

Cenário IoT no Brasil



*Por Edson Perin, CEO
Editor RFID Journal Brasil*

Edson Perin, CEO da Netpress



- Jornalista com mais de **30 anos de experiência**
- Graduado pela Universidade de São Paulo (**USP**)
- Autor do primeiro livro da série pioneira **TI para Negócios**, sobre Tecnologias para Empresas, com linguagem para os profissionais de negócios
- Apresentou o quadro **TI para Negócios** no **Jornal da Eldorado**, da emissora de mesmo nome, do Grupo O Estado de S. Paulo
- Editor do Blog e da Newsletter semanal **TI para Negócios**
- Editor do **RFID Journal Brasil**
- Duas vezes vencedor do **Prêmio Automação** (2012 e 2014), da GS1 Brasil, Categoria Jornalismo Online
- Atendeu as áreas de Marketing e Comunicação de empresas como Intel, Microsoft e UOL
- Atuou na **Rádio Jovem Pan**, **Rádio e TV Bandeirantes**, **Jornal Valor Econômico**, **Revista InformationWeek**, entre outras empresas jornalísticas

Cenário IoT - Global

Mau uso do termo IoT, como simples *buzzword*

buzzword

...is a word or phrase that becomes very popular for a period of time. Buzzwords often derive from technical terms yet often have much of the original technical meaning removed, being simply used to impress others

Oxford English Dictionary (3rd ed.)

IoT como *buzzword* - Parte 1 de 3

- IoT é um conceito e não uma tecnologia
- IoT nasceu da experiência do Walmart com RFID
- Visão de Kevin Ashton sobre “coisas” conectadas
- IoT como *buzzword* em 2015 e 2016
 - Nada a ver com sua real origem e definição
 - Grandes empresas de TI enxergaram oportunidade para faturar mais
 - Vender sistemas de análises de dados
 - Vender soluções de Big Data
 - Ocultaram a verdadeira IoT



IoT como *buzzword* - Parte 2 de 3

- Resultado do uso de IoT como *buzzword*
 - Usuários (compradores de TI) não sabem o que é
 - Muito menos como traçar uma estratégia para IoT
 - Ninguém falou de obter dados do mundo real automaticamente
 - Sem seres humanos, com inteligência artificial
 - Discurso das grandes empresas ficou em **processar** os dados
 - Não em como **obtê-los** de modo automatizado
 - A RFID, um conjunto de tecnologias de base para IoT
 - Quase não foi mencionada

IoT como *buzzword* - Parte 3 de 3

- Conclusões
 - Computadores são cegos, surdos e “insensíveis”
 - Necessitam de câmeras, tags e sensores
 - Tecnologias RFID que facilitam esta conectividade
 - RFID UHF, Wi-Fi, Bluetooth, GPS...
 - Isto sim é IoT
 - Nova *buzzword*
 - Transformação Digital
 - E o termo IoT vai entrando em desuso
 - Está saindo da moda como *buzzword*!



IoT e RFID Casos de Sucesso no Brasil

Mais de uma década de desenvolvimento

HP Brasil - Fábrica de Impressoras

O começo

- Fábrica de impressoras HP Brasil
 - Pioneira no mundo em IoT
 - 2004: HP testa RFID na fábrica de impressoras
 - Cidade: Sorocaba (SP)
 - Rastreio, Controle e Automação
 - A empresa começou em 2008 o que em 2012 foi nomeado como Industry 4.0
 - 2008: empresa enfrenta novos desafios
 - Como gerenciar uma grande massa de dados gerados por RFID:
 - Hoje chamamos de Big Data



