

CRM

Customer Relationship Management

Mestrado em Marketing

Aula 8

Paulo Almeida Gonçalves (pagoncalves@iseg.ulisboa.pt)

Cristiane Drebes Pedron (cdpedron@iseg.ulisboa.pt)



LISBON
SCHOOL OF
ECONOMICS &
MANAGEMENT
UNIVERSIDADE DE LISBOA



Cronograma

Aula	Dia	Agenda	Artigo	Caso
1	20-Fev	Conceitos introdutórios.		
2	06-Mar	Estratégia. Valor. Integração multicanal. Fidelização.	1	1
3	13-Mar	Gestão de informação. Tecnologias.	2	2
4	20-Mar	Tecnologias. Implementação. ERP.	3	3
5	27-Mar	Apresentação de software.		
6	03-Abr	Apresentação de software.		
7	24-Abr	Web 2.0. CRM Social. Customer Experience.	4	4
8	08-Mai	Analytics. Big Data. CRM para PMEs.	5	5
9	15-Mai	Apresentação de trabalhos.	6	
10	22-Mai	Apresentação de trabalhos.	7	

Artigos acadêmicos

#	Artigo
1	Chen, I. J., & Popovich, K. (2003). Understanding customer relationship management (CRM) People, process and technology. <i>Business process management journal</i> , 9(5), 672-688.
2	Wahlberg, O., Strandberg, C., & Sandberg, K. W. (2009). Trends, Topics and Under-Researched Areas in CRM Research-A Literature Review. <i>International Journal of Public Information Systems</i> , 5(3).
3	Frow, P., Payne, A., Wilkinson, I. F., & Young, L. (2011). Customer management and CRM: addressing the dark side. <i>Journal of Services Marketing</i> , 25(2), 79-89.
4	Nguyen, B., & Mutum, D. S. (2012). A review of customer relationship management: successes, advances, pitfalls and futures. <i>Business Process Management Journal</i> , 18(3), 400-419.
5	Yawised, K., Marshall, P., & Stockdale, R. (2013). Social CRM: A Review of the Academic and Practitioner Literatures and Research Agendas. In Malaysian Conference on Information Systems (pp. 101-107).
6	Rosman, R., & Stuhura, K. (2013). The implications of social media on customer relationship management and the hospitality industry. <i>Journal of Management Policy and Practice</i> , 14(3), 18.
7	Malthouse, E. C., Haenlein, M., Skiera, B., Wege, E., & Zhang, M. (2013). Managing customer relationships in the social media era: Introducing the social CRM house. <i>Journal of Interactive Marketing</i> , 27(4), 270-280.

Agenda

- **Customer experience**
- Social media
- Mobile
- Analytics
- Big Data
- IoT

Experiência do consumidor

- **A experiência do consumidor engloba todos os aspectos da oferta de uma empresa;**
- **É a resposta interna e subjectiva do consumidor face a qualquer contacto directo ou indirecto com uma empresa:**
 - O contacto directo geralmente ocorre no decurso de uma compra, utilização, ou serviço e é normalmente iniciado pelo cliente;
 - Contato indirecto na maioria das vezes envolve encontros não planeados com representações de uma empresa, serviço ou marca e assume a forma de word of mouth ou críticas, publicidade, notícias, revistas, etc.
- **A satisfação do consumidor é, essencialmente, o culminar de uma série de experiências do cliente ou o resultado líquido das boas experiências menos as más.** (Meyer and Schwager, 2007)
- **O comportamento do consumidor, que foi baseado na aprendizagem através da experiência, levando a uma resposta previsível é desafiado pela noção de experiência como um fenómeno essencialmente hedonista.** (Palmer, 2010)

Experiência do consumidor

- Devido ao poder dos consumidores, quando existe **insatisfação do cliente**, a sua **disseminação é cada vez mais perigosa**;
- Embora as empresas saibam muito sobre os hábitos de compra dos clientes, os seus rendimentos e outras características utilizadas para classificá-los, elas **sabem pouco sobre os seus pensamentos, emoções e sobre os estados de espírito** que as interacções dos clientes com os seus produtos, serviços e marcas podem induzir;
- A não ser que as empresas conheçam essas experiências subjectivas e o papel que cada função desempenha na sua modelação, a **satisfação do cliente é mais uma frase do que um objectivo atingível**.

