



PORTUGAL TELECOM SMART CITIES

9 May 2013

AGENDA

SMART CITIES CONCEPT

PT ENHANCING SMART CITIES

**IMPROVING PEOPLE'S LIVES AND INCREASING EFFICIENCY
OF THE COMPANIES**

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IMPROVING PEOPLE'S LIVES AND INCREASING EFFICIENCY OF THE COMPANIES

SMART CITIES RELIES IN FOUR MAIN AREAS

Health and safety

Telemedicine, Emergency solutions, Security management services, Video surveillance, ...

Sustainability and energy efficiency

Energy telemetry (gas, water, electricity), Smart street lighting, Industry automation, Waste management,...

Productivity, knowledge and entertainment

e-Commerce, XaaS, e-Education, Collaboration platforms, Wellbeing, Smart homes, Smart Building, ...

Mobility and convenience

Integrated intermodal interfaces, Advanced mobility safety, Alternative transportation means, Smart transit systems, ...

CHALLENGES IN IMPLEMENTING SMART CITIES

**Changing people 's
behaviour**



**Stakeholder
Engagement**



**Complexity and
interconnectivity**



Funding



FACING A TRANSFORMING WORLD IN SOCIAL AND ECONOMIC MATTERS

KPIs

Urban population
(% of total)

1970s

37%



2020 E

56%

x 1,5

Population older than 65 years
(% of total)

5,3%



9,4%

x 1,7

Global energy consumption
(quadrillion BTU)

210



619

x 2,9

World Gross Domestic Product
(billion US\$)

15



45

x3

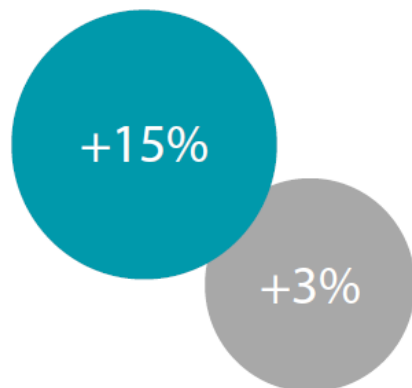
FACING A TRANSFORMING WORLD BUT ALSO IN TECHNOLOGY

CONTENT AND ENTERTAINMENT GO DIGITAL...

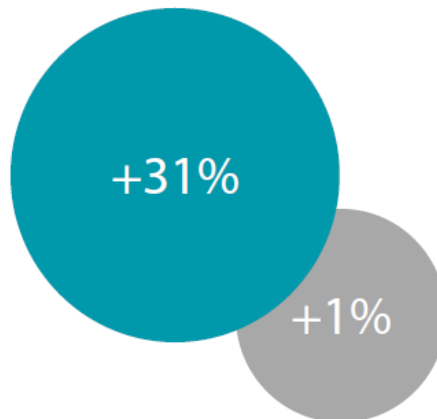
Growth of usage time

2007-2011

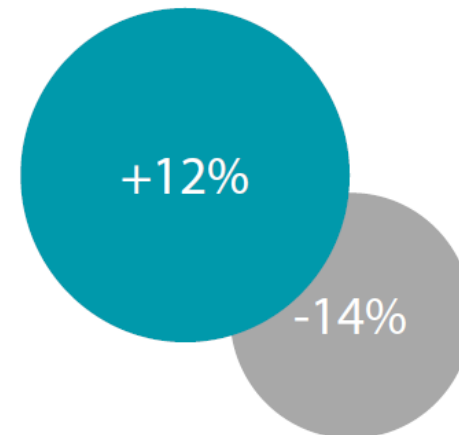
GAMES



VIDEO



MUSIC



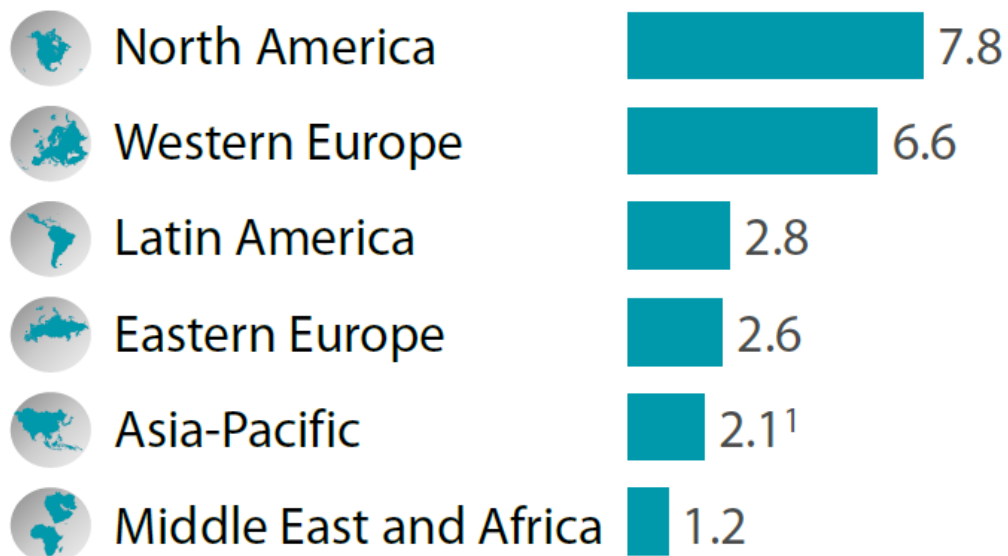
Online

Offline

FACING A TRANSFORMING WORLD BUT ALSO IN TECHNOLOGY

AND MULTI-TASKING IS BECOMING THE NORM ...

2016E. Networked devices per person



¹ China 2.2; India 1.5
SOURCE: Cisco



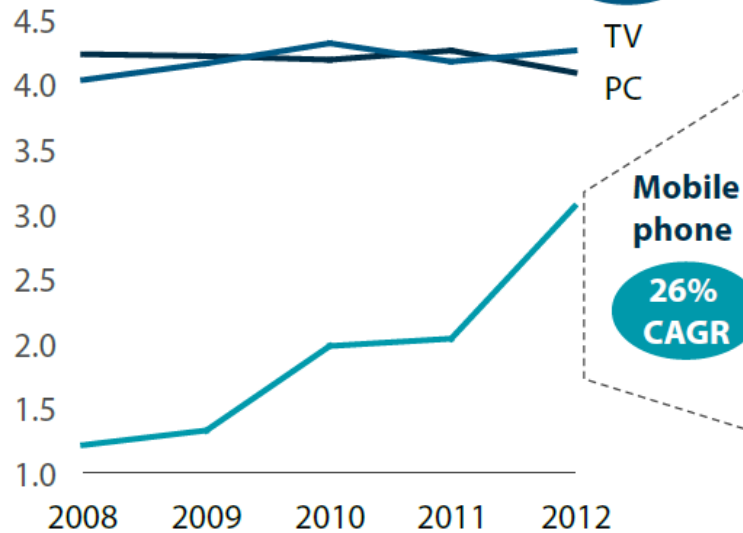
FACING A TRANSFORMING WORLD BUT ALSO IN TECHNOLOGY

EVERYTHING IS GOING MOBILE



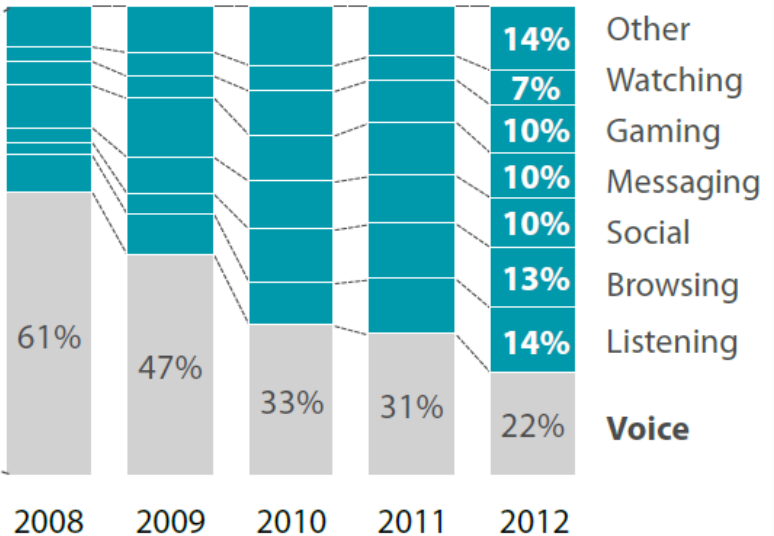
Time spent using devices

Hours per day



Share of time on mobile platform

Percentage



SOURCE: iConsumer US

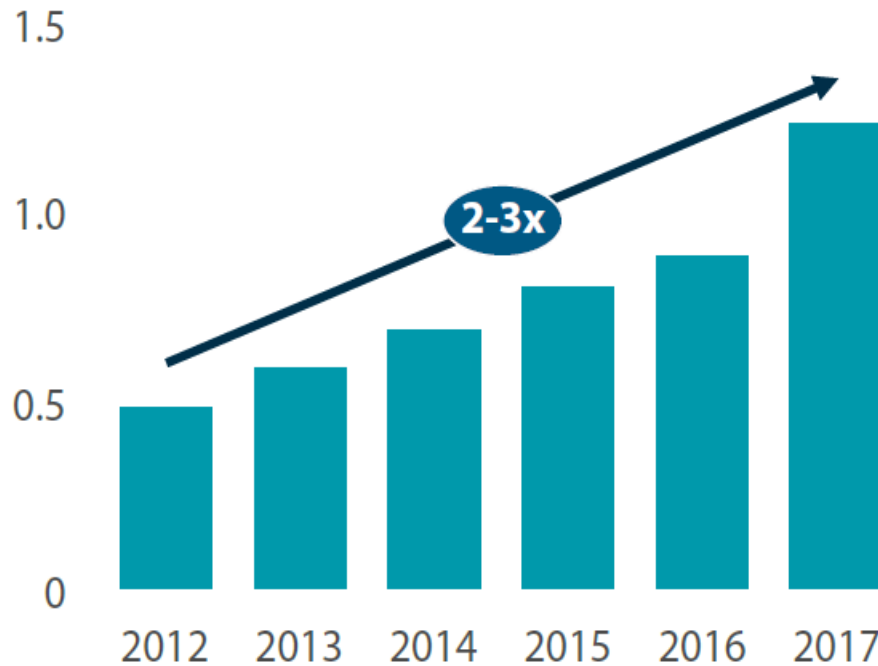


FACING A TRANSFORMING WORLD BUT ALSO IN TECHNOLOGY

CONSUMERS MOVING TO THE CLOUD

Personal cloud subscriptions

