



22as PALESTRAS COMUNICAÇÕES MÓVEIS

Aplicações na Internet das Coisas



29 Maio 2014 | Instituto Superior Técnico



Agenda

- O que é a Internet das Coisas?
- (Alguns) Desafios
- Aplicações na Internet das Coisas

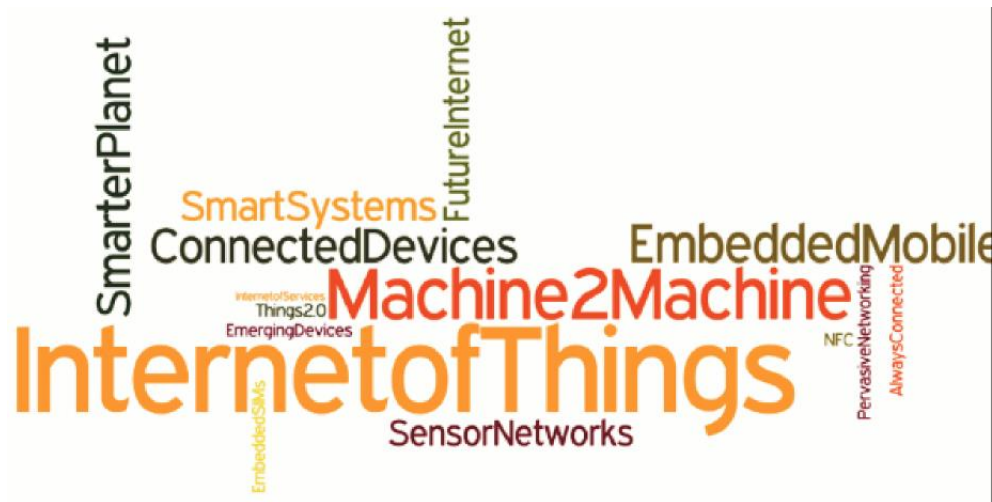


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01

Internet das Coisas

O QUE É INTERNET das COISAS?

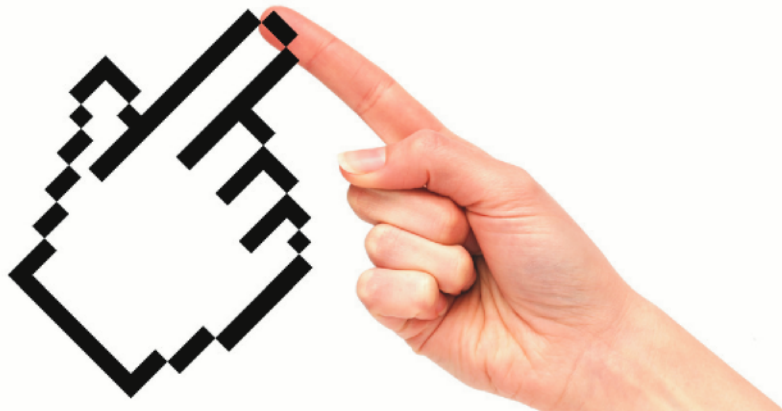


TODAS AS **COMUNICAÇÕES**
EFECTUADAS **ENTRE**
MÁQUINAS COM NENHUMA OU QUASE
NENHUMA INTERVENÇÃO HUMANA

A **Internet of Things** é constituída por um vasto conjunto de “*trends*” e iniciativas onde o **M2M** tem hoje um **lugar de destaque**

UMA NOVA ERA, ONDE A INTERNET E A UBIQUIDADE TÊM PAPEIS CHAVE

A Internet of Things é um conceito que nasce sustentado pelos desenvolvimentos na capacidade de processamento dos dispositivos, na ubiquidade das redes e na forte evolução da Internet



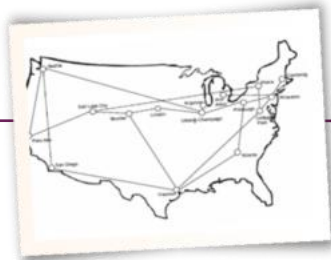
“... a new era of ubiquity, where the users of the Internet will be counted in billions, and where humans may become the minority as generators and receivers of traffic. Changes brought about by the Internet will be dwarfed by those prompted by the **networking of everyday objects**”

In UN Report

A EVOLUÇÃO DO CONTEXTO DE MERCADO DA INTERNET OF THINGS ESTÁ ASSOCIADO À EVOLUÇÃO DA CAPACIDADE DE PROCESSAMENTO DOS OBJECTOS, AO APARECIMENTO DE REDES DE COMUNICAÇÃO VERDADEIRAMENTE UBÍQUAS E À EVOLUÇÃO DA INTERNET

HÁ 25 ANOS ATRÁS...

...apareciam as primeiras redes de dados que ligavam servidores nas principais universidades



Network of Hosts

HOJE...

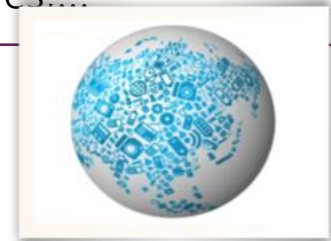
...a Internet é uma rede global que liga computadores por todo o mundo



Network of Computers

EM DESENVOLVIMENTO...

...a rede de dados abrange todo o tipo de dispositivos, desde automóveis, aparelhos eléctricos, mercadorias, os mais variados sensores...



Network of Things

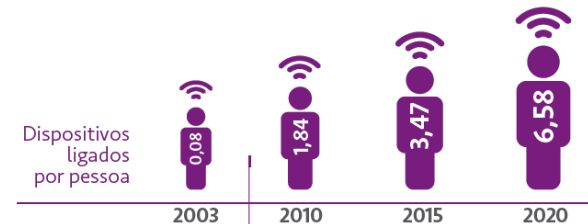
UM MERCADO COM UM CRESCIMENTO ACIMA DA MÉDIA DESTA E DE OUTRAS INDÚSTRIAS

Crescimento previsto de **26%**
(CAGR 2010-14)

50 mil milhões
de equipamentos ligados em 2020
(fonte: Ericsson)



População mundial	6,3	6,8	7,2	7,6
	Mil milhões	Mil milhões	Mil milhões	Mil milhões
Dispositivos ligados	500	12,5	25	50
	Milhões	Mil milhões	Mil milhões	Mil milhões



Source: Cisco IBSG, Abril 2011



E UM MERCADO MUITO FRAGMENTADO: INDÚSTRIAS, APLICAÇÕES e STANDARDS...



É relevante como um todo permitindo novos modelos de negócio e melhorar eficiência dos negócios e processos actuais



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02 Desafios

DESAFIOS DO NOVO PARADIGMA...

NEGÓCIO

- Gestão de milhões de dispositivos
- Elevados volumes de micro transações
- Suporte diferentes modelos negócio
- Suporte diferentes interações c/ Clientes
- Rápida e transparente integração de parceiros
- Testar...falhar...e voltar a testar



You can never make the same mistake twice because the second time you make it, it's not a mistake, it's a choice



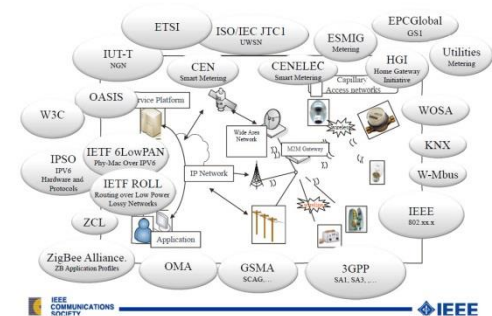
REGULATÓRIOS

- Privacidade
- Segurança

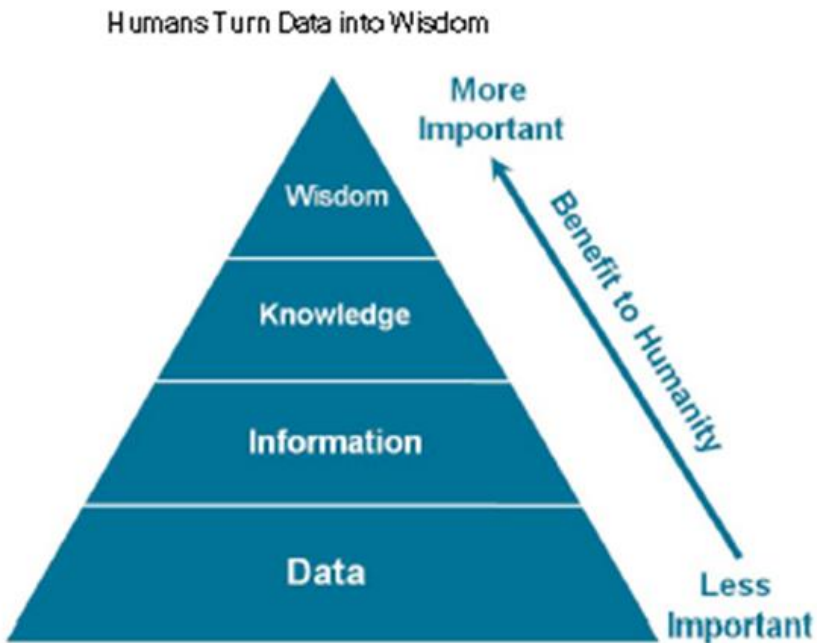
TÉCNICOS

- Arquitetura M2M
- Desenvolvimento de Serviços, Aplicações independentes das redes
- Interoperabilidade
- Facilitar inovação entre indústrias (informação e serviços, APIs)

M2M-Related Standardization Bodies



DESAFIOS DO NOVO PARADIGMA...EXTRAIR VALOR



Source Cisco IBSG, April 2011

INTERNET OF EVERYTHING: REDE PESSOAS, PROCESSOS, DADOS E COISAS...



Pessoas

“Ligar” pessoas de forma mais relevante



Processos

Entregar a informação certa, à pessoa ou máquina certa, no momento certo



Dados

Extrair informação útil dos dados para melhor tomada de decisão



Coisas

Dispositivos ligados entre si e à Internet, para tomada de decisão inteligentes

Reduzir Complexidade

Interoperabilidade & Standards
Keep it simple

Potenciar Inovação

Diferenciação valorizada pelos clientes

Criar Oportunidade

Novo Serviço

PLATAFORMA SERVIÇO M2M QUE ABSTRAI O CLIENTE DA COMPLEXIDADE DA REDE...



Visibilidade,
Controlo,
Flexibilidade...

...AUTONOMAMENTE, EM TEMPO REAL E À DISTÂNCIA DE UM CLICK!





03
Aplicações

M2M Has Many Faces ...

Energy &
Smart grid



Point of Sale
Kiosks



Telematics &
Connected
Automobile



Industrial &
Commercial
Equipment



Healthcare
and mHealth



Fleet
Management
& Distribution
Logistics



Agri-business



Security &
Surveillance



Connected
Consumer
Devices



Smart
Building /
Connected
Home



CASOS DE SUCESSO

QUE ESPELHAM A INOVAÇÃO DAS EMPRESAS EM PORTUGAL



EMPRESA | ISA - Intellicare
SECTOR | Saúde
APLICAÇÃO | Monitorização remota de sinais vitais
DIMENSÃO | Cerca de 500 utilizadores
UTILIZAÇÃO | Controlo e transmissão de dados medidos pelo utilizador
SOLUÇÃO | Rede de dados móveis 2.5G/3G



MONITORIZAÇÃO REMOTA DE SINAIS VITAIS



EMPRESA | Cartrack
SECTOR | Transportes e Segurança
APLICAÇÃO | Gestão de frotas
DIMENSÃO | Vários milhares de veículos
UTILIZAÇÃO | Solução de gestão de frotas com supervisão 24/7
SOLUÇÃO | Rede de dados móveis GPRS/UMTS com necessidade de roaming para monitorização contínua das viaturas



GESTÃO DE FROTAS



EMPRESA | Águas do Mondego
SECTOR | "Utilities" - Águas e Saneamento
APLICAÇÃO | Gestão e monitorização da rede (ETA, ETARs, depósitos, rede de distribuição)
DIMENSÃO | Mais de 700 pontos de controlo
UTILIZAÇÃO | Medição e controlo remotos das estações
SOLUÇÃO | Redes de dados GSM/GPRS



GESTÃO E MONITORIZAÇÃO



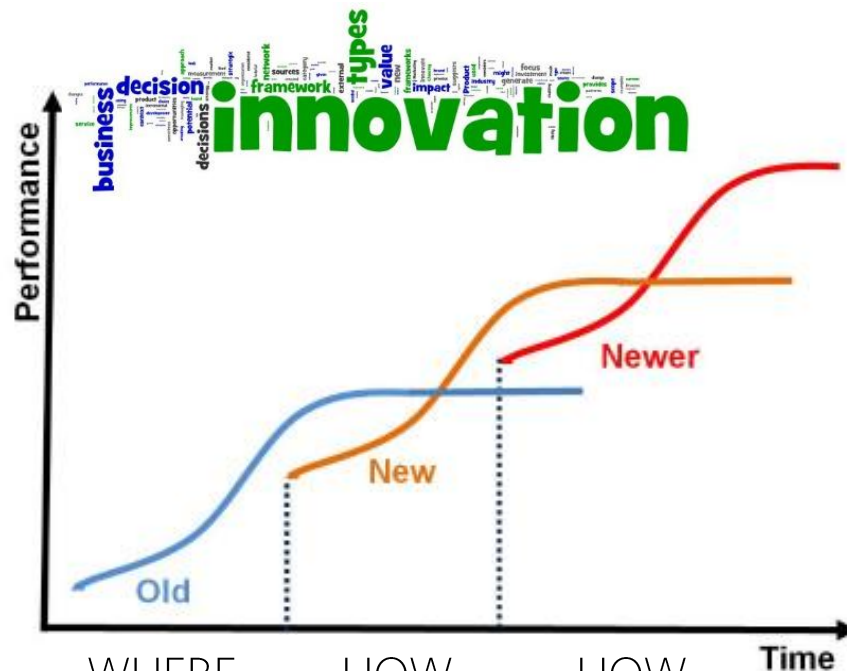
EMPRESA | MOBI.E
SECTOR | Energia
APLICAÇÃO | Rede de mobilidade eléctrica
DIMENSÃO | Cerca de 1350 postos
UTILIZAÇÃO | Gestão técnica, operacional e negócio dos postos
SOLUÇÃO | Rede privada de dados móveis 3G com focus na fiabilidade e segurança. Desenho e entrega de projecto acompanhada pelas equipas Optimus



MOBI.E

EXEMPLO: GESTÃO FROTAS

PRODUCTIVITY MANAGEMENT



WHERE IS THE ASSET

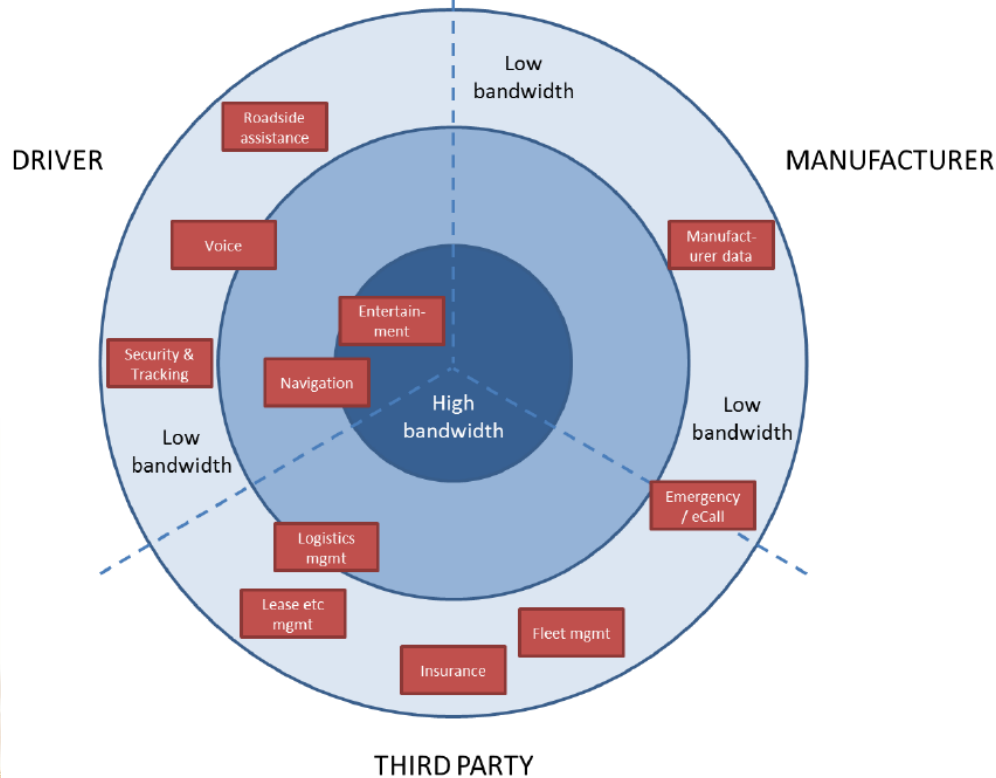
HOW IS BEING USED

HOW TO DO MORE

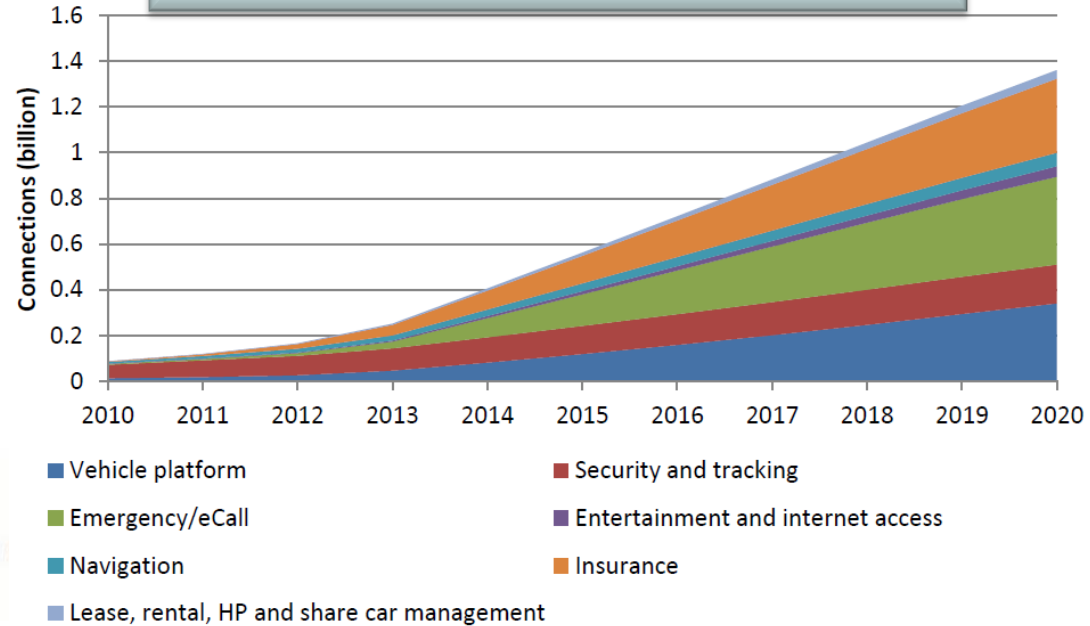
EXEMPLO: INDÚSTRIA AUTOMÓVEL

APPLICATION OPPORTUNITIES

AUTOMOTIVE M2M APPLICATIONS



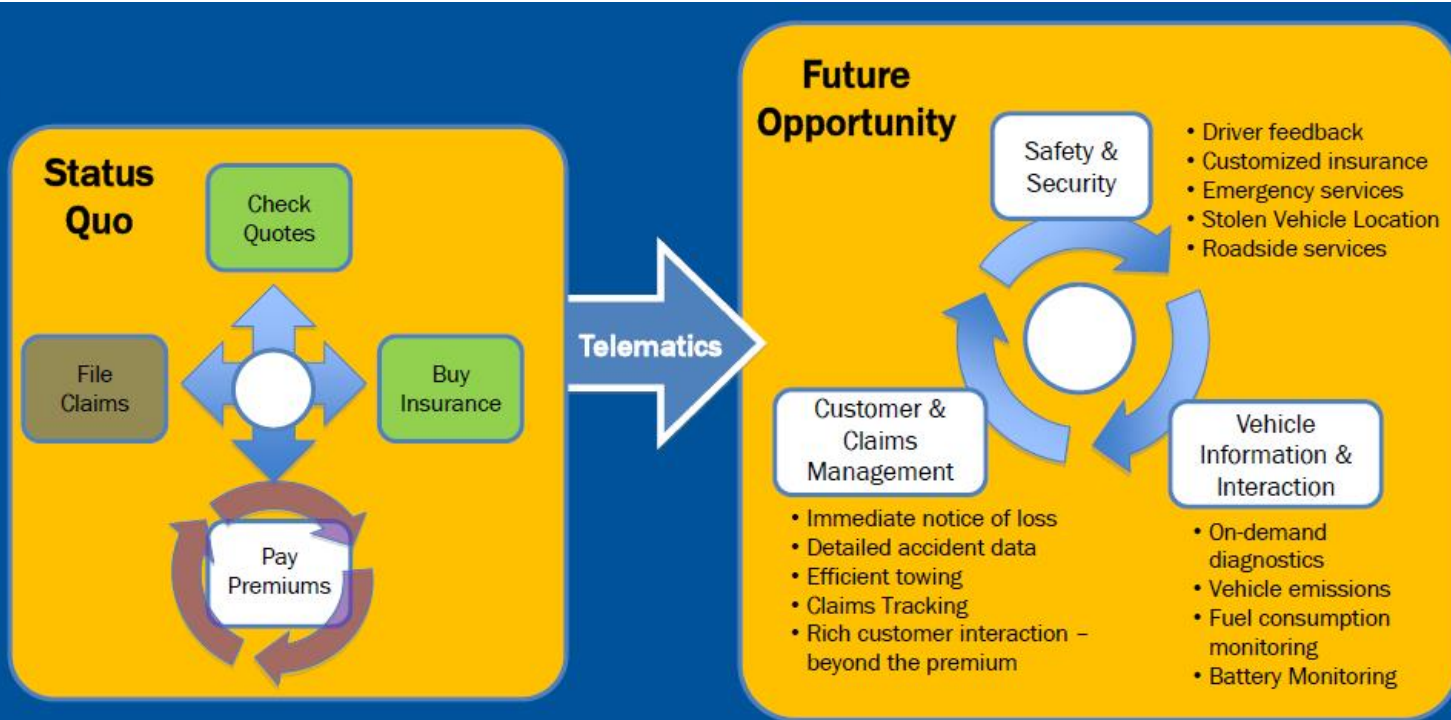
GLOBAL AUTOMOTIVE M2M CONNECTIONS



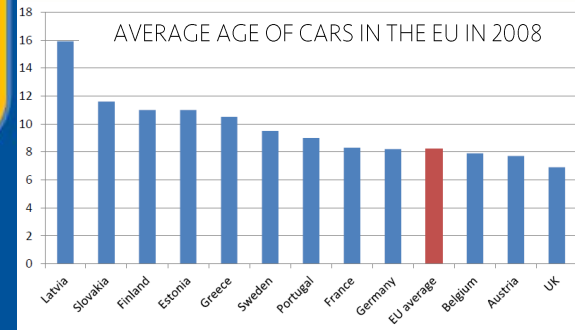
THERE ARE A NUMBER OF OPPORTUNITIES TO SEIZE, SOME BASED ON A PARTNERSHIP MODEL

EXEMPLO: SETOR SEGURADOR

MODELO DE SEGUROS AUTO "PAYD"



SERÁ QUE A INDÚSTRIA DOS SEGUROS VAI TESTAR, ADOTAR E PROMOVER ESTA OPORTUNIDADE ?



EXEMPLO: SETOR SEGURADOR

PRODUTOS PAYD / PHYD



HOME | FAIR PAY INSURANCE | ABOUT FAIR PAY | WHO IS FAIRPAY? | MEDIA & PRESS | FAQs | YOUR DASHBOARD >

Call 0844 892 6279
Monday to Friday 9am to 7pm, Saturday 9am to 2pm

How Fair Pay Insurance Works
In simple terms - technology!

No two drivers are the same - they are unique and will have their own driving fingerprint. By harnessing the very latest in satnav technology, you can command your very own, custom built car insurance premium - based wholly on you!

If you fancy more control over the price you pay (and continue to pay), navigate deeper into the land of fair car insurance to find out more. [Pick a destination below](#)

The Know-How

With the latest sat nav GPS technology on board for data you can trust

Technology Driven By **TOMTOM**

[Find Out More](#)

Custom Build Your Insurance

No two drivers will drive the same road, at the same time, covering the same miles, at the same speed - this makes you different!

At Fair Pay we treat you as an individual! At Fair Pay, you can create your very own, custom built, individual premium.

Your Premium
Your Policy

Latest telematics technology

Combining the very best in telematics technology, we equip you (and your car) with all the tool-kits you need to maintain, adapt and improve your driving behaviour.

Your Technology
Your Dashboard

HOME | LEARNER DRIVER INSURANCE | YOUNG DRIVERS INSURANCE | ABOUT IKUBE | POWERED BY | OTHER STUFF | NEWS

IKUBE Get a quote now! Call us on 0845 602 6925
Monday to Friday 9am to 7pm, Saturday 9am to 2pm

Black Box Insurance

Find out more about black box car insurance with iKube

There's been quite a bit of talk recently about **black box car insurance** for young drivers and it can be a little confusing.