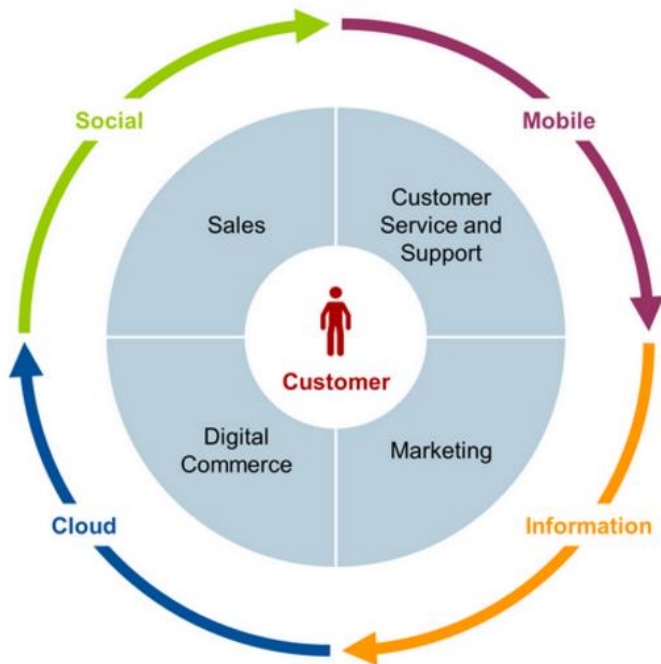
Agenda

- Customer experience
- **Social media**
- Mobile
- Analytics
- Big Data
- IoT

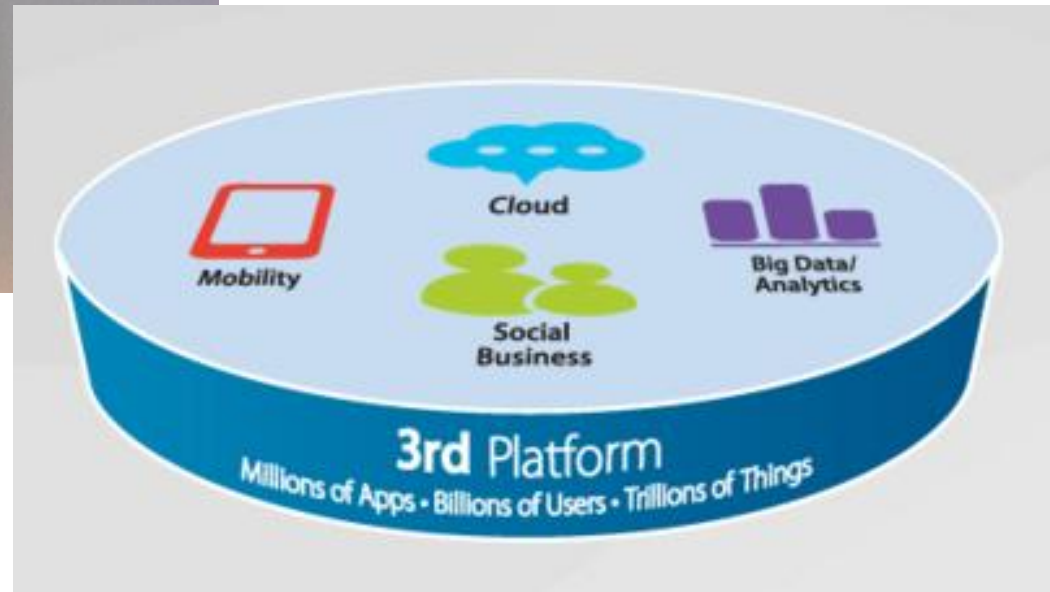
Technology Priorities for CIOs in 2016

- 1 BI/Analytics
- 2 Cloud
- 3 Mobile
- 4 Digitization/Digital Marketing
- 5 Infrastructure & Data Centre
- 6 ERP
- 7 Security
- 8 Industry Specific Applications
- 9 CRM
- 10 Networking/Voice/Data Communications