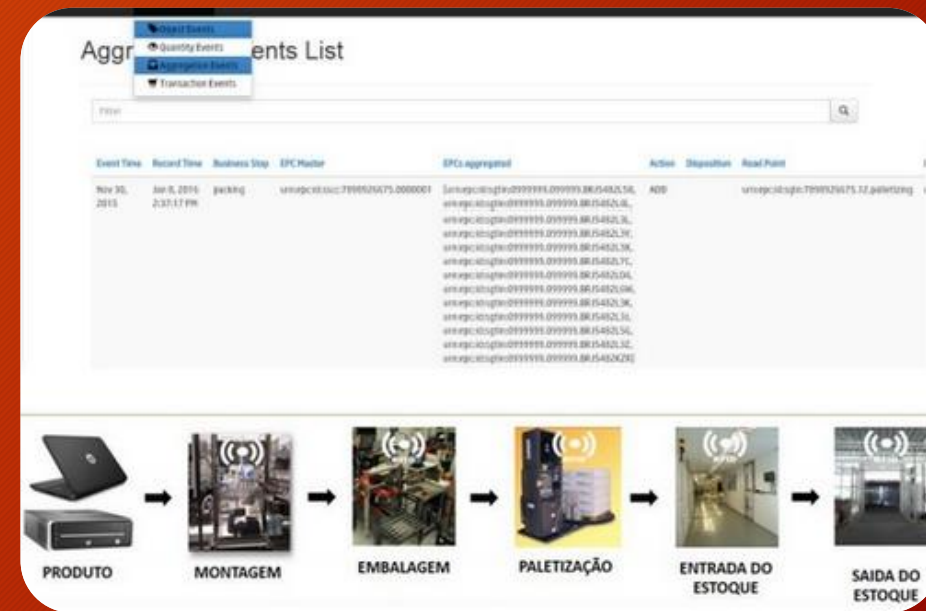
O começo

- HP RFID Center of Excellence
 - Educação e treinamento
 - Pesquisa e desenvolvimento
 - Consultoria para implantação RFID
- 2012: HP Brasil vence o Green IT Award do RFID Journal
 - Tags RFID feitas no Brasil pelo Ceitec
 - Crescimento do Ecossistema de RFID no Brasil
- 2015: lançada plataforma Exceler8 da HP
 - Rastrear peças e produtos na fábrica, Centro de Distribuição e Varejo



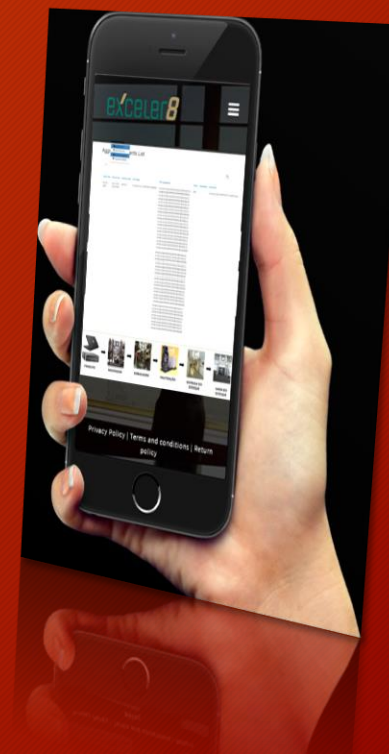
HP Brazil Today

- HP Brazil improved its use of RFID on assembly lines
- Hardware and software
 - Partnership with FIT (Flextronics Institute of Technology)
- The IoT platform or Exceler8 Innovating Industry 4.0
 - Concept called Industry 4.0 or Fourth Industrial Revolution
 - Improve company's manufacturing
 - Streamlines Supply Chain Management
 - Accordance with GS1's EPC RFID standard



HP Brazil Today

- How Exceler8 works
 - Factory receives an order
 - Products are tracked via RFID
- HP benefits
 - Better monitor production
 - Avoid delays in both production and delivery
 - Manufacturing and delivery times control
 - Integrate with suppliers and customers
- New achievement
 - Mobile devices integration



IoT & RFID in Mining

RFID for Mining

- Vale plans to expand implementation of RFID
 - Brazilian and global miner, Vale is one of the World's largest producers of iron ore and nickel
 - Several RFID projects have been implemented in recent years
 - The company uses RFID to:
 - Track 70,000 maintenance materials
 - Tests system to increase workers safety and control training goals
 - Manages stock of more than 1,300 different materials
 - Track tools and parts





RFID for Mining



Carlos Teixeira, from Vale, at RFID Journal LIVE! Brasil 2013



RFID for Mining

- New RFID project
 - Vale aims to improve the control of uniforms (dirty and clean)
 - Simplify pick up and delivery by laundry company
 - 50,000 RFID tags are in test
- Process was manual
- The idea is to
 - Automate processes
 - Gain more agility



Oxford

- Oxford reaches RFID ROI within 12 months
 - The largest ceramic and porcelain maker in Americas
 - 2,500 stock-keeping units (SKUs)
 - Manufactures 6 million units monthly in three plants
 - Products are packed every month into 300,000 boxes
- Solution eliminates errors in product-delivery process
- Some Oxford's customers
 - Gift, decor and retail stores
 - Promotional chinaware
 - Starbucks Coffee



Oxford

- Upon leaving the factory
 - Goods are packed according to customers' orders
 - Standard boxes with RFID tags fit the products
- Oxford Collections have in a single box
 - Shallow dishes
 - Soup bowls
 - Dessert plates
- Implementation by Parson
 - RFID portals have a high level engineering system



Oxford's CIO Marcelo Correa



IoT & RFID in Retail

Among the World's Largest

- Brascol is the largest baby and child wholesale in Brazil
- 2014: invests in efficient inventory control
- Reduced 70 percent the time to check out
 - From 1 hour to 20 minutes for each buyer
 - The benefit turned into customer loyalty



- After trade agreements
 - Suppliers started to deliver products with RFID tags
 - Result: better inventory control and products' visibility

Among the World's Largest

- One of the World's largest RFID cases
 - 70,000 tags used per day
 - 35,000 SKUs with RFID tags
 - *"Maybe just smaller than Marks & Spencer"* - Mark Roberti
 - Workers used to receive 3,000 to 4,000 items daily
 - After RFID: from 15,000 to 20,000 items daily
 - The company reduced the amount of products in its stock by about 35 percent
 - And uses released space to expose more products for sale
- Implemented by iTag



New Jeans

- Levi's Brazil tests RFID use successfully
- Technology tracks inventory and control products in stock and on sale
- Company decided to test the RFID solution at its 78 own stores in the country
 - Primarily because they use the same ERP system
 - Other 62 stores have 12 different ERPs
- The first test occurred on Black Friday 2017
 - Sales went up 55 percent

The Levi's logo is displayed in white text on a red, batwing-shaped background.

New Jeans

- Levi's merchandise sold in Brazil
 - 20 percent are locally produced
 - 80 percent are imported
- Company currently consumes 50,000 RFID tags per month
- Levi's is using RFID to track products
 - Company's distribution center (DC)
 - Shipment to stores and inventory
 - Technology is also being used on check out
 - Also as an anti-theft solution
- Implemented by iTag



Smart Shoe

- Shoe Shop Doubles Sales via RFID
 - Sapati tests innovative experiences for customers
 - Owned by Seta Digital
 - ERP developer company
 - Specialized in Shoe Stores
 - RFID and other technologies improve customer experience
 - Increased 100 percent sales in one year (2016 to 2017)

A customer first touches a shoe to the RFID reader, and it writes the product to the card, which functions as a virtual shopping cart



Smart Shoe

- Consumers enjoy the RFID experience at Sapati Store
- A purchase takes less than a minute to be done
- Factories should send their shoes already with tags
 - Shorten work at point of sales
 - Products can be tracked everywhere
 - RFID can reduce product misplacement
- Customers visit Sapati store
 - Learn about the technology
 - Become interested in solutions like inventory control



Vanderlei Kichel,
SetaDigital's CEO and
the founder of Sapati

IoT & RFID in Health Care

Valinhos Hospital

- Brazilian hospital improves care for ICU patients
- Santa Casa de Valinhos deployed IoT solution
 - 102 active beds
 - 450 surgeries / month
 - 800 hospitalizations / month
 - 10,000 emergency room visits / month
- The IoT project was created to
 - Update inventory
 - Monitor displacements
 - Locate health care devices



Valinhos Hospital

- IoT implementation allows the hospital to
 - Keep certificate of health services quality
 - Continue technology improvements
 - Establish transparent management
 - Meet the annual inventory needs
- Implemented by Taggen RFID Solutions

taggen
SOLUÇÕES IoT



IoT & RFID in Smart Cities

Bilhete Unico (Single Ticket)

- 6 million people use bus, metro and trains in Sao Paulo city every day
 - The largest Brazilian city with 10 million people
 - 95 percent pay their fares with Bilhete Unico
 - Solution based on RFID
 - Allows recharging by Near Field Communication (NFC) smartphones



Bilhete Unico

- How to recharge with NFC
 - First screen tells the user to touch the card on the phone
 - The second displays the balance and offers to purchase credit



Highway Toll

- More than 10 years in operation
 - RFID UHF passive tags
 - Working in six states
 - 500 service points
- 7 million vehicles are using RFID tags in Brazil
 - 10 percent of all Brazilian fleet
 - São Paulo State: 5 million vehicles



Smart Cities

- Public lighting are IoT platform for smart cities
 - Still in studies / Not implemented
 - Target 200 Brazilian cities
- A gateway can manage devices for smart cities
 - Lighting systems ready to enable devices connectivity
 - Lighting 3.0
- Development by CPqD



Michael
Jackson -
Billie Jean



Smart Cities

- Lighting 3.0
 - Environmental Sensing
 - Tracking
 - Control
 - Temperature
 - Humidity
 - Security
 - Machine Learning
 - Predictive Maintenance
 - Daylight Harvesting



Source: Goode

IoT & RFID in Agribusiness

Intelligent Cashew

- Cashew Company Improves Deliveries, Supply Chain
- Solution results:
 - Monitor processes and supply chain
 - 100 percent delivery accuracy
- Cionee exports 95 percent
 - Production: 275 tons monthly
 - Each box weighs 50 pounds (23 kg)
 - RFID UHF tags are placed in 12,000 boxes per month
- Implemented by Votu



Bag of Coffee

- Brazilian Coffee Cooperative Uses RFID to Manage Inventory
- Coopercam placed passive RFID UHF tags on coffee bean bags, enabling to:
 - Identify coffee and producer
 - Locate different kinds of coffee beans in storage
 - Track 65,000 coffee bags
 - Ship the right coffee to the right customer
- Implemented by BrasilSync



IoT & RFID in Innovation

Invisible Car

- Drone reduces inventory time from days to minutes
 - BMW Dealer in Toronto, Canada, uses the solution
 - The parking lot has more than 900 vehicles
 - The challenge is to find cars under the snow
 - The task used to take hours. Now: 10 minutes
 - Drone have readers
 - Cars have beacons BLE (Bluetooth Low Energy)
- Implementation by SmartX

SmartX



Brazilian Hardware

- Synergy develops innovative technology
 - Brazilian RFID and IoT company
 - World-class RFID hardware
 - *Impinj* is the technology partner
- Identix EZR2500 IoT RAIN RFID Gateway
 - It has a low-cost RAIN RFID UHF reader
 - Four ports: expansion for up to 32 RF ports
 - Acts as a gateway to Bluetooth Low Energy (BLE) beacons

Synergy's
CEO
Maurício
Strasburg



Identix's EZR2500
IoT RAIN RFID
Gateway

Últimas notícias

- **Roubo de cargas está com os dias contados**
 - *Com Sistema Brasil-ID operando, o von Braun Labs espera geração de novos serviços baseados na mesma infraestrutura para cobrança de pedágios*
- **Usina São Martinho emprega RFID no agronegócio**
 - *Tecnologia do CPqD permite que a empresa colha frutos dos processos orientados para a IoT*
 - *RFID + rede banda larga móvel privada*
- **Congonhas moderniza segurança e operações**
 - *O aeroporto está usando RFID e RTLS para controlar acesso em rampa e melhorar o monitoramento de ativos e equipes, com custos menores*



Edson Perin - Editor

RFID Journal Brazil

edson.perin@netpress.com.br