Corporate Education Custom Program 2017

Enterprise Digital Transformation

June 13th 2017

Digital Business Technology Academy
http://www.digibta.com/
Marcia Lorando
marcia.lorando@outlook.com


Mobile Computing – Apps & Devices

Agenda

05:00	Welcome & Agenda presentation
	4 four technology waves considered prerequisites - What technologies are "hot" for 2020?
20:00	Corporate Mobile Computing - Devices and Applications
	Origin and Concept of Mobility
	Ubiquitous Computing - Present in our everyday life
	Ubicomp paved the way for Internet of Things and Artificial Intelligence
	A Bit of History: Mobile Chronology
	Events that changed the environment of T.I. in companies - iPhone changed everything
	Nokia - The lost decade / Blackberry agonizes
	Gartner Group - Investments and Worldwide Ranking
20:00	Corporate Mobility - Strategy, Infrastructure and Mobile Applications
	Definition of a Strategy and Implementation of a Competence Center (CoE)
	Industry segments that are leveraging business
	Mobile Applications - Top Platforms
	Gartner Group - Enterprise Mobility Management (EMM) Suites
	Professional Services - Tier 1 (IBM, Deloitte, Accenture) and Tier 2
15:00	Questions & answers

Scope of the Program

Key factors that lead to transformation

- **Target Audience:** undergraduate & post-graduate students
- **Goal:** Provide the students with a practical view through case studies, on the impact that technologies considered 'disruptives' are having on society and on the corporate environment in many industry segments, a reality that almost everyone will go through.
- **Course dynamics**: 10 monthly workshops in 2017, each with a 60-minute duration.

What technologies will be 'hot' in 2020? COMPUTERWORLD

Cloud Computing	Big Data & Analytics	Social Networking	Mobile computing	Internet of things	Artificial Inteligence	3D Printing	Cybersecurity	Blockchain
Abril 11th	May 9th	May 23rd	June 13th	TBD	TBD	TBD	TBD	TBD




The origin of Mobile Computing

Cell phones evolution

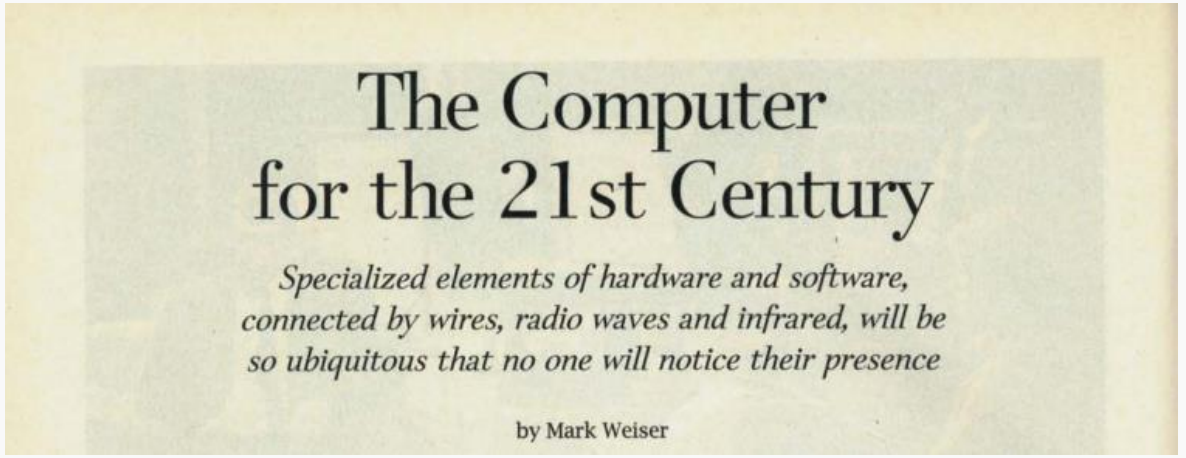
from the 90's until today

Both the size and price of mobile devices are falling down every day.

Today, in any computer store, we can buy a device like an IPhone or IPad, something that 10 years ago was impossible to predict. But not for Mark Weiser.

Ubiquitous computing

In 1991, he wrote an article predicting that in the future computers would be so entwined in our daily lives that they would become indistinguishable, thus creating the concept of ubiquitous computing.



The Computer for the 21st Century

Specialized elements of hardware and software, connected by wires, radio waves and infrared, will be so ubiquitous that no one will notice their presence

by Mark Weiser

https://www.lri.fr/~mbl/Stanford/CS477/papers/Weiser-SciAm.pdf

Ubiquitous computing:

Ubiquitous Computing (or Ubicomp) is a term used to describe the ubiquity of computing in people's daily lives.

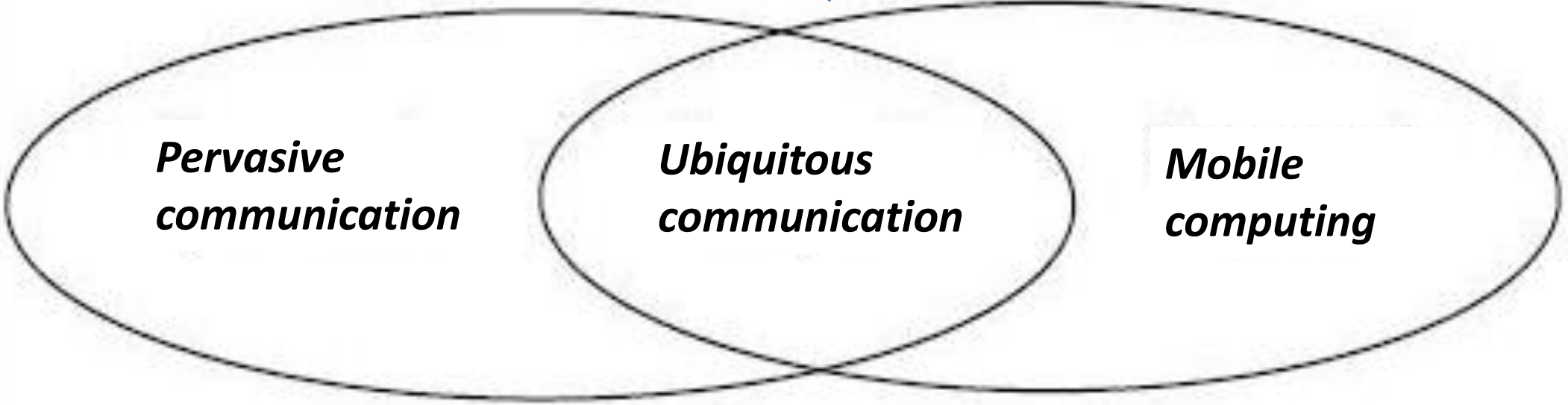
The term was used for the first time by American computer scientist **Mark Weiser** (1952-1999) in 1988 and published in 1991 in his article The Computer for the 21st Century.

Ubiquitous computing

Present in our daily lives

It is the concept that defines computing imperceptibly, that is, the use of computational resources in an embedded form not visible to the user but present, everywhere, however, without being perceived.

It is the ease of using a mobile device such as cell phone or notebook to access the internet, send emails and read the news and even work even while on the move as you are on a bus going from the way home to work.



https://portalsis.wordpress.com/tag/computacao-movel/

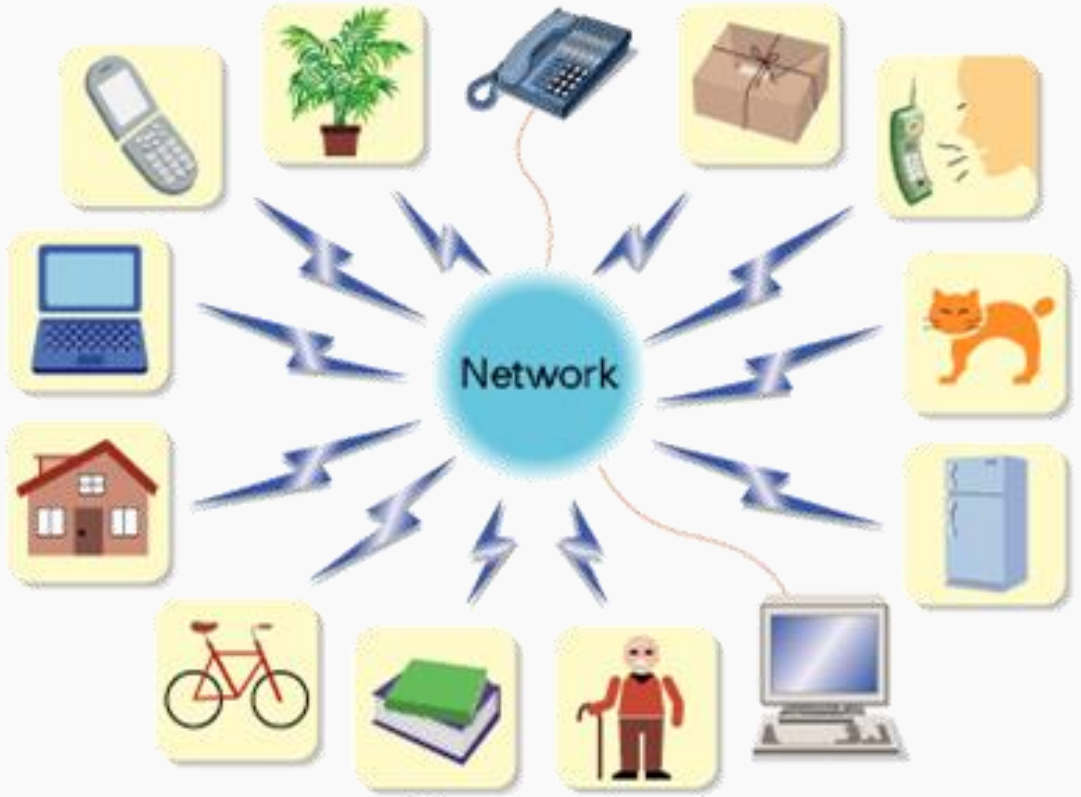
Ubiquitous Computing Paves the Way to the Internet of Things and Artificial Intelligence

Ubiquitous Computing (Ubicomp) and the Internet of the future

Ubicomp integrates computing into the environment
- The idea is not to have "visible" computers as distinct goals

Other terms for ubiquitous computing:
- Pervasive Computing
- Quiet technology
- Things That Think
- Everyware (created by Adam Greenfield)
- Pervasive Internet

Goal:
- Embed computing in the environment and everyday objects
- Allow people to interact with devices that have the ability to process information naturally
- Adapt from the context they are in



Ubiquitous computing will enable diverse wireless applications, including monitoring of pets and houseplants, operation of appliances, keeping track of books and bicycles, and much more.

In the near future: The role of the cell phone tends to widen

"The cell phone is what connects the dots between all these things and will become the remote control that will give life to all this, which tends to strengthen the relationship of people with their smartphones. More than ever, mobile will be consolidated as essential for brand marketing strategies".

Concept of Mobility

- Mobility or Mobile Computing Systems are systems that can be easily moved physically or whose capabilities can be used while being moved - Usually offer features and specific features not found in other systems.

- **Advantages** - with well-designed mobile systems it is possible to:

✓The most trivial is the ability to access data anywhere, anytime;

✓Optimize time, coverage

✓Increase billing

Chronology of Mobile Devices

1973

- Motorola creates the 1st truly mobile and portable telephone - 1st generation analog phone was born.

1983

- Mobile devices with alternative functions besides the simple call execution and created by German Frog Design in and Apple, in the first place, that was not interested in the project.

1990

- The term and the concept of smart phones emerges. The second generation 2G comes with digital technology. The GSM network soon followed in Finland. It improved voice transmission, cheapened the cost and massified the use of mobile phones in the world.

1992

- Apple's launch in the market for the first PDA called Newton Message Pad - arrived with the concept of t screen and 1 MB of total memory - but it was big, heavy and expensive – It didn't stick!

1994

- The first smartphone in history - The IBM Simon personal computer, a personal assistant function, and functions such as calendar, e-mail reception and 1MB memory card

Chronology of Mobile Devices

1996

- US Robotics launched the Palm Pilot 1000 and 5000, devices that had a great acceptance in the M[illegible] and laid the foundations of a whole palms platform that reached 80% of the world market.

1997

- Devices running Windows CE 1.0 such as NEC Mobile Pro 200 and CASIO A-10 appear.

2000

- Launch of Microsoft's PC 2000 PC-based operating system embedded in devices such as HP Journey and the Compaq Ipoq platform that gained market acceptance
- The first smartphone actually came to be known as the Ericsson R380

Chronology of Mobile Devices

2001

- In 2001 appeared in Japan the digital network and high-speed 3G providing better data transmission together with voice and much outdoors. The new mixed smartphones of cell phone and mobile information processors (Palms) with multiple embedded technologies like WIFI, GPS, Bluetooth - today worldwide fever arise - Also appears the Blackberry 957.

2007

- The iPhone actually reached the US market on June 29, 2007, 20 days after the historic announcement by Steve Jobs, then president and founder of Apple. In announcing the iPhone, Jobs stated that from time to time a revolutionary product emerges that changes everything and in fact have changed. The iPhone has changed everything. Turned the phone into a media and marketing device. AT&T

2009

- The 4G network has emerged with a promise of speed and transmission 10X higher than 3G. With 4G the difference between voice and data ends, everything is transmitted over the internet using VOIP concepts and streaming.

https://www.youtube.com/watch?v=taTmpYQ_3jk

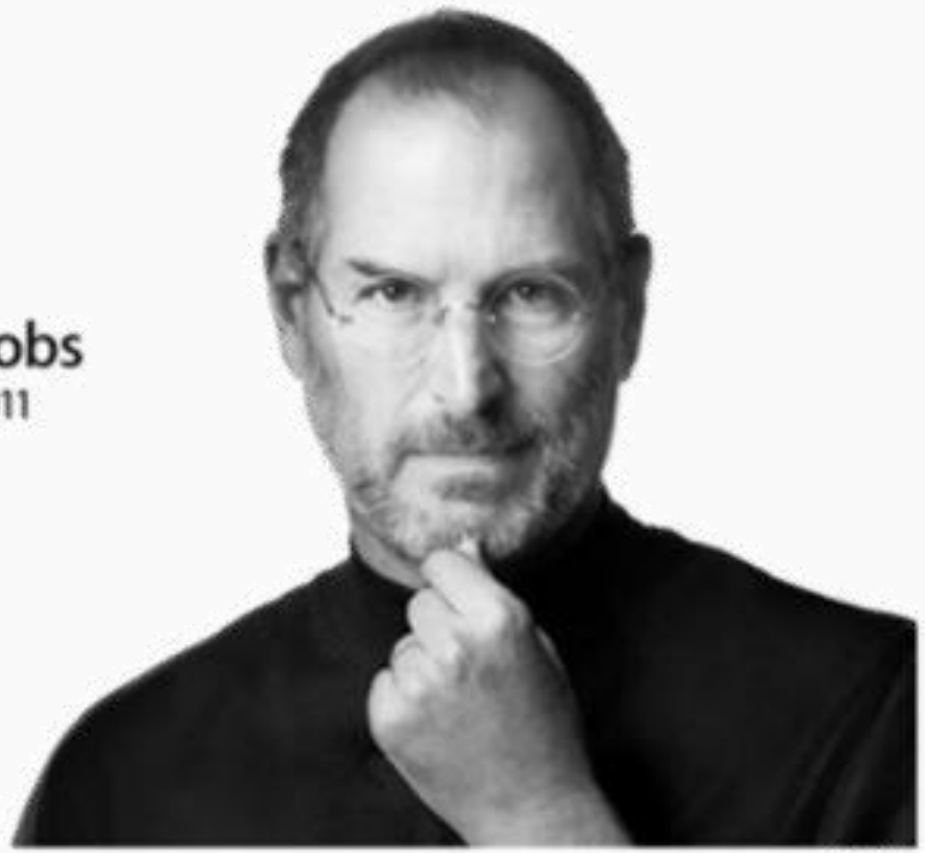
The final quote of the book, when Steve Jobs is staring death in the face

"I like to think that something survives after you die," he said. "It's strange to think that you accumulate all this experience, and maybe a little wisdom, and it just goes away. So I really want to believe that something survives, that maybe your consciousness endures."

"But on the other hand, perhaps it's like an on-off switch. "Click! And you're gone."

"Maybe that's why I never liked to put on-off switches on Apple devices."

Steve Jobs
1955-2011



Apple

IPhone makes ten years and stars in revolution in the mobile platform - The iPhone has changed everything

With mobile growth audiences, publishers have had a hard time monetizing their mobile assets as well as advertisers in designing strategies that appeal to their consumers.

Events that changed the IT environment in enterprises

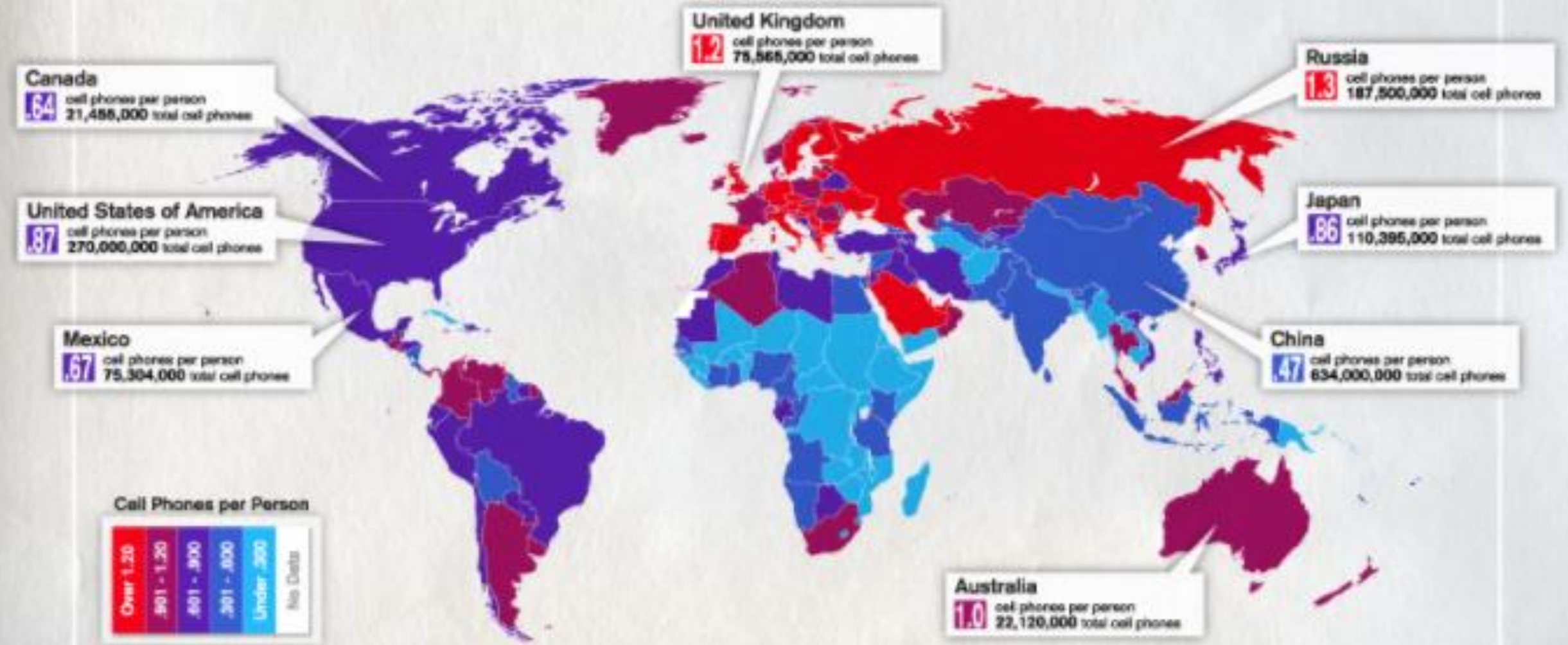
Founded in 1999 in 2004 did (IPO) created a first SaaS application works

2006 - created the public cloud platform

2007 – Iphone release: the Mobile platform is born

THE SHOCKING DEMOGRAPHICS OF CELL PHONE USE

Are you addicted to your cell phone? Statistics show an ever increasing number of people are displaying addictive behaviors when it comes to cell phone use. Today, there are more than 4.6 billion cell phones in use, more than 370 times the number in use in 1990.



MMA
MOBILE MARKETING ASSOCIATION

- ✓ “Mobile will account for more than 30% of total marketing investment in the coming years. As a consumer, you are my best friend“ said Greg Stuart - Global CEO Mobile Marketing Association.

CISCO SYSTEMS

- ✓ Cisco predicts that by 2020 there will be more people in the world with cell phones than with electricity, water, and automobiles. In five years there will be 11.6 billion mobile phones, devices and connections worldwide, including 8.5 billion phones of goods. Of these, 67% are "smart".

eMarketer
DIGITAL INTELLIGENCE

- ✓ Globally, for the first time in 2016, mobile marketing investments outpaced those in non-desktop online media - the segment surpassed $ 100 million in investments, making up a 51 percent share of the global digital advertising market.

iab Internet Advertising Bureau UK

- ✓ Mike Reynolds, director of mobile and video for the Internet Advertising Bureau in London, said that if the iPhone was a privilege of who could pay, now about one in three inhabitants of the United Kingdom.

Nokia and its lost decade as the company fell behind in the smartphone race

THE WALL STREET JOURNAL.

- In the late 1990s, a Nokia predicted the future of mobile devices: spending millions on research and development, even electronics, Nokia and overtaken by Samsung and Apple in the smartphone market.
- But, and a prototype up its sleeve and sell a finished product to consumers are two very different things. The path between the two requires a vision of the future in the management of the company - something that, as explains the WSJ, lacked a lot in Nokia.

- A Nokia has in fact developed the types of devices and consumer devices today. It is not brought to market. In a major strategy error, a company shifted its focus (formerly on smartphones) back to basic cell phones, just as the iPhone put the market upside down.
- 2006 - Under the command of Olli-Pekka Kallasvuo, Nokia made a strategic mistake in responding to the success of simple and expensive cell phones (at the time), as the Motorola Razr V3 shifted the company's focus to dumb phones - "More time was spent struggling What making the design ".

- The result: at least two abandoned operating systems and a giant stock of patents, which are now valued at $ 6 billion and make up almost the entire value of the company, followed by a hasty attempt to get back into the smartphone race.
- 2012 - lost the top spot in mobile phone sales but that's because it started right in front of the others - Nokia's collapse has been visible for years. A Nokia is paying even today for these errors in my last ten years.
- - Microsoft (seeing its operating system threatened by Android (Google) and OS X (Apple) announced a Lumia 950 and Lumia 950 XL in October 2015, initially the fans were very impressed but the device did not understand was not well received by the market

https://www.wsj.com/article_email/SB10001424052702304388004577531002591315494-lMyQjAxMTAyMDEwODExNDgyWj.html

Former smartphone leader BlackBerry agonizes

It is a ruthless law of modern companies: to adapt or die

The New York Times

- 1999 - BlackBerry had 51% of the smartphone market in North America, according to Gartner survey
- August 2013 - owned 3.4% of the market, the Canadian company, the pre-iPhone giant that shrank dramatically and saw its market share drop and advice announced that it was exploring "strategic options" - business jargon for Look for a savior in an attempt to "adapt and fast - or die even faster."

- The BlackBerry is often cited by other previously powerful technology companies, such as Nokia and Dell, who are skating and seem to have a hard way to grow again, if at all.
- "Buy Blackberry is necrophilia" - Apple's second executive, yet Microsoft evaluated acquisition but gave up after the failure of Lumia.
- Small Chinese companies coveted the brand and part of its technology, but the government of Canada, where the BlackBerry is based, vehemently implied that such a purchase would be vetoed by national security concerns.

- The BlackBerry has already made major cost cuts and reduced manpower.
- Regardless of the merits or defects of their products, they must compete with options from some of the largest and most profitable corporations in the world, such as Apple, Google, Microsoft, and Samsung.
- "We do not anticipate any scenario where the value of the company will be significantly higher," Tim Long, an analyst at BMO Capital Markets, a unit of Bank of Montreal, wrote in a statement to investors.
- **The BlackBerry's abrupt decline exemplifies how consumers and investors demand near-instantaneous changes nowadays, especially in the case of technology companies.**

http://tecnologia.ig.com.br/2013-08-31/antiga-lider-em-smartphones-blackberry-agoniza.html

Current Ranking

Ranking of Mobile Devices Smartphones

Vendor	4Q16Units	4Q16 Market Share (%)	4Q15 Units	4Q15 Market Share (%)
Apple	77,038.9	17.9	71,525.9	17.7
Samsung	76,782.6	17.8	83,437.7	20.7
Huawei	40,803.7	9.5	32,116.5	8.0
Oppo	26,704.7	6.2	12,961.5	3.2
BBK Communication Equipment	24,288.2	5.6	11,359.4	2.8
Others	185,921.1	43.1	191,708.4	47.6
Total	**431,539.3**	**100.0**	**403,109.4**	**100.0**

Ranking of operating systems

Operating System	4Q16 Units	4Q16 Market Share (%)	4Q15 Units	4Q15 Market Share (%)
Android	352,669.9	81.7	325,394.4	80.7
iOS	77,038.9	17.9	71,525.9	17.7
Windows	1,092.2	0.3	4,395.0	1.1
BlackBerry	207.9	0.0	906.9	0.2
Other OS	530.4	0.1	887.3	0.2
Total	**431,539.3**	**100.0**	**403,109.4**	**100.0**

Priority areas for investments

Priority areas for investments

And because of this evolution ...

Companies had to react, define and execute a strategy.

The global business mobility market will reach $ 218 billion by 2018.

What is Corporate Mobility?

It is a growing trend of more employees working out of the office and using mobile devices and cloud services to access corporate data and information to perform business tasks.

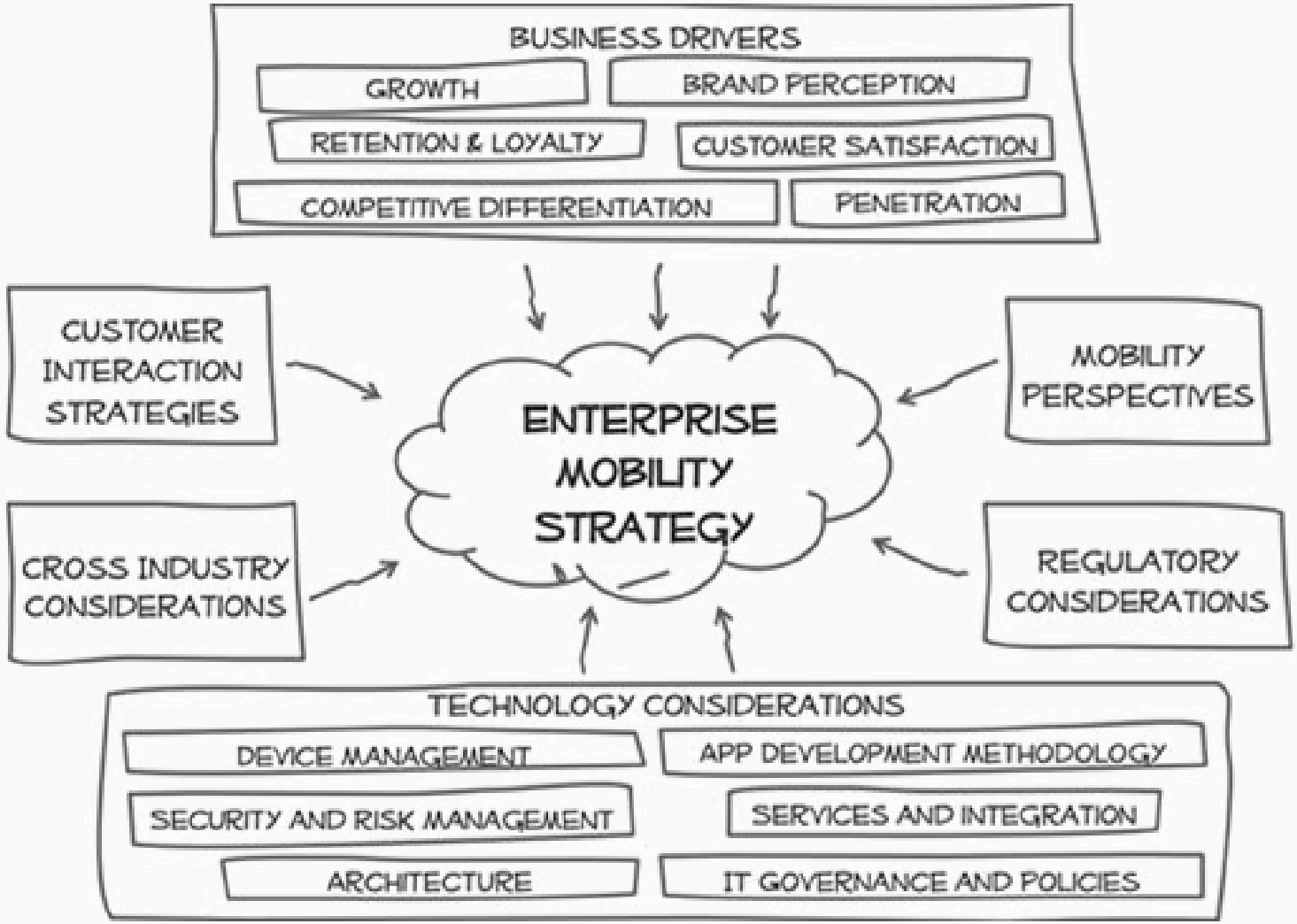
With the rise of smartphones and tablets a few years ago, the workforce began moving to mobility.

Mobile applications and social media, especially those related to cloud computing and the provision of mobile collaboration capabilities, have also contributed to the emergence of enterprise mobility.

https://www.clicksoftware.com/blog/what-is-enterprise-mobility-an-enterprise-mobility-definition/

Then companies should…

1. Define a strategy

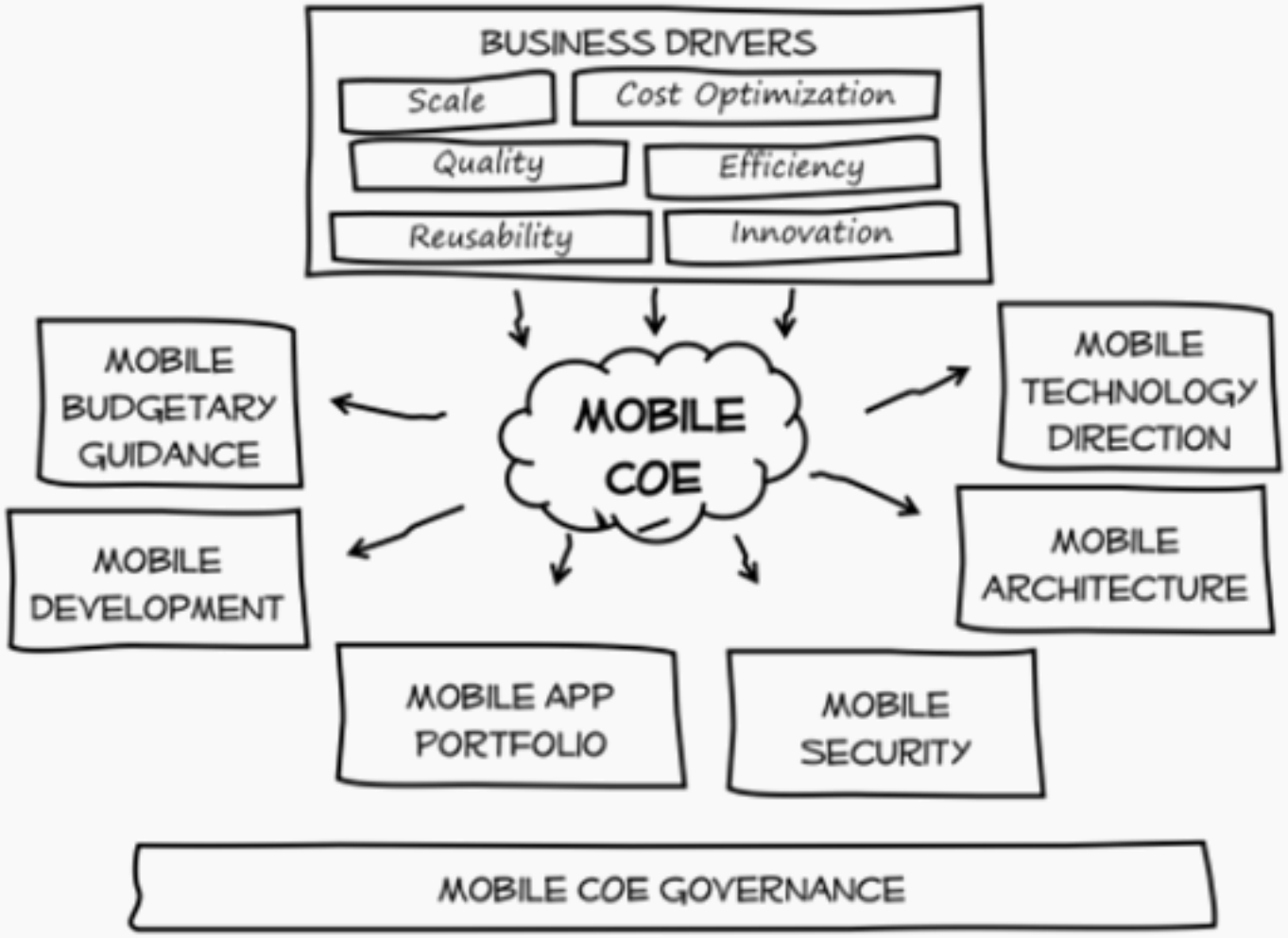


1.2. Create new business oportunities

1.3. Improve the interation with the customers

1.4. Adopt mobility in exisiting processes

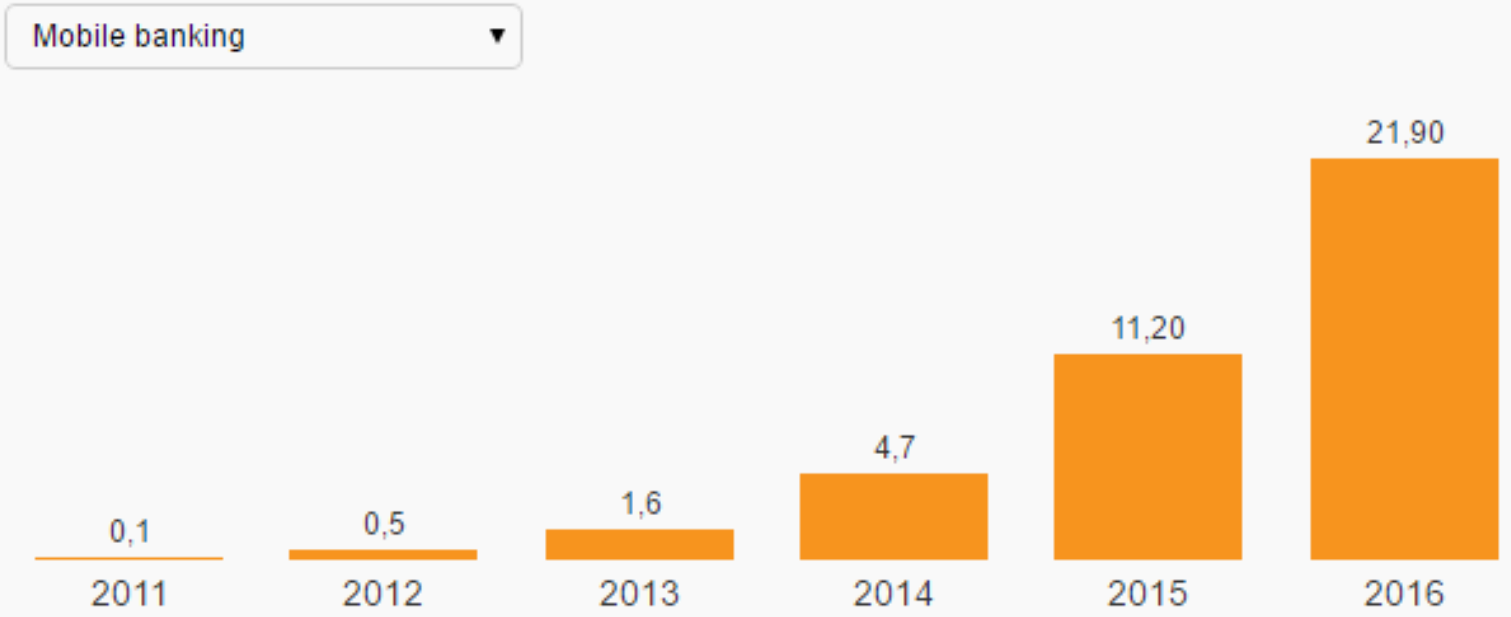
2. Establish a center of excellence




Telecom
Utilities
Transport
Public Safety
Real Estate
Mobile Financial Services
Other Industries
Service & Information Management
Asset & Device Management
Connectivity Management
ICT Infrastructure Management

MOBILE ON THE RISE

Total of transitions, in billions



Mobile devices lead banking transactions in 2016

Source: Pesquisa de Tecnologia Bancária 2017 da Febraban

http://www.ciab.org.br/

http://www1.folha.uol.com.br/mercado/2017/05/1882784-transacoes-bancarias-por-mobile-superam-outros-meios-diz-febraban.shtml

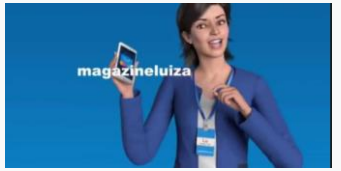
Mobile sales grow 70% in Brazil

83% of the operations is carried out by smartphone

1

natue

2



Carrefour ONLINE

3

dafiti
sua smartfashion

http://www.criteo.com/br/news/press-releases/2016/09/vendas-mobile-crescem-70-no-brasil-aponta-criteo/

Mobile Apps

The mobile application is the mobility software component and what else makes it flexible and useful. It is one of the components from which most of the innovations and uses differ.