TOP
10



SOURCE: GARTNER (MARCH 2014)



Source: IDC

Participação das empresas em iniciativas de social media

- Existe uma **falta de compreensão** sobre o que é social media e as diversas formas que pode tomar (Kaplan & Haenlein, 2010)
- Muitas **empresas ignoram, ou gerem mal**, as oportunidades e ameaças apresentadas pelos seus consumidores mais criativos (Berthon et al., 2007)
- Embora seja claro que - para melhor ou para pior - social media é um meio muito poderoso, **muitos executivos são relutantes ou incapazes de desenvolver estratégias** e de alocar recursos para envolver efetivamente as suas empresas (Kietzmann et al., 2011)

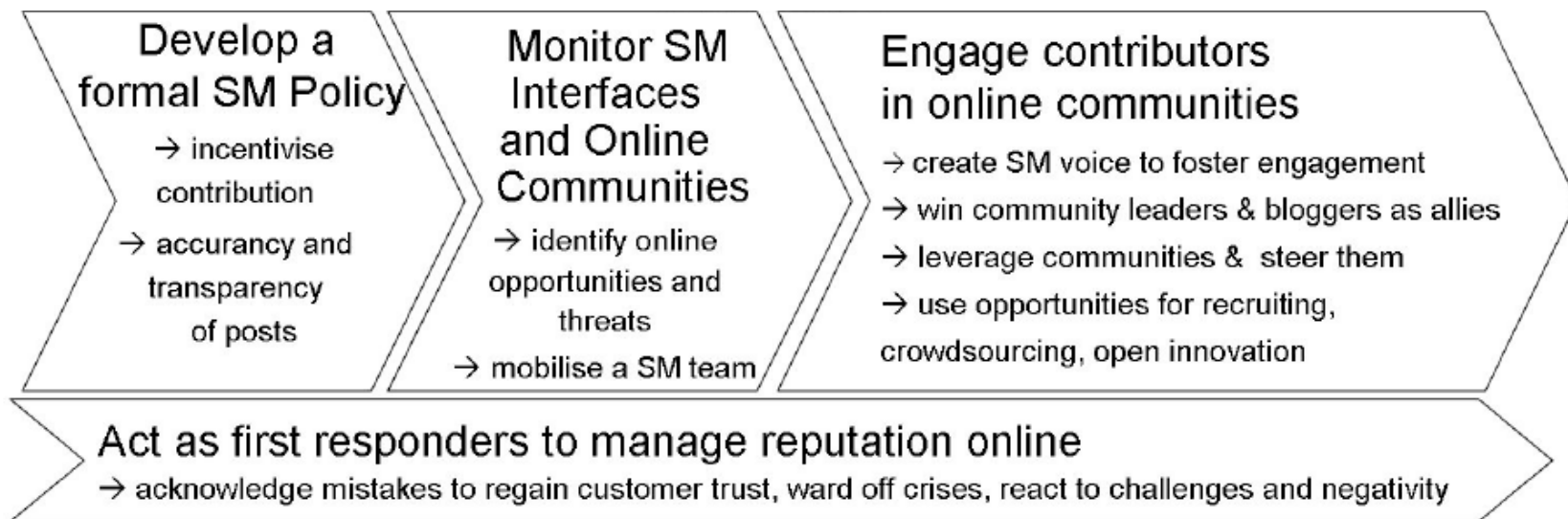
Customer engagement em social media

- **Engagement** é uma qualidade da experiência do utilizador com a tecnologia que se caracteriza por desafio, estética e apelo sensorial, feedback, novidade, interactividade, percepção e controle de tempo, consciência, motivação, interesse e afecto. (O'Brien and Toms, 2008)
- **Engaging em social media** ajuda a fortalecer a experiência de marca que irá apoiar a construção da marca;
- Social media ajuda a **construir uma boa reputação** para uma organização;
- Através de social media, a empresa pode **reforçar a marca** