Best practice policies and initiatives on M2M
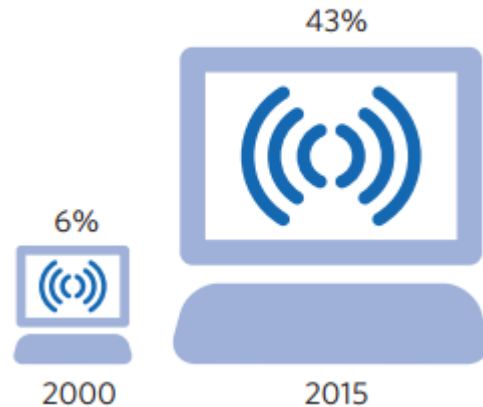
Maximiliano Martinhão
Secretary of Telecommunications (Brazil)

GSMA MOBILE WORLD CONGRESS
BARCELONA 22-25 FEB 2016

We must go beyond the comfort!

IoT can and should be used to achieve the Millennium Development Goals.

Global Internet penetration

43%

6%

2000   2015

"The 2010 Brazilian Census introduced several innovations in its operation. Digital census mapping was developed and integrated with the National Address File, which made the census data collection more efficient and more accurate."

Source: The Millennium Development Goals Report 2015.

1 ERADICATE EXTREME POVERTY AND HUNGER

2 ACHIEVE UNIVERSAL PRIMARY EDUCATION

3 PROMOTE GENDER EQUALITY AND EMPOWER WOMEN

4 REDUCE CHILD MORTALITY

5 IMPROVE MATERNAL HEALTH

6 COMBAT HIV / AIDS, MALARIA AND OTHER DISEASES

7 ENSURE ENVIRONMENTAL SUSTAINABILITY

8 A GLOBAL PARTNERSHIP FOR DEVELOPMENT

LOSS AND WASTE OF FOOD (BRAZIL)

- **Sensors can monitor the entire production chain, from planting to delivery of food, collecting information on load, temperature, traffic and handling, contributing for the reduction of loss and waste of food.**

210 annual agriculture production

MILLION TONES

70 annual loss and waste

MILLION TONES

7.2 million Brazilians in serious food insecurity

3.5% OF POPULATION

Source: IBGE, PNAD and Embrapa.

10% Harvest

50% Handling and transport

30% Storage

10% Supermarket and at home

HEALTH SYSTEM

- **Patient monitoring + telemedicine**

- **Reducing queues**

- **IoT can add additional 28.4 million patients in the Public Health System by 2017**

- **Reduction of up to US$ 14.1 billion in service costs by 2017**

Range of mHealth benefits in 2017	Unit	Brazil	
		100% adoption (full potential)	10% adoption (if no action taken)
Estimated population in 2017	mn	216.6	
Additional patients reached	mn	28.4	3
Total care cost saved	bn USD	14.1	1.5
Public care cost saved	bn USD	6.9	0.7
Additional patients accommodated within cost savings	mn	4.3	0.7
Additional economic output generated by healthier patients	bn USD	4.6	0.5

Total healthcare cost savings		Wellness and prevention		Diagnosis		Treatment and monitoring		System efficiencies		Workforce to support mHealth
14.1	=	12.3	+	0.34	+	2.59	+	0.02	−	1.1
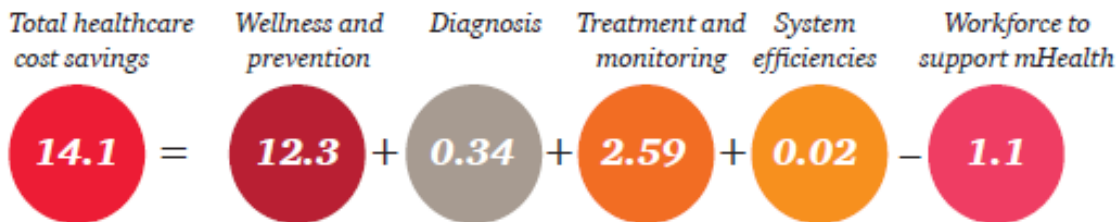
IoT solutions facilitate disease prevention because it monitors in real time the people's health and creates databases for use in public policy.

4 REDUZIR A MORTALIDADE INFANTIL
5 MELHORAR A SAÚDE DAS GESTANTES
6 COMBATER A AIDS, A MALÁRIA E OUTRAS DOENÇAS

EDUCATION

- **Games + e-Learning**

- **Education for people with disabilities**

- **Monitoring physical activities**

- **RFID: tracking, school attendance and access control**

- **Large-scale tests**

RFID Technology

Track school buses

Access control

Notification via application or text message
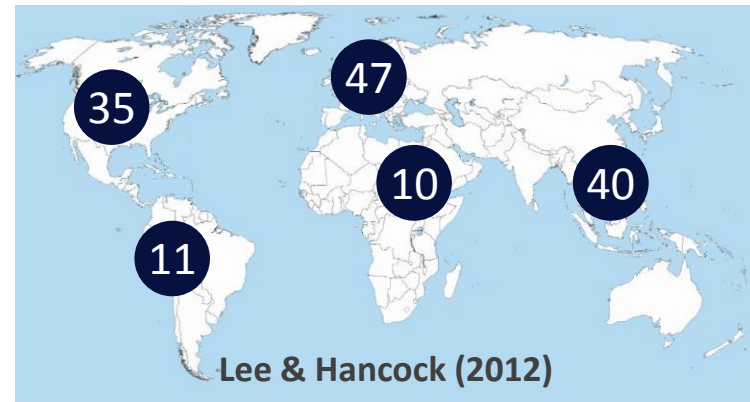
Controls the school attendance increases class time

SMART CITIES

- **Energy, gas, water, sewage, garbage collection and pest control**

- **Public safety and lighting**

- **Mobility**

- **Disaster prevention**

- **e-Government**

143 smart city projects worldwide

35
47
10
40
11

Lee & Hancock (2012)

Smart cities actions in Rio de Janeiro (RJ)

Rio's Operational Center: 560 cameras, +400 employees

20 live traffic pannels (Grupo Pensa and Waze)

Rio Smart City: QR Code tags at bus stops

2 EDUCAÇÃO BÁSICA DE QUALIDADE PARA TODOS
3 IGUALDADE ENTRE SEXOS E VALORIZAÇÃO DA MULHER
8 TODO MUNDO TRABALHANDO PELO DESENVOLVIMENTO

Brazil's potential

Cumulative impact of IoT over brazilian GDP by 2030

US$ 210 billion
with government action

US$ 39 billion
without government action
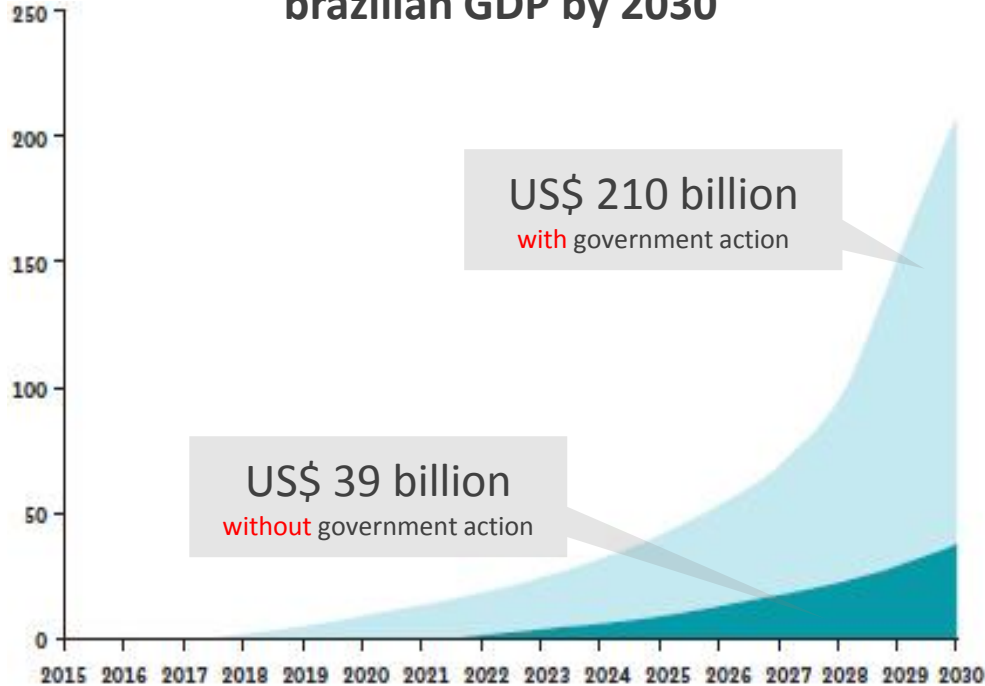
Opportunities

- Brazilian consumers have an enormous appetite for technology and adopt innovations quickly.
- High rate of urbanization (85%), facilitating the dissemination of the benefits of IoT.
- Healthy and growing community of startups, especially in the city of São Paulo that appears in the list of top 20 in The Global Startup Ecosystem Ranking 2015 report.

Sources: Purdy, Davarzani and Ovanessoff 2015, Compass 2015 and World Bank.

Some government actions for startups

Programa Nacional de Aceleração de Startups — R&D grants, training and investor rounds at Silicon Valley / USA.

SENAI SESI / INOVATIVA BRASIL — Grants for technological innovation, innovative start-ups and innovative solutions for Health, Safety and Quality of Life.

startup RIO — Financial support of up to USD 15 K lasting up to 12 months. 1,000 m² of free shared space.
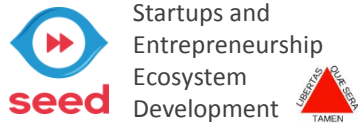
seed — Startups and Entrepreneurship Ecosystem Development — Up to 40 startups receive up to USD 20 K in a 6 month program. Iincludes physical space, mentoring, events and monitoring of projects.

Startup SC — Workshops, courses and mentoring sessions, credits for use of the AWS platform and other benefits.

FEDERAL GOVERNMENT CREATED IN 2014 M2M MANAGEMENT CHAMBER TO MONITOR, SUBSIDIZE AND PROMOTE M2M COMMUNICATION IN BRAZIL

Composition

The Chamber is debating these themes (and more…)

- Utilities
- Interoperability
- Data Privacy
- Health
- Regulation
- Training
- Retailing
- Security
- Taxation
- Agribusiness
- Smart Cities
- Education

Brazilian policies and initiatives

Regulatory update on spectrum by ANATEL
- Regulation on coexistence between Digital TV and IMT in the 700 MHz band
- Review of Spectrum Use Regulation (SUR)
- Review of the Regulation on Human Exposure
- Proposals for allocation of 500 MHz for Fixed Satellite Service

Antenna law (Federal Law 13116/2015)
- Unifies cellular antennas installation rules across the country
- Facilitates the choice of sites to install base stations
- Sets 60 day deadline for local governments to license antennas
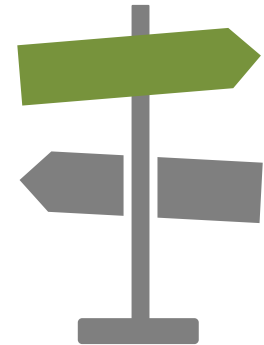
Brazilian policies and initiatives

**Civil framework of the internet (Federal Law 12965/2014)**
- Protection of privacy and personal data, unless asked by judge
- Network neutrality, except for technical requirements and emergency services
- Encourages open technological standards
- Freedom of business models

Tax cuts for
- M2M connections (TFF and TFI)
- Deployment of telecommunication networks (REPNBL)
- Devices (smartphones, tablets, PCs, laptops, etc.) (Good Law)

National IoT Plan
- The draft of National IoT Plan is under development and will open a public consultation for society contributions
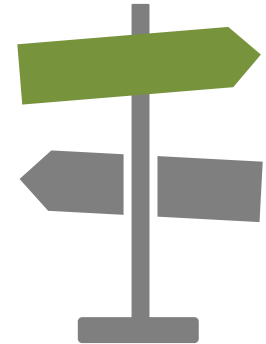
Thank you!

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Secretary of Telecommunications

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