World. Billion

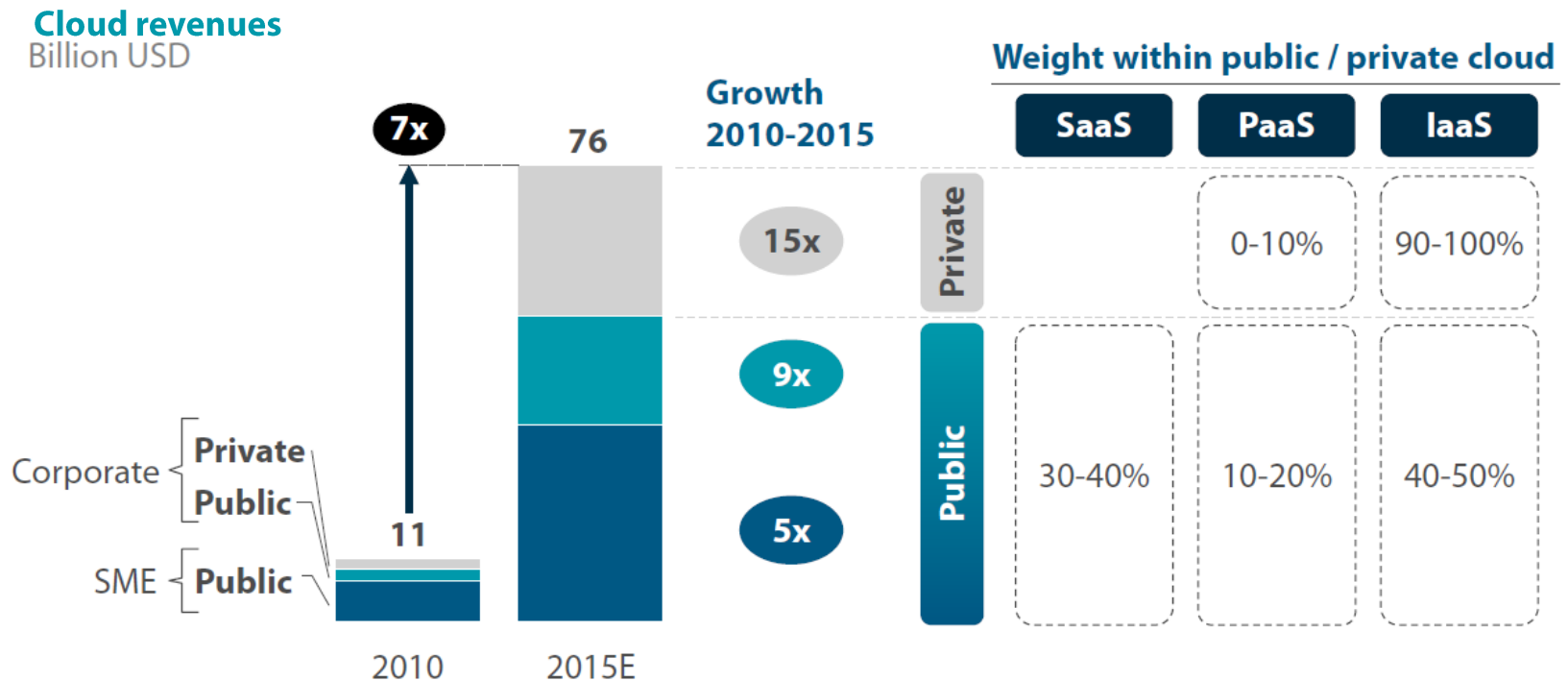


SOURCE: IHS iSuppli Research, October 2012



FACING A TRANSFORMING WORLD BUT ALSO IN TECHNOLOGY

BUSINESSES ALSO MOVING TO THE CLOUD



SOURCE: Cloud Computing Survey; IDC; Forrester; McKinsey SME

FACING A TRANSFORMING WORLD BUT ALSO IN TECHNOLOGY

FAST INFRASTRUCTURE EVOLUTION LEVERAGING NEW USAGE

Average rate of evolution of infrastructure capacity 1980-2000

STORAGE
(Krieder's law)



12

PROCESSING
(Moore's law)



18

BANDWIDTH
(Nielsen's law)

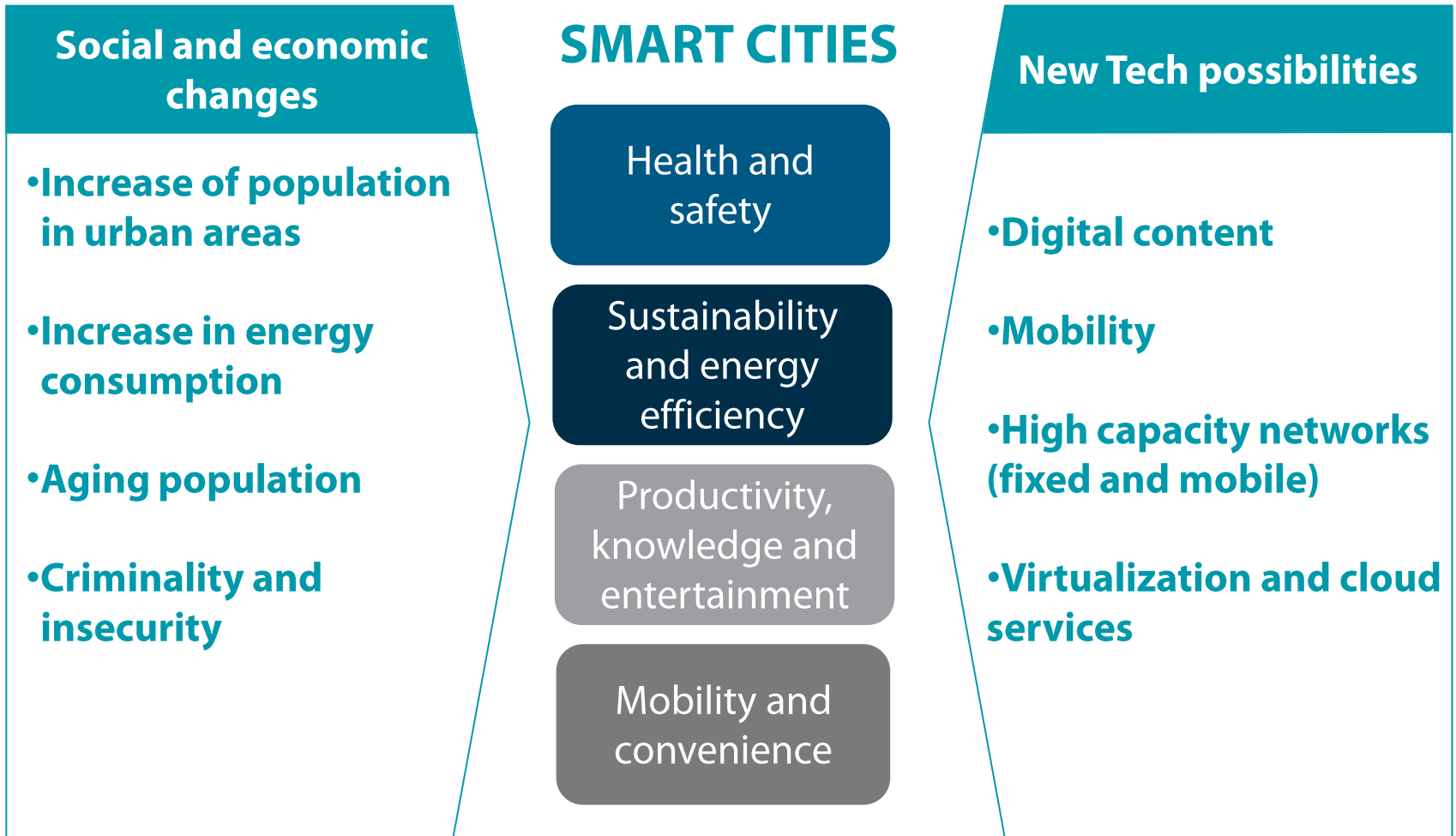


20

● Months needed to double capacity

Scientific American

SOCIAL AND ECONOMIC CHANGES AND NEW TECH POSSIBILITIES JUSTIFY SMARTER CITIES



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PORTUGAL TELECOM IN THE WORLD



100

Million customers

6.8

Billion € annual revenues

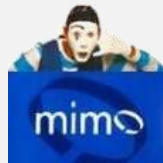
59%

International revenues



STRONG INNOVATION FOOTPRINT

1st prepaid SIM card worldwide



4th country with 100% broadband coverage



Meo, an IPTV case-study



Best European fibre optics network (FTTH Council Europe)



