



# Tendência Mundial

## A INTERNET DAS COISAS

## APLICADA À EDUCAÇÃO

Ricardo Santos

Cisco – Mercado de Educação

[ricardo.santos@cisco.com](mailto:ricardo.santos@cisco.com)

# O que é a IOE Internet of Everything e o que são os “Smart Objects”

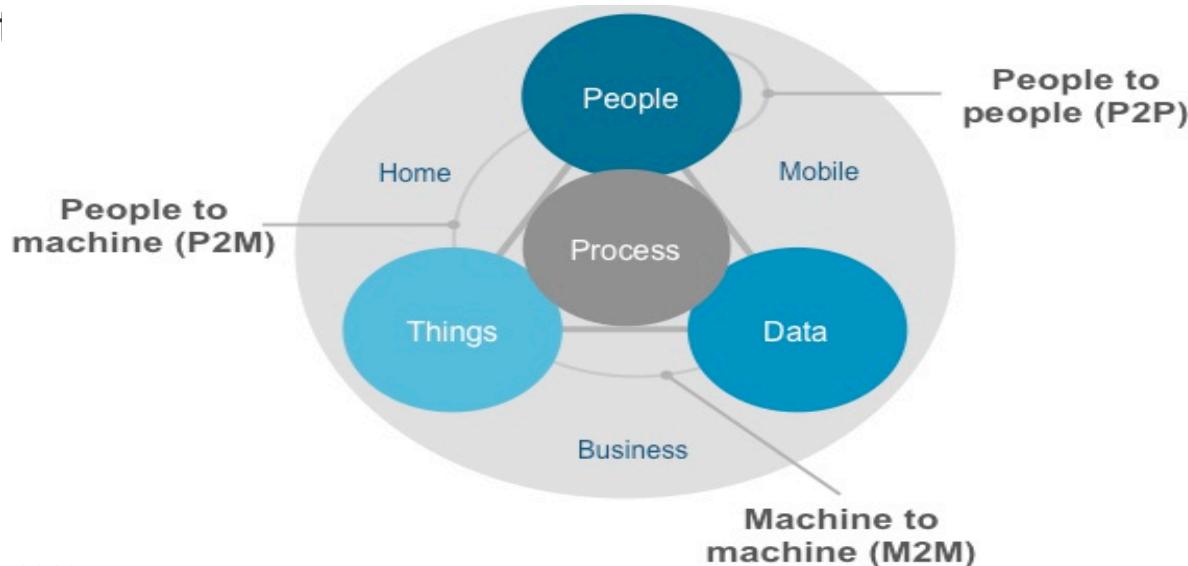
# O que é Internet of Everything

A **Internet of Everything** é uma nova tendência mundial que permite a conexão de OBJETOS INTELIGENTES que capturam + armazenam + transmitem informações pela web – entre Pessoas, Processos, Bases de Dados e Dispositivos



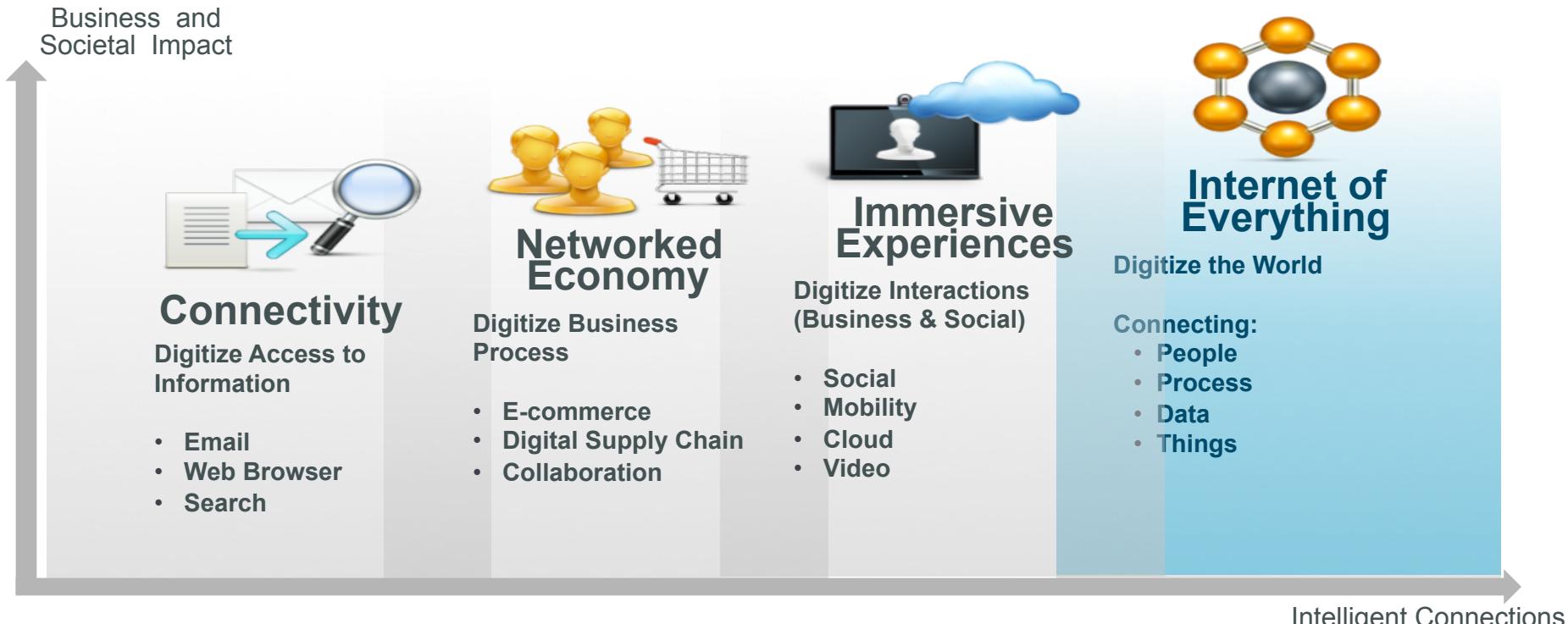
# A Internet of Everything Connectatudo o que AINDA NÃO está conectado

IoE reúne em um ambiente conectado Pessoas, Processos, Bases de Dados e Dispositivos para tornar as informações trocadas MAIS RELEVANTES e com EXPERIÊNCIAS MAIS RICAS para atividades profissionais, sociais e acadêmicas através da int



Source: Cisco IBSG, 2013

# IoE é a Evolução da Internet



# Sociedade Digital – baseadas em Apps

## Redes Sociais com “Coisas” interconectadas – em CASA



# Redes Sociais com “Coisas” interconectadas – IMPACTO NAS ORGANIZAÇÕES

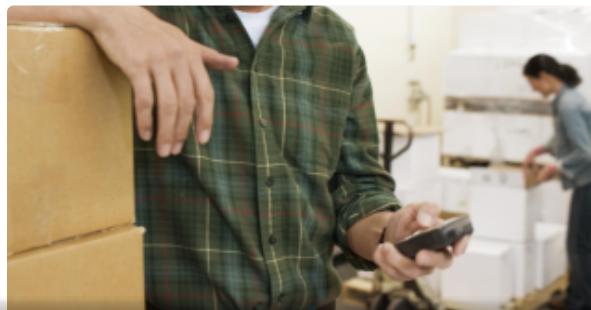
## Eficiências Operacionais



## Processos Inteligentes



## Crescimento Econômico



## Segurança

## Produtividade do Trabalho

## Normas e Procedimentos

# Sociedade Digital – baseadas em “Hardware Social” Objetos Inteligentes – *Smart Objects*



Smarphone como PDV para compras com cartão



Vendor machine com reconhecimento perfil do usuário



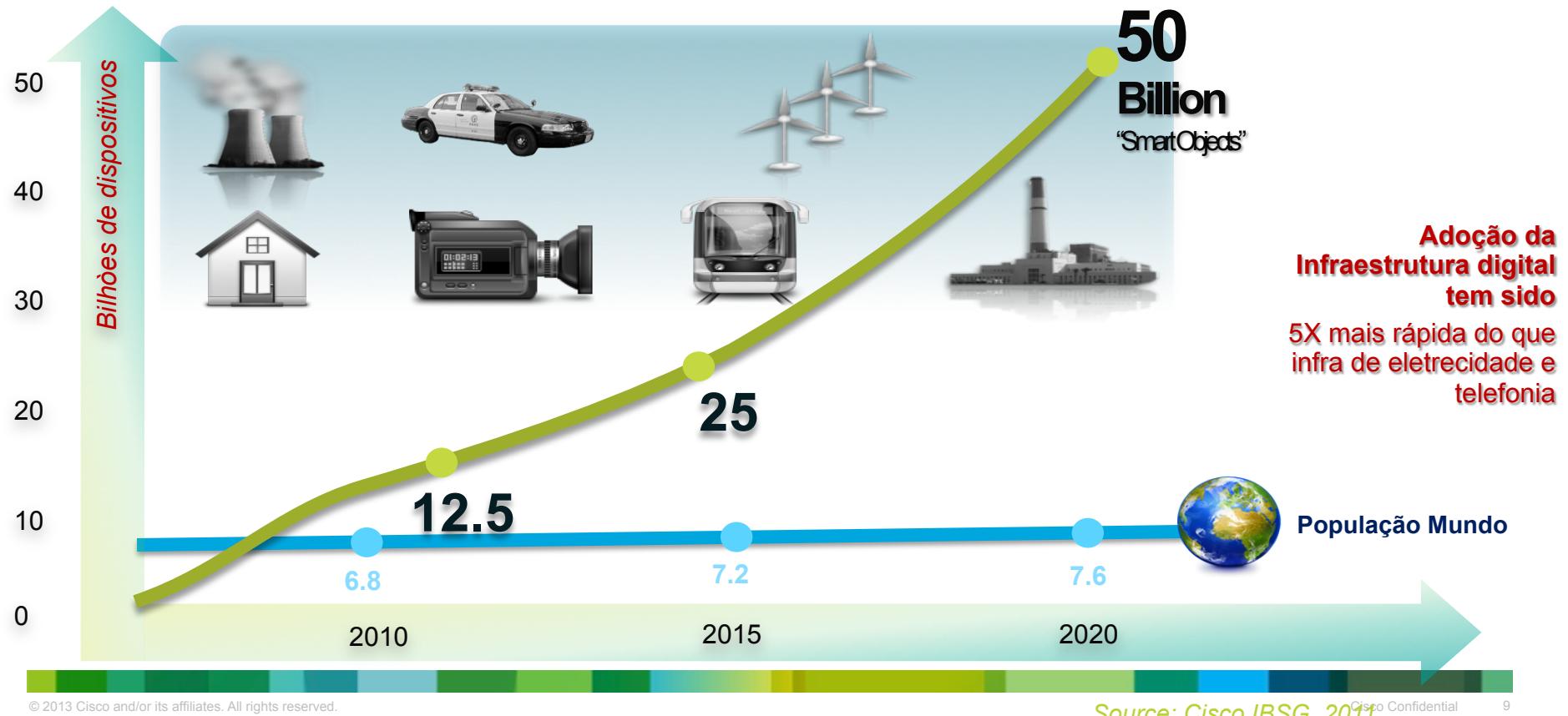
Ponto de ônibus como uma central de informações públicas



Monitoramento MÉDICO à distância

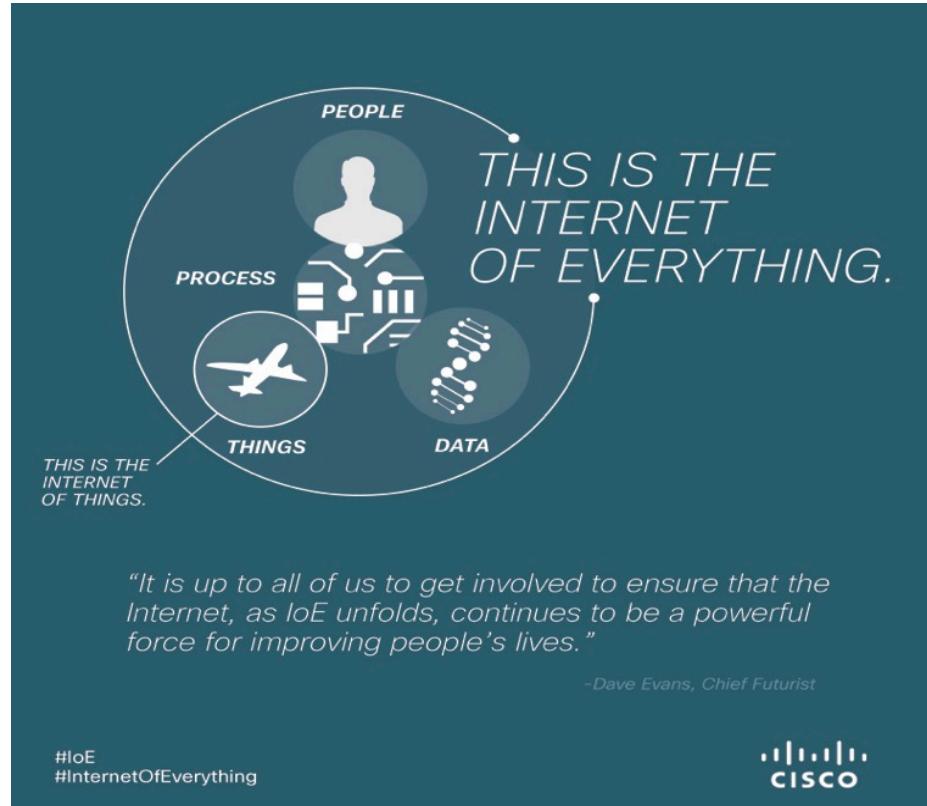


# Internet das Coisas conecta a tudo e a todos → influencia a vida de todos nós



# Qual a RELEVÂNCIA de IOE para a Educação

# OBJETOS INTELIGENTES como Objetos Pedagógicos Inteligentes



# Maior ênfase no Aprender pela Experimentação Vs centro no Professor e no Conteúdo

O uso de objetos inteligentes interconectados visa experiências



# IoE e Aplicação de Sensores como Objetos Pedagógicos

Biologia	Geografia / História	Matemática	Ciências Sociais
Monitorar o MEIO AMBIENTE	Geolocalização em tempo real	Estatísticas	Consciência Social
ESPÉCIES ANIMAIS	Visualizações remotas – virtuais	Modelagem de Dados e Gráficos	Ética Política
SAÚDE humana	Trabalhos em Campo	Processamento de Dados em tempo real	

# Saúde e Consciência Social

## Comportamentos Sociais e Ética de Relacionamento .



<http://wsn.chess.nl/>



using the motion sensors in your smartphone, this app automatically tracks your physical activities (running, walking and cycling) all through the day.



Welcome to Glasgow

You are in: Home | Living | Getting Around | Smarter Choices Smarter Places | Smarter Choices - Active Travel Convenience

Smarter Choices - Active Travel Convenience

Active Travel

Read about the convenience of active travel.

ASCON EAST END

on the move

Active Travel

Using your own power to travel. Active travel doesn't have to stop you on the whole journey; you could walk to a bus stop, use the bus, then walk to your destination. Alternatively you could use park and stride to drive to a convenient carpark near your destination and walk the rest of the way, rather than trying to park outside. We're not suggesting you cycle from home to work, but if you're travelling there's nothing to stop you cycling along the Clyde or skateboard into town as well.

Getting Around

It's often quicker to walk or cycle than drive or use public transport, once you include the time it takes to park, wait for the bus, walk to the station and all the other delays that happen. With walking & cycling you travel from door to door and have much more control over the time it will take for your journeys.

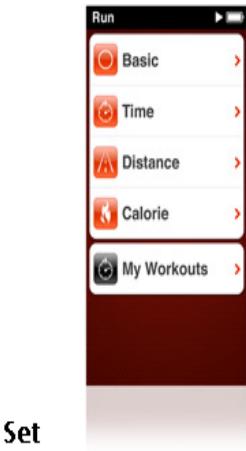
It's much easier to see your neighbours and local area if you don't have to work out what

the route is like before you leave home.

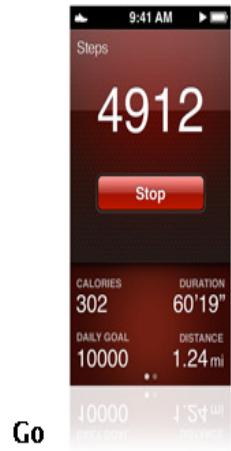
# Aprendendo – Estatística e Gráficos



Ready



Set



Go



<http://www.apple.com/ipod/nike/run.html>

# Geometria e Escala na comunidade



# Saúde Humana - Coleta – Análise – Resultados



The screenshot shows the Ironman 70.3 Muncie 2013 results page. At the top, it says "IRONMAN 70.3 MUNCIE JULY 13TH 2013". Below that are tabs for "ATHLETE TRACKER" and "PHOTOS". The main section displays "2013 Results: Muncie" for "MALE & FEMALE" and "PROS & ALL AGE GROUPS". A search bar shows "BIB: 1269". The results list "OVERTTA SAMPSON" with the following details:

BIB:	1269
Division:	F40-44
State:	Chicago IL
Country:	USA
Profession:	Communications

Overall Rank: 1454

Rank: 84

Swim: 49:57

Bike: 3:32:46

Run: 3:29:02

Overall: 8:04:36

**Swim Details Division Rank: 67**

Split Name	Distance	Split Time	Race Time	Pace	Div. Rank	Overall Rank	Gender Rank
Total	1.2 mi	49:57	49:57	2:35/100m	67	1250	368

**Bike Details Division Rank: 78**

Split Name	Distance	Split Time	Race Time	Pace	Div. Rank	Overall Rank	Gender Rank
28 mi	28 mi	1:47:04	2:44:09	15.69 mi/h			
56 mi	28 mi	1:45:42	4:29:51	15.89 mi/h			
Total	56.0 mi	3:32:46	4:29:51	15.79 mi/h	78	1376	413

**Run Details Division Rank: 84**

Split Name	Distance	Split Time	Race Time	Pace	Div. Rank	Overall Rank	Gender Rank
6.6 mi	6.6 mi	1:39:43	6:15:17	15:13/mi			
13.1 mi	6.6 mi	1:49:19	8:04:36	16:41/mi			
Total	13.1 mi	3:29:02	8:04:36	15:57/mi	84	1454	449

**Transition**

T1: SWIM-TO-BIKE	7:08
T2: BIKE-TO-RUN	5:43

# Ética, Meio Ambiente, Matemática

WIDENOISE



<http://www.widetag.com>



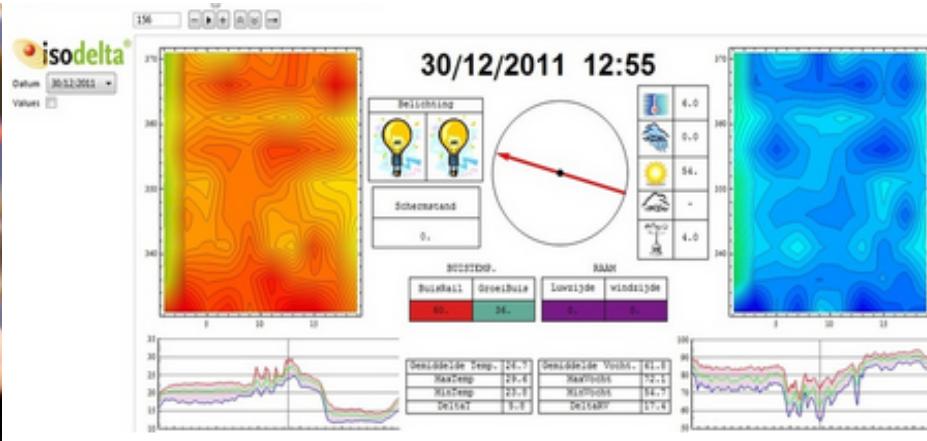
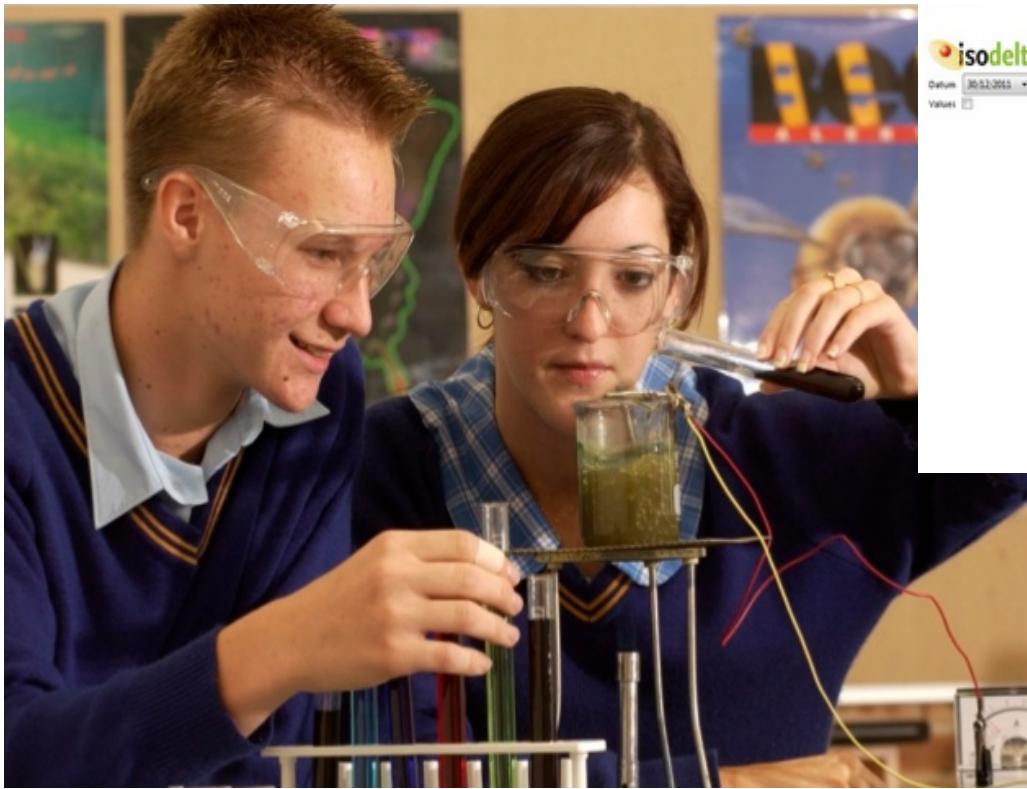
## Que é WideNoise?

Monitora o nível de ruído ao seu redor via smartphone

Mapeia ONLINE o nível de som ao redor e gera gráficos de referência.

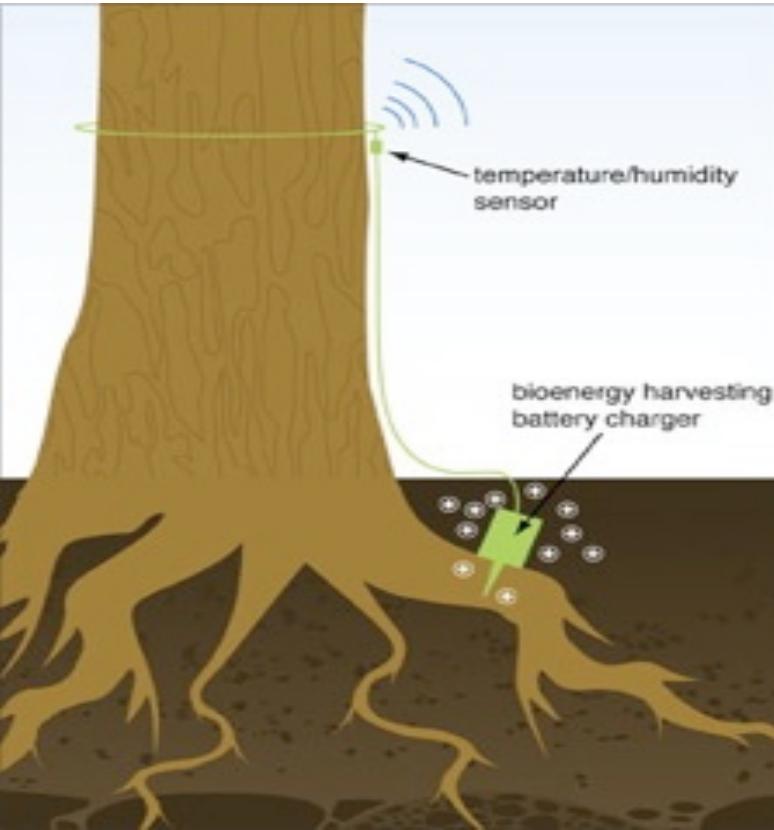


# Biologia e Modelagem de Dados



<http://www.greenformula.com/index.php>

# Biologia e Sustentabilidade



## MIT News

Browse or Search

### Preventing forest fires with tree power

Sensor system runs on electricity generated by trees

Elizabeth A. Thomson, News Office  
September 23, 2008

▼ Press Inquiries

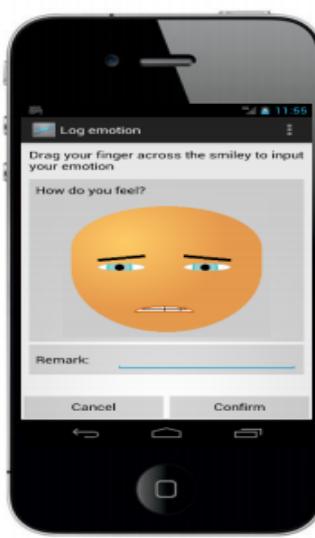
RELA

MIT researchers and colleagues are working to find out whether energy from trees can power a network of sensors to prevent spreading forest fires.

What they learn also could raise the possibility of using trees as silent sentinels along the nation's borders to detect potential threats such as smuggled radioactive materials.

<http://www.greenformula.com/index.php>

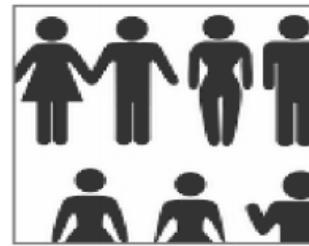
# Comportamentos Sociais e Ética de Relacionamento .



When a patient is awake or asleep



The activity level of a person



The social interaction of the patient



If a patient never leaves the house

<http://www.sense-os.nl/internet-of-things>

Goalie monitors the mood and behaviour of patients with depression-related disorders and helps them set and reach goals towards recovery.

# Controle de Frequênci a e Chamada

## Real Time Localization of persons and assets

Posted 21 Jul 2010 — by Marc Bisscheroux

Category Applications, Buildings, News, Projects, RTLS

Comments 01

A self organizing node network is used to established real time localization of persons and assets in large buildings or even in different buildings.

### Proefpagina: ZoekCollege

12 Werkplekken, nog 8 vrij. Aantal BHV ingelogd: 0 ↓



# *A Internet of School Things*

## aplicada aos processos de ensino e aprendizagem

# Projeto DISTANCE - IoST

The screenshot shows the official website for the DISTANCE project at [www.iotschool.org](http://www.iotschool.org). The header features the DISTANCE logo with a lightbulb icon, followed by navigation links for Home, Schools, Explore, Join, Resources, About, and Blog. Social media icons for Twitter, Facebook, and YouTube are also present. Below the header, there's a large banner image of children in a classroom setting.

## Demonstrating the Internet of School Things - a National Collaborative Experience

The DISTANCE project is a pilot project working with schools across the UK to define how the Internet of (School) Things can enhance learning in science and other subjects, such as technology and geography. Our goals are to get students and teachers measuring and sharing data – using new technology on the emerging Internet of Things – in ways that help make learning fun, link directly to the curriculum, and ultimately inform the design of the next generation of schools. We ask questions such as:

What objects are connecting to the Internet?

What information is being relayed and how?

How can we make our lives and the lives of our community better using this data?



Get Involved

The DISTANCE project is a collaborative consortium and includes the following partners: Birmingham Urban Climate Laboratory, Explorer HQ, Intel, Open University, Science Scope Ltd, Stakeholder Design, UCL Centre for Advanced Spatial Analysis and Xively.

This screenshot shows a section of the website featuring a group of smiling children in a classroom. A text overlay reads: "We're helping the city of Birmingham to predict snow days". The DISTANCE navigation bar is visible at the top.

This screenshot shows a section of the website featuring several test tubes containing different colored liquids and small plants. A text overlay reads: "We're controlling our greenhouse using data from Asia and Africa". The DISTANCE navigation bar is visible at the top.

This screenshot shows a section of the website featuring a green printed circuit board (likely a sensor module) and two blue handheld CO2 measurement devices. A text overlay reads: "We're measuring CO2 levels in classrooms across England". The DISTANCE navigation bar is visible at the top.