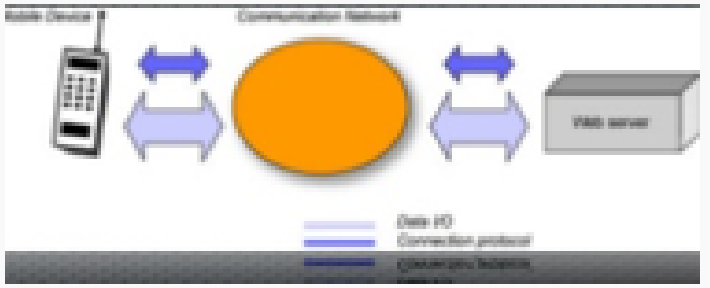
Usage Examples

- Data and information queries either online or offline
- Sales processes (sales team automation)
- Contagion processes / inventory in general
- Service Order Processes in Field
- Information management, contacts, ERPs, CRMs
- Entertainment, leisure, games

Top Platforms

Mobile Apps & Internet

- One of the forms of communication that can be used by mobile applications is through the Internet.
- Uses means of wireless connections like WIFI, 3G, GPRS, Edge.
- Request and send information to web services, IMAP email, RSS feeds, remote APIs in order to seek integration with various online systems.
- All as platforms provide API for communication with protocols available on the Internet.
- Most common integrations:
- Social Networks (Twitter, FB, etc.)
- RSS feeds and blogs
- Online maps
- Meteorology



Mobile Apps stores

In July 2008 Apple's first App Store mobile app store emerged as an extension to the existing iTunes Store that sold music and movies, started selling apps initially for iPhone and then iPad

After the Windows Marketplace appeared

Android Market (Today's Play Store) both following the same pattern as the first

Conclusion

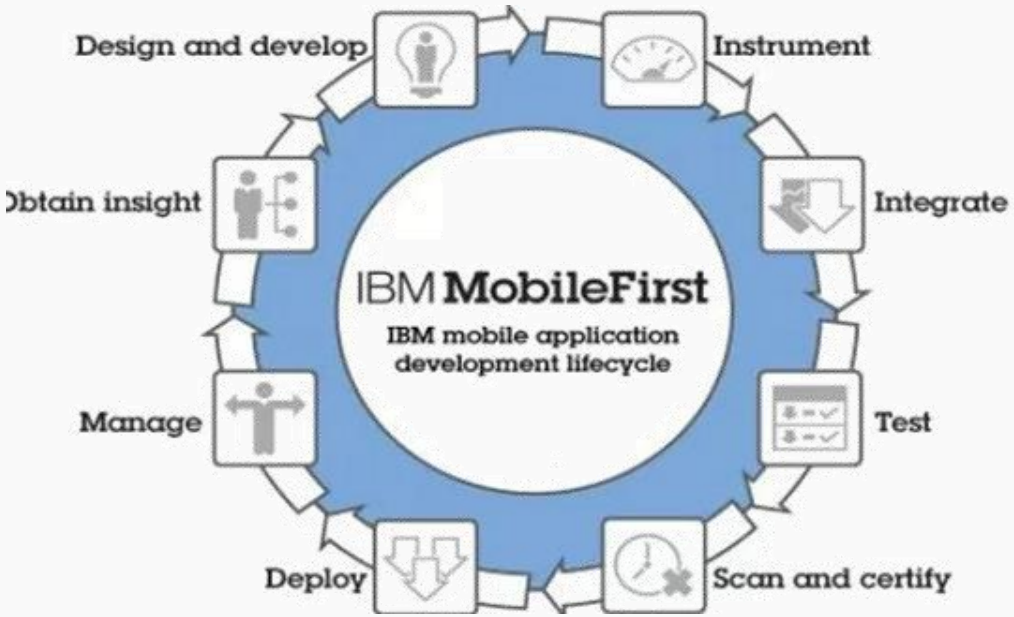
1. Mobile devices and applications are the new Web.

2. The mobile market is overheated.

3. Traditional companies need to adapt to this market so as not to lose the innovation trolley.

4. It is not a matter of option to enter the mobile market, but of necessity and survival.

5. Mobile devices will become more and more accessible to the population.



https://www.ibm.com/mobilefirst/br/pt/mobile-case-studies/

Magic Quadrant for Enterprise Mobility Management (EMM) Suites

1) What is it? Enterprise mobility management is a set of systems designed to prevent unauthorized access to enterprise applications and / or corporate data on mobile devices.

2) What is it for? It is the set of people, processes and technology focused on the management of mobile devices, wireless networks and other mobile computing services in a business context.

3) As more workers acquired smartphone and tablet computing devices, and sought support to use those devices in the workplace, EMM became increasingly significant.

Source: Gartner (June 2016)

https://cdn2.hubspot.net/hubfs/478588/Gartner_MEM_2016.pdf?t=1472171913033

References

- https://www.tomasvasquez.com.br/blog/tecnologia/tecnologia-o-que-e-computacao-pervasiva
- https://portalsis.wordpress.com/tag/computacao-movel/
- https://www.gartner.com/doc/1985016/enterprise-mobility-impact-it
- http://www.facom.ufu.br/~bacala/ANDROID/1-Android.pdf
- https://www.linkedin.com/jobs/search?f_C=2681277&locationType=
- https://pt.slideshare.net/cetorres/palestra-mobilidade-computao-mvel-dispositivos-e-aplicativos-2013

Questions & Answers

Thank

You