1st prepaid card with unlimited communications



4G 90% population coverage

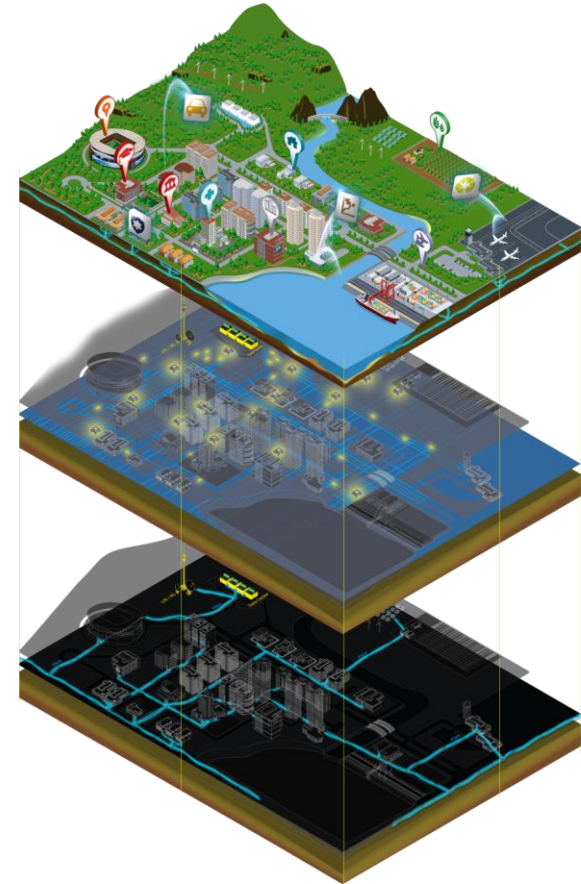


FUTURE PROOF FOUNDATION LAYERS ARE CRITICAL TO CREATE VALUE

SERVICES AND APPLICATIONS

PLATFORMS

NETWORK AND INFRASTRUCTURE



NETWORK AND INFRASTRUCTURE

SERVICES AND
APPLICATIONS

STATE OF THE ART ACCESS NETWORK
3G, LTE, FTTH

PLATFORMS

HIGH CAPACITY TRANSPORT NETWORK
NATIONAL BACKBONE IP/MPLS

NETWORK AND
INFRASTRUCTURE

LEADING EDGE STORAGE & PROCESSING
WORLD CLASS DATA CENTRE



PLATFORMS

SERVICES AND APPLICATIONS

INTERNALLY DEVELOPED M2M PLATFORM AND HIGH-VALUE VERTICALS

PLATFORMS

OPEN INNOVATION AS A KEY STRATEGY TO ENHANCE THE PLATFORMS

NETWORK AND INFRASTRUCTURE

SAPO SDB LAUNCH AS A FIRST STEP IN OPENING TO THE DEVELOPER MARKET



SERVICES AND APPLICATIONS

SERVICES AND APPLICATIONS

SERVICES THAT INCREASE THE QUALITY OF LIFE OF CITIZENS AND THEIR FAMILIES

INCREASE THE EFFICIENCY OF COMPANIES AND PUBLIC SERVICES

PLATFORMS

NETWORK AND INFRASTRUCTURE



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ANATOMY OF A SMART CITY

4 TRANSVERSAL NEEDS ...



Health and safety

Sustainability and
energy efficiency

Productivity,
knowledge and
entertainment

Mobility and
convenience

... FOR CONSUMERS, ENTERPRISES AND PUBLIC SERVICES

Consumer

Increase the quality of life of citizens and their families

Home



Personal



Enterprise

Increase the efficiency of companies and public services

SoHo & SMEs



Corporate & Public Services



Health and safety

Sustainability and energy efficiency


Productivity, knowledge and entertainment

Mobility and convenience


B2C: CREATING SOLUTIONS TO INCREASE CITIZENS' AND FAMILIES' QUALITY OF LIFE

Consumer Increase the quality of life of citizens and their families

Home



Personal



Enterprise Increase the efficiency of companies and public services

Micro & SMEs



Corporate & Public Services



- Health and safety
- Sustainability and energy efficiency
- Productivity, knowledge and entertainment
- Mobility and convenience

CREATING SOLUTIONS TO INCREASE CITIZENS' AND FAMILIES' QUALITY OF LIFE

Roadmap

Health and safety

Sustainability and energy efficiency

Productivity, knowledge and entertainment

Mobility and convenience



Telecare



Video-surveillance



Energy Metering



Smart Plugs



Music on Demand



Anywhere / Anytime TV



Mobile Payments



Mobile Ticketing



Remote Monitoring



Baby Monitoring



Auto Metering



Natural Gas Metering



Games on Demand



Personal Cloud Storage



Mobile Parking



Mobile GPS



Pet Tracking



Child Tracking



User-Gen content on TV



Sapo Scratch



Wi-Fi Hotspots



Sapo Transportes

MEO ENERGY – UP TO 40% SAVINGS



- Total home consumption, per day, week, month or year
- Recommendations for saving energy and reducing costs
- Easy-to-use TV interface



MEO Energy has the potential to reduce energy consumption and ecological footprint **up to 40%** in a typical household

B2B: DEPLOYING PRODUCTS AND SERVICES TO INCREASE THE EFFICIENCY OF ORGANIZATIONS

Consumer

Increase the quality of life
of citizens and their families

Home



Personal



Enterprise

Increase the efficiency of
companies and public services

SoHo & SMEs



Corporate & Public Services



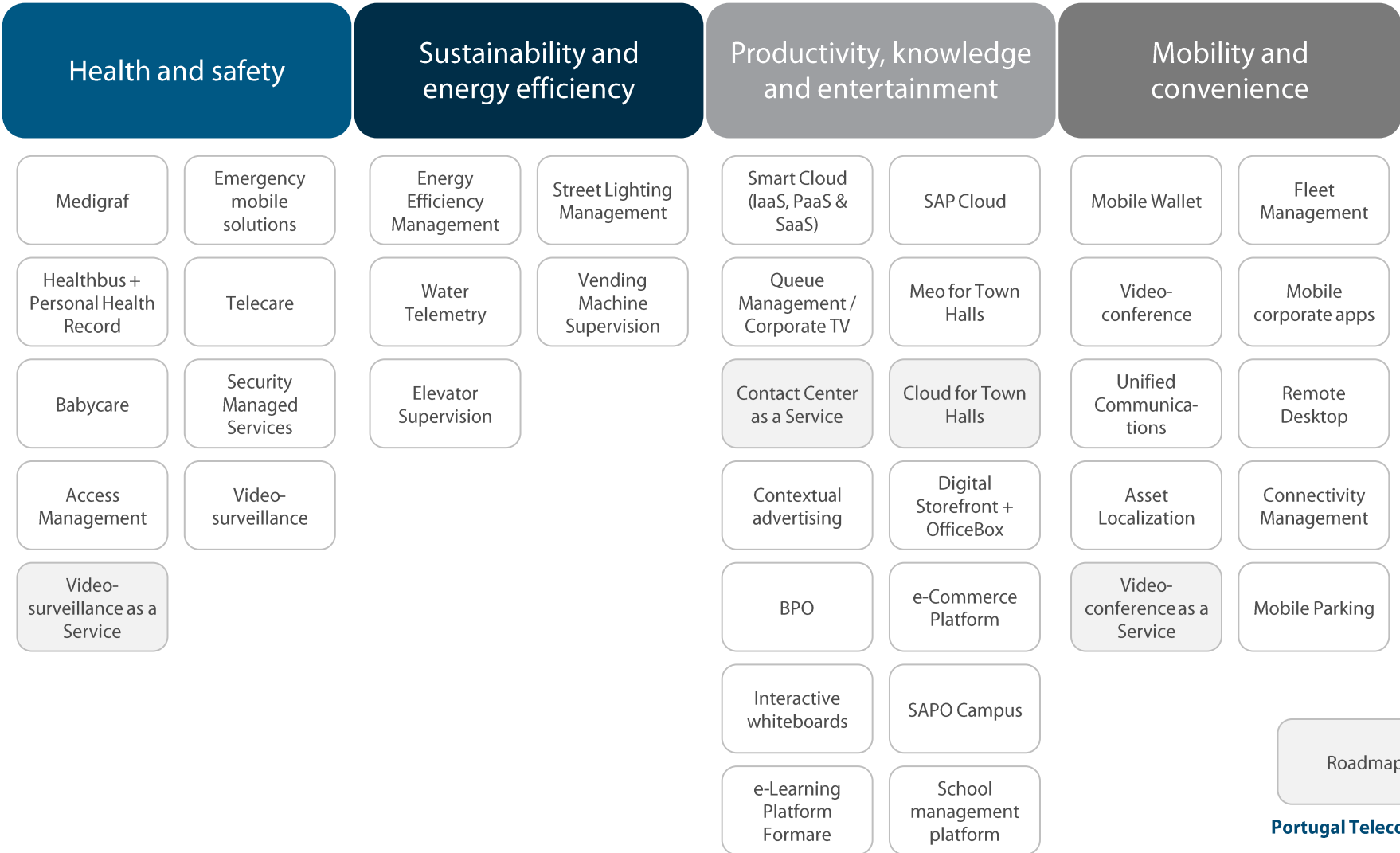
Health and safety

Sustainability and
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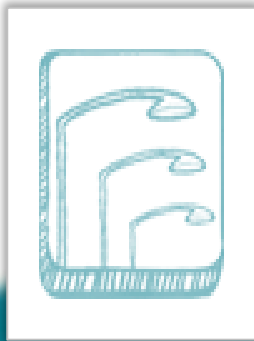
INCREASING THE EFFICIENCY OF ORGANIZATIONS PT'S PORTFOLIO FOR SMART CITIES



Roadmap

SMART M2M PT

Smart Street Lighting



Water Telemetry



Vending Machines



Elevators /Lifts



Fleet Mgmt



Tracking



Home Mgmt



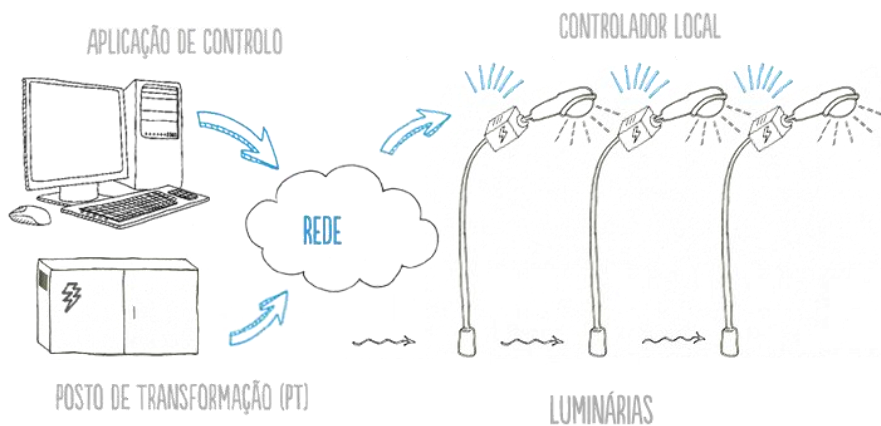
Wellbeing

SMART STREET LIGHTING



Intelligent and remote lighting management of streets, residential areas and business premises.

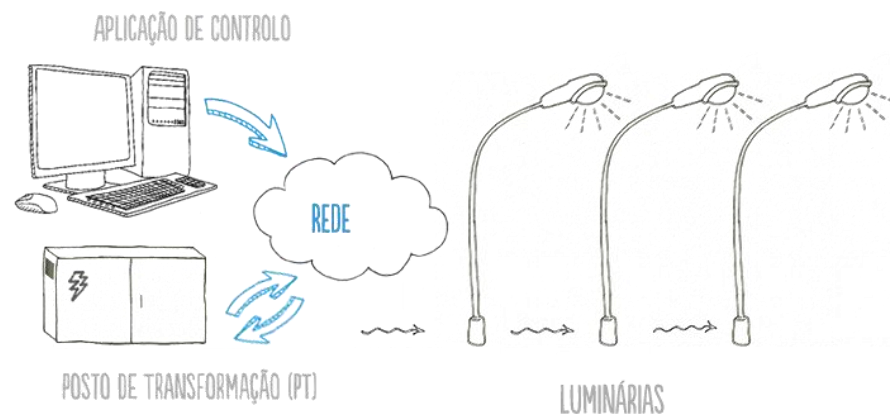
POINT-TO-POINT LIGHTING CONTROL



Individual control of each streetlight

ENERGY SAVINGS UP TO 90% (with LED).

CENTRALIZED LIGHTING CONTROL



Combined control for groups of streetlights

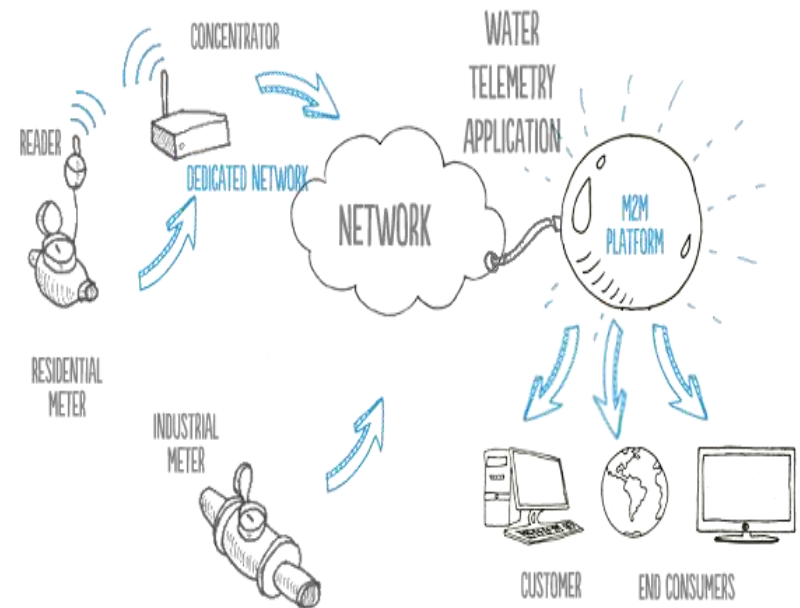
ENERGY SAVINGS UP TO 30%

WATER SMART METERING

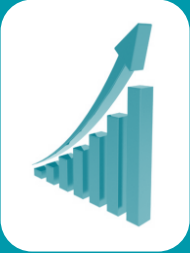


Remotely operated water meter reading service designed for utilities and public institutions

- On-demand meter reading (customers and end consumers)
- Processing of meter alarms
- Self-care platform to manage the entire remote telemetry system



ALL IN ALL



Smarter cities appear in response to pressure on urban areas and relies in new technological possibilities



PT has built future proof foundation layers critical to create value – Network and Infrastructure



PT has a comprehensive portfolio of all the necessary components to build smarter cities today



THANK YOU

