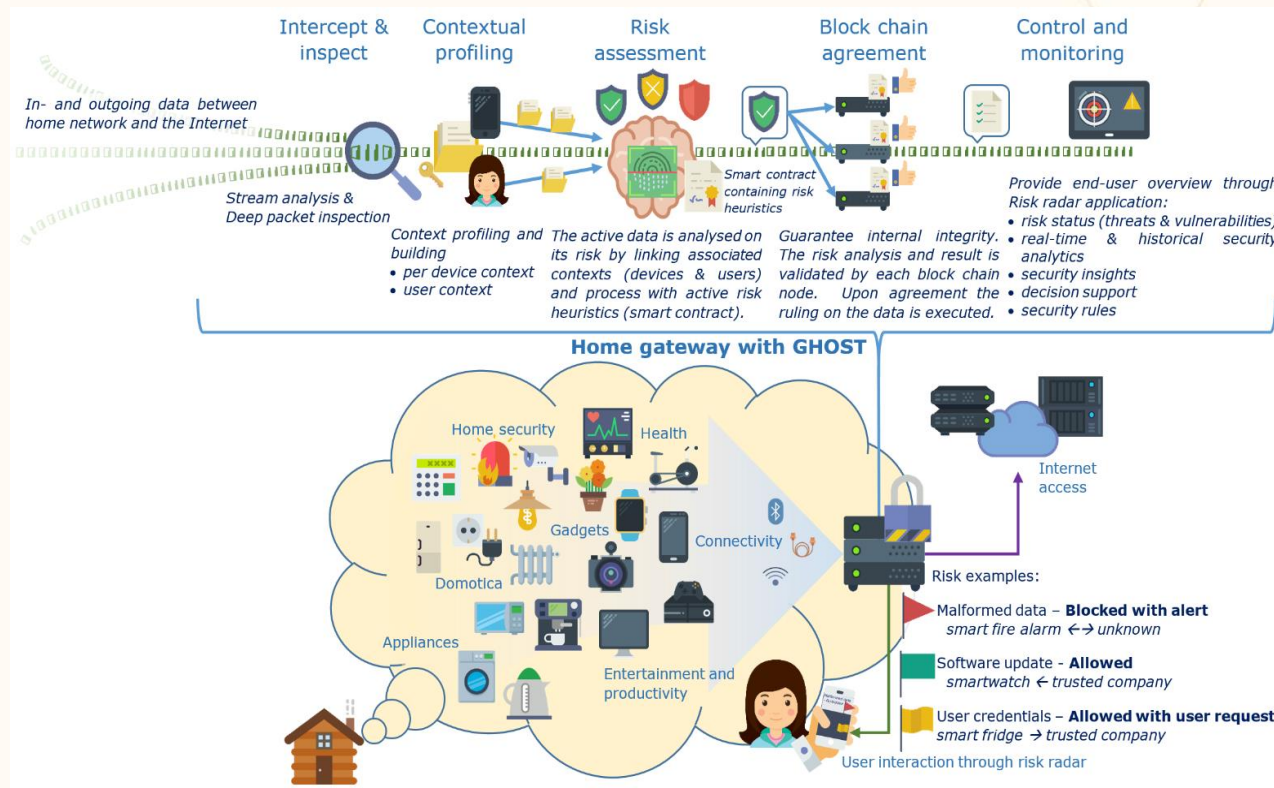
The consortium

|	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 (United Kingdom)	Industrial partner (SME)
KIT Karlsruher Institut für Technologie	Technical University of Darmstad (Germany)	Academic partner
kalos Information Systems	Kalos Information System (Norway and Romania)	Industrial partner (SME)
Cruz Roja Española	CRE (Spain)	NGO
OBRELA SECURITY INDUSTRIES	Obrela Security (Greece)	Industrial partner (SME)

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Exploitability-by-design

- When do you start exploitation?

During the proposal definition!!

- Key points:
  - Take a look to the consortium
    - We have the whole value chain
  - Take a look to the methodology
    - User-driven iterative approach for the development

SW/HW Developers

Manufactu rers

Service Provider
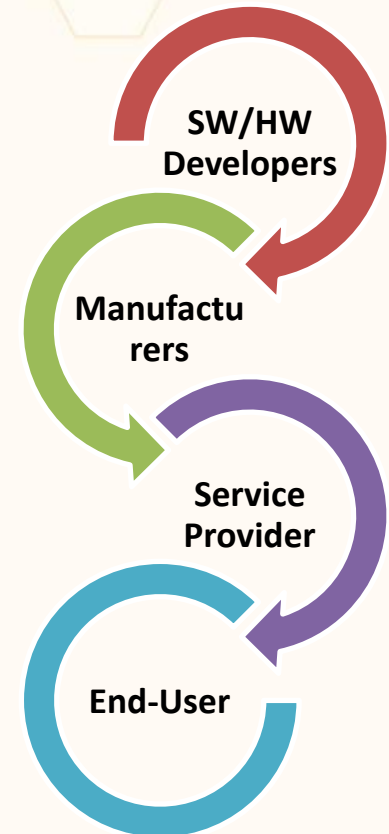
End-User

Useful tools that we have used

🔷 Included in our iterative end-user focused methodology

  🔷 Online questionnaires
    🔷 Awareness, usability of interfaces, etc.
  🔷 Targeted focus groups
    🔷 Review the whole concept (CS management model), multidisciplinary groups, etc.
  🔷 Real-life trials
    🔷 Day to day use of the system, issues during installation, etc.
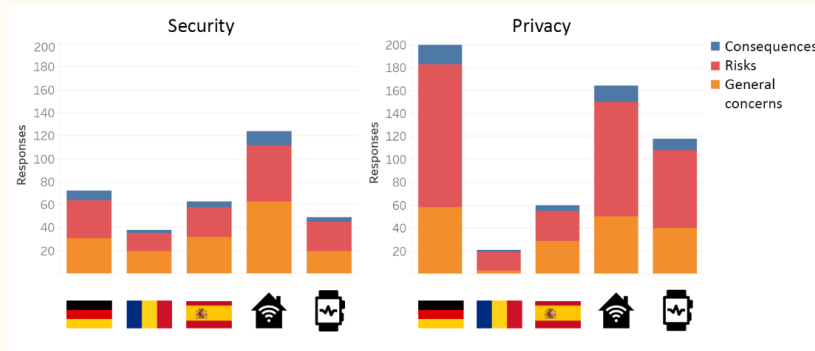
Useful tools that we have used

- Additional Tools (I)
  - Product identification
    - Description
    - Potential clients
    - Needed adaptations to reach the market
    - Needed modules
  - Product-IPR identification
    - Expected impact in the market
    - Replaceability

		Product	Product 1	Product 2	Product 3	Product 4	Product 5	Product 6	Product 7
		Description	Description 1	Description 2	Description 3	Description 4	Description 5	Description 6	Description 7
		Potential clients	Clients 1	Clients 2	Clients 3	Clients 4	Clients 5	Clients 6	Clients 7
		Needed adaptations to reach the market	Needed adaptation 1	Needed adaptation 2	Needed adaptation 3	Needed adaptation 4	Needed adaptation 5	Needed adaptation 6	Needed adaptation 7
Module	Module owner	Expected impact in the market // Replaceability	Very High	Very High	Medium	Low	Medium	Medium	High
Module 1	Partner 1	Difficult	Mandatory	Mandatory	Optional	Optional	Not needed	Not needed	Not needed
Module 2	Partner 2	Difficult	Mandatory	Mandatory	Optional	Optional	Not needed	Not needed	Not needed
Module 3	Partner 3	Medium	Mandatory	Mandatory	Mandatory	Mandatory	Mandatory	Mandatory	Not needed
Module 4	Partner 4	Medium	Mandatory	Mandatory	Mandatory	Mandatory	Mandatory	Mandatory	Not needed
Module 5	Partner 5	Impossible	Mandatory	Mandatory	Optional	Optional	Optional	Optional	Not needed
Module 6	Partner 6	Impossible	Mandatory	Mandatory	Optional	Optional	Optional	Optional	Not needed
Module 7	Partner 7	Impossible	Mandatory	Mandatory	Mandatory	Mandatory	Not needed	Not needed	Mandatory
Module 8	Partner 8	Medium	Mandatory	Mandatory	Optional	Optional	Optional	Optional	Not needed
Module 9	Partner 9	Medium	Mandatory	Mandatory	Mandatory	Mandatory	Mandatory	Mandatory	Not needed
Module 10	Partner 10	Open source	Mandatory	Not needed	Mandatory	Not needed	Mandatory	Not needed	Not needed

Useful tools that we have used

- Additional Tools (II)
  - End-user journey by potential client and phase: customer thoughts, customer actions, customer contact with GHOST solution, potential frustrations, improvement lines
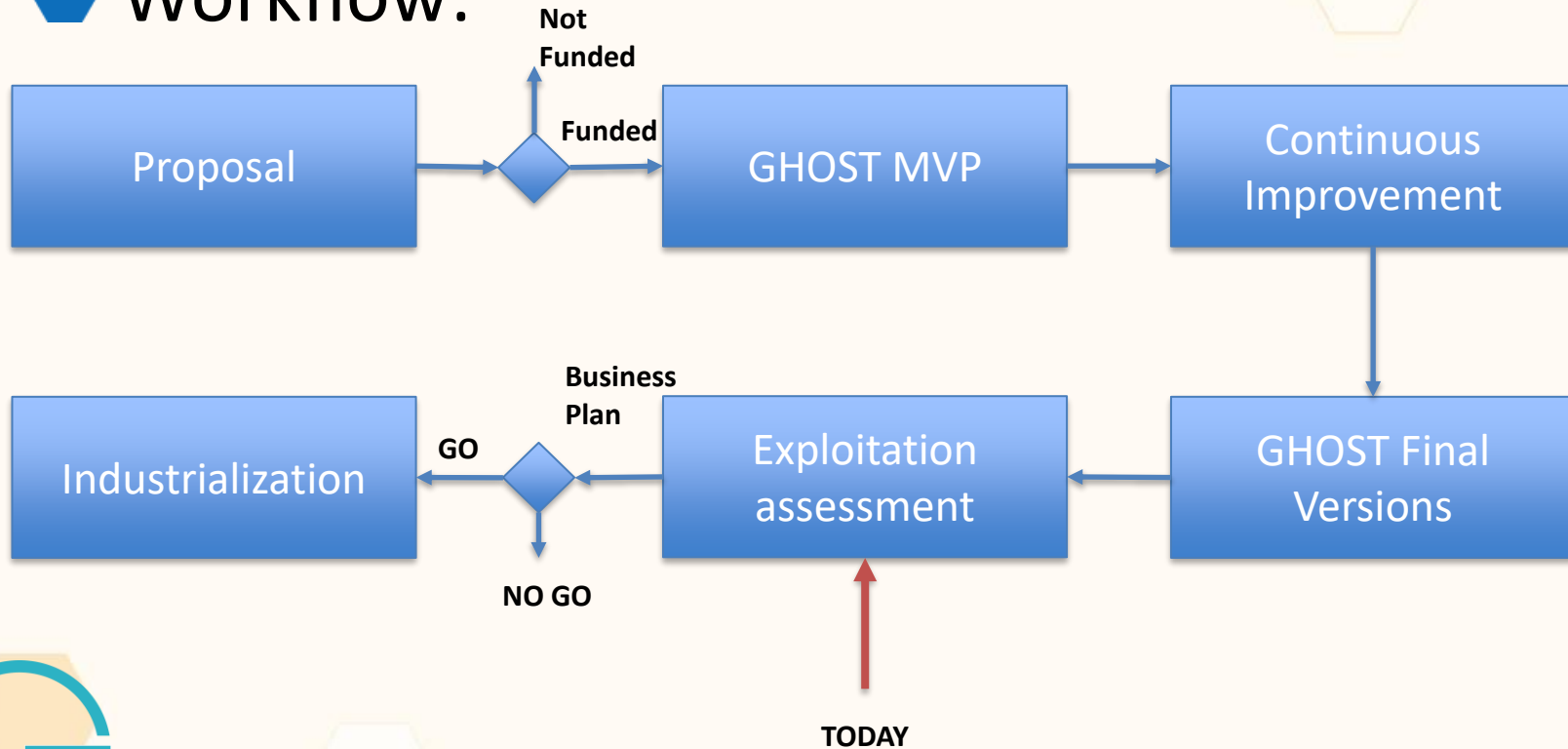
Possible drop out in this action

The color of the canvas is related with the feeling: green is positive feeling, yellow is neutral and orange is negative

User/Costumer

Name	9. Home owners
Description	Rachel is a 45 years old journalist. She lives with her family (her husband Joe and her two children: Lucy, a 14-years old teenager and JJ, a 10-years old kid). Rachel likes the new trend of smart devices and wants to make her home more intelligent: control the lights, measure the consumed energy, some security video cameras, etc. As she is able to deal with technology, she plans to do herself but she is not closed to use a model offered by a service provider. In addition, she is worried about the possible cyber security flaws in her home, so this will be a priority. In addition, it would be great for her if the system is able to track a record of the possible webpages visited by her children, to be sure that they are being responsible. She knows that it would be hard to accept for them but it is worthy.

PHASE	1. Evaluating options and choosing GHOST-enabled	2. Buying the GHOST system	3. Configuring the GHOST system	4. Interacting daily with the GHOST system	5. Dealing with family complains/requests	6. Maintaining and reinforcing the system
Customer thoughts and feelings	I want something to help at home / But I don't everyone know my data / There are tools that can help (trade off …) / Privacy is one of the things to evaluate	CS is a must in the system / Privacy is a must in the system / I want to be protected without actions / I want GHOST but not a service provider	This is hard to understand / I can do it / Functionality is limited by GHOST / I do not have time	GHOST is helping me to protect my data / This is hard to understand / But it requires many interaction / I do not have time	GHOST is helping me to protect my data / My children are more protected / But I am limiting their freedom / I want them to be more responsible	GHOST is helping me to protect my data / This is hard to understand / Am I doing good decisions? / I do not have time
Customer actions	Evaluate non-IoT solutions (paper, smartphone only, etc.) / Evaluate IoT DIY products without GHOST / Evaluate IoT DIY products with GHOST / Evaluate IoT services without GHOST / Evaluate IoT services with GHOST	Buy a GHOST DIY kit and a telehealth system / Contract with a service provider with GHOST	Deployment of the home automation solution / DIY configuration of the GHOST / Configuration supported by a service provider	Dealing with SI and FA / Possible reconfiguration / Possible assisted reconfiguration	Dealing with SI and FA / Possible user account management / Possible user account management	Dealing with SI and FA / Changing devices / Changing devices
Customer touchpoints with GHOST team/solution	Telehealth and tech webpages / GHOST Awareness flyer / Service provider's webpage / GHOST webpage	GHOST webpage / Contact with sales team / Contact with service provider	GHOST configuration interface	GHOST SI interface / GHOST configuration interface / GHOST FA interface / GHOST CoU webpages	GHOST SI interface / GHOST configuration interface / GHOST FA interface / GHOST CoU webpages	GHOST SI interface / GHOST configuration interface / GHOST FA interface / GHOST CoU webpages
Potential frustrations	Home automation costs money / Too many options / Complexity of the systems / I am not able to understand the benefits	GHOST is not compatible with XXX system / I want GHOST but not a service provider / The proposed pricing model does not fit / It is too complicated	This is too complicated / I don't know what to decide / Limited functionality due GHOST	This is too complicated / I don't know what to decide / Limited functionality due GHOST / The system is too slow	GHOST is too freedom restrictive / Educate before prohibit / I don't know how to engage them	This is too complicated / I don't know what to decide / Limited functionality due GHOST
Improvement and business opportunities	Clear prizing in the website / Presence in relevant web portals / Demo video and demo by request / Support material for using GHOST	Smartphone version / Create joint models with service partners / CSaS in delegated mode / Support material for using GHOST	Delegated mode / Non-expert support material / Always possible reconfiguring / Community of users	Community of users / Advises of reconfiguring / Statistics of use and satisfaction / Possible hardware upgrades	Community of users / CS score for gamification / Statistics of use and satisfaction	Community of users / CS score for gamification / Statistics of use and satisfaction / Focus on adaptability

Our present-future plans

Workflow:

```
                    Not
                    Funded
                     ↑
                  Funded
  Proposal ──→ ◇ ──────→ GHOST MVP ──→ Continuous
                                        Improvement
                                            │
                                            ↓
  Industrialization ←── ◇ ←── Exploitation ←── GHOST Final
              GO    Business   assessment        Versions
                     Plan
                     ↓
                  NO GO          ↑
                               TODAY
```

Our present-future plans

- Business Plan:
  - Key assumption: we will create a shared legal entity for exploitation
  - Key points addressed (currently under discussion):
    - Mission and vision
    - Short, mid and long term objectives with specific market, tactical, strategic KPIs
    - Shareholder distribution based on the product and product IPR identification
    - Location and facilities (average costs, resources availability, maturity of entrepreneurship ecosystem, geographical placement, international projection)
    - Current product and services identification (filtered from previously presented)
    - Future product and services identification
    - Market segmentation and analysis
    - Value proposition definition
    - Team definition (CEO, Sales, Developers, etc.)
    - Key financial indicators (annual expenses, annual expenditures, annual revenues, break-even point projection, profit and loses model)

Our present-future plans

🔷 Finalizing our exploitation workflow

🔷 Pitching our business plan:

🔷 Internally in the different partners

🔷 Externally with potential investors (EC, private, etc.)

Contact

Javier Augusto-Gonzalez
TELEVES

jaugusto@televes.com

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

GHOST

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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