To put it simply - iKube's **black box insurance** covers both young and learner drivers at a reduced premium.

iKube's little black box is discreetly installed in the policy holder's car to simply track the time of day it's being driven at by using GPS technology.

Did you know that statistically 11pm - 5am is the most risky time to drive for young motorists? Well - iKube can offer cheaper car insurance premiums if you avoid driving at these times. So we reward you for safer driving - simple!

With iKube's black box insurance we can offer young drivers between the ages of 17 - 25 the following:

- Either fully comprehensive or third party fire and theft black box car insurance
- The ability to earn your own no claims bonus (NCB)
- We won't charge you per mile, unlike other providers
- We keep it simple - one fixed annual fee or monthly price

So - if you're looking for affordable young driver or **learner driver car insurance** then drop us a line or request a call back and see how much you could save!

[Get a quote](#)

Get a quote

Get quoted for a black box insurance policy.

[CALL ME NOW >](#)

Do I qualify for iKube?

Find out whether you qualify for iKube's black box insurance

[TELL ME ALL >](#)

Refer a Friend

For Those Already Onboard With iKube, £20 e-vouchers up for grabs!

[PLAY >](#)

Save up to 2.5%

Why pay for cover when you're asleep. Discounts for not driving after 11pm

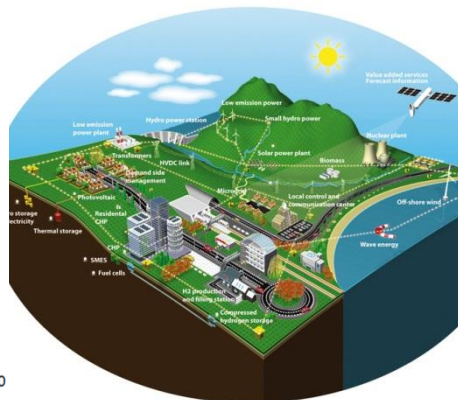
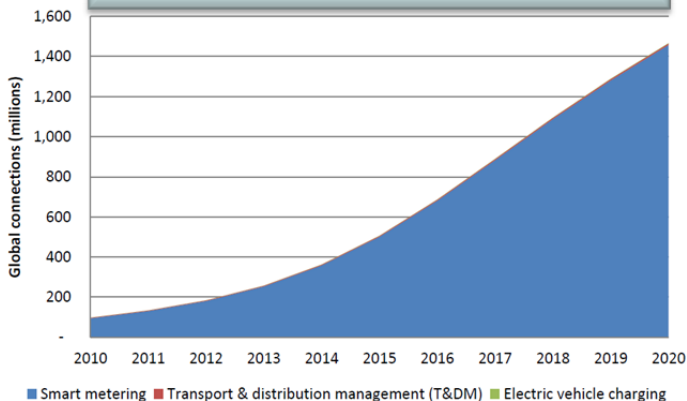
[FIND OUT MORE >](#)

Target group	UBI product
<p>Young drivers</p> <ul style="list-style-type: none"> • 'Boy racers' cause most accidents, increasing premium for other young drivers • 68% of fathers selects insurance 	<ul style="list-style-type: none"> • Risk profiling based on driving behavior • Bonus miles for safe driving
<p>Young parents</p> <ul style="list-style-type: none"> • Safety-conscious drivers • "How do I make sure my kids are safe when I have an accident" 	<ul style="list-style-type: none"> • Safety product: (non-regulatory) eCall, stolen vehicle tracking
<p>Female drivers</p> <ul style="list-style-type: none"> • Women are safer drivers • However, future EU Gender Directive prohibits lower premiums for female drivers 	<ul style="list-style-type: none"> • Additional services, e.g., roadside assistance, claims helpline • Additional cover, e.g., handbag, child car seats
<p>Low mileage drivers</p> <ul style="list-style-type: none"> • Real mileage unknown to insurer, so lowest possible mileage typically 10k p.a. 	<ul style="list-style-type: none"> • Simple proposition: pay-per-mile • Target customers: green drivers, retired drivers, classic cars

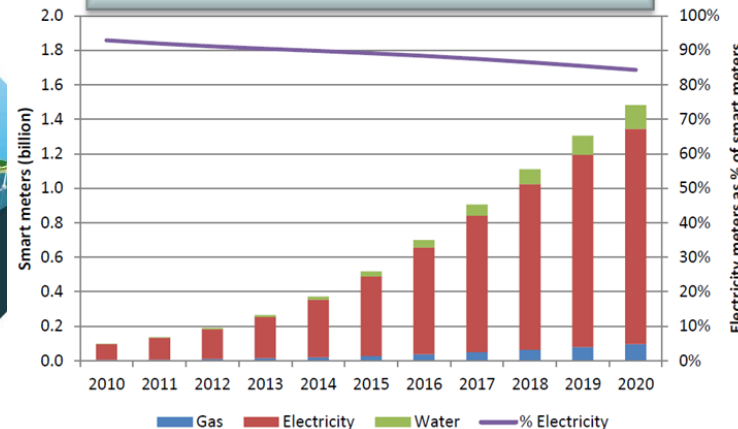
EXEMPLO: INDÚSTRIA UTILITIES

PROJETOS DE **TELEGESTÃO/CONTAGEM**

CONNECTED M2M DEVICES IN THE UTILITIES



GLOBAL SMART METERS BY UTILITY TYPE



Source: Machina Research 2011

AS "SMART"GRIDS SERÃO GRANDE OPORTUNIDADE

ENERGIA VIRÁ PRIMEIRO ÁGUA SURGIRÁ DEPOIS

SMARTGRIDS

A VISÃO HOLÍSTICA DA INDÚSTRIA

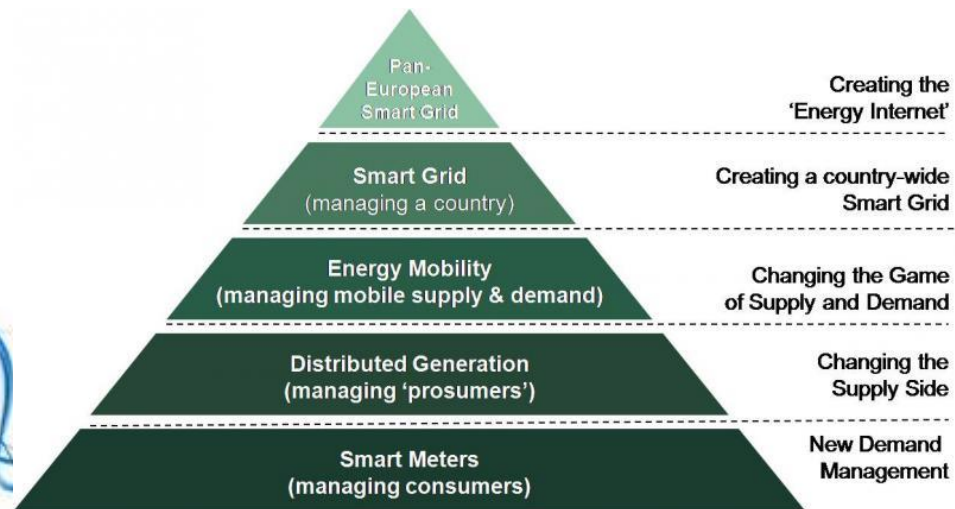


Figure: The Smart Grid Pyramid

INDÚSTRIA ENERGÉTICA PREVÊ
VANTAGENS SIGNIFICATIVAS
NOVOS MODELOS DE NEGÓCIO



PROJETO EDP INOV CITY PARTICIPAÇÃO DA NOS



EDP is installing an open platform with a technology that will offer new services

Electric vehicle charging network



Improved efficiency



Public lightening with LED technology



Network monitoring and fault detection



Renewables integration



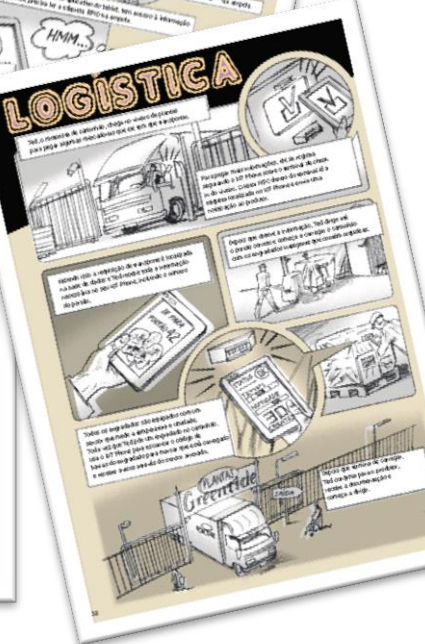
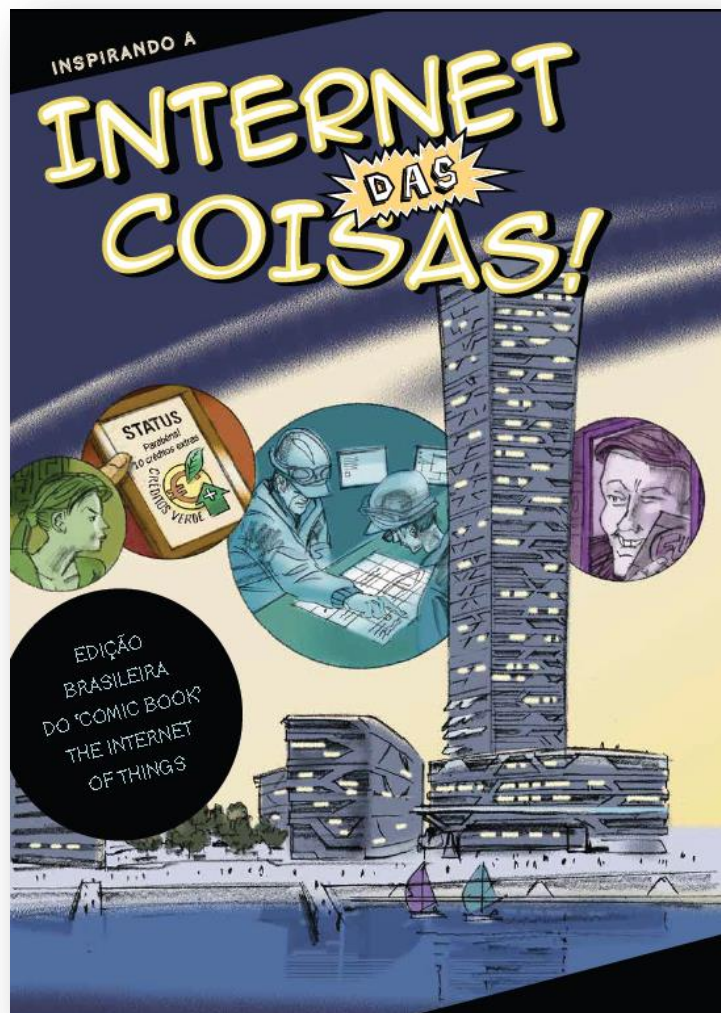
Inovgrid/InovCity was selected as the single CASE-STUDY for assessment of SMART GRIDS projects in EUROPE

The city of Évora is a Unesco World Heritage Site

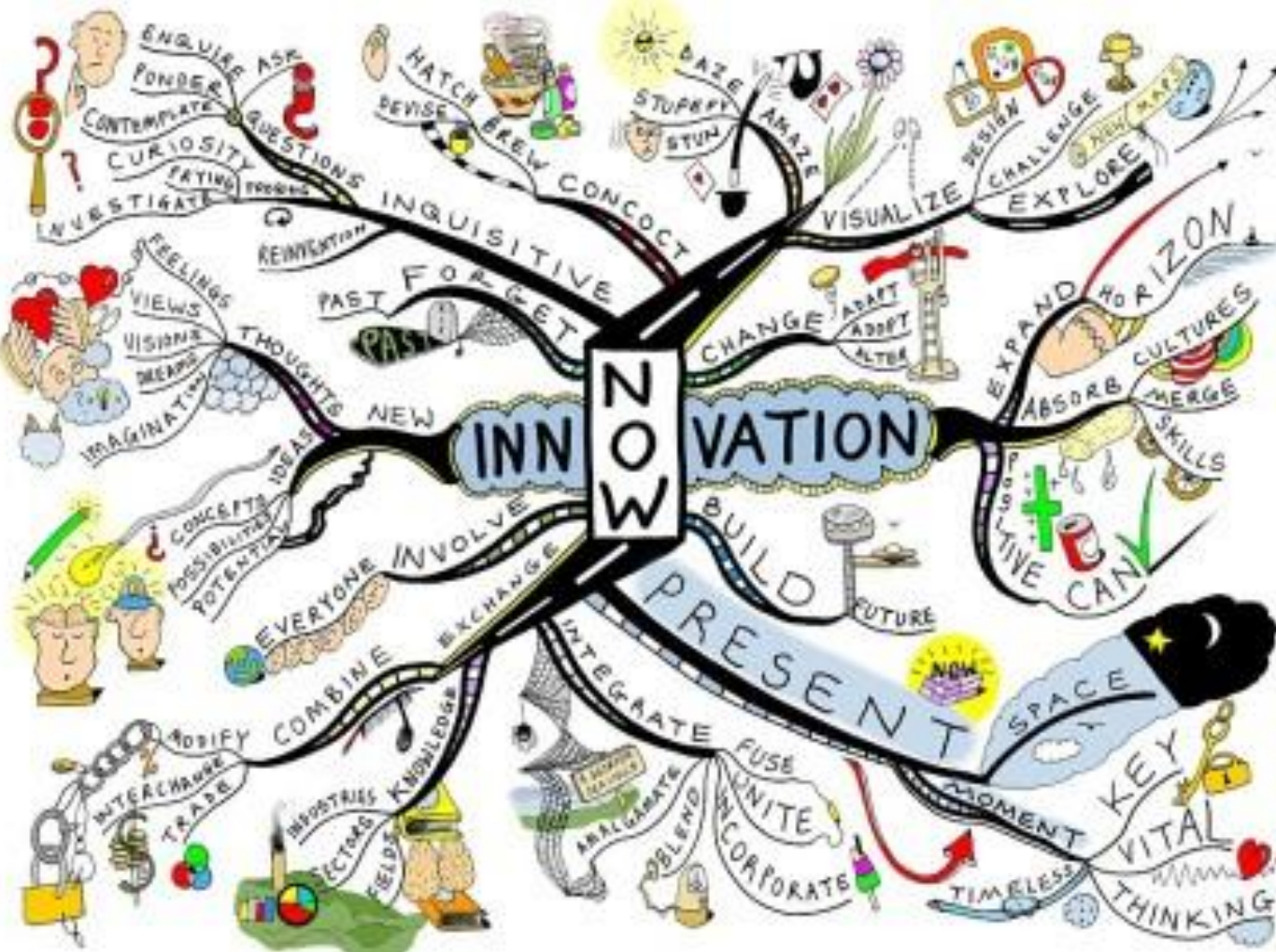


1. Évora municipality:
 - 54.000 inhabitants
 - 1.307 km² of area (urban and rural)
2. The project includes:
 - 30k Energy Boxes and 341 DTCs
 - Integration of IT systems
 - Communications infrastructures
 - New services and products
3. Involvement of the major players of the municipality
4. Coordination with the electric vehicle charging network

InovGrid/InovCity project has been selected among +250 smart grids projects by Joint Research Centre of the European Commission and Eurelectric as the single case study for testing and validation of Business Case assessment methodology



WHAT'S NEXT?



Q&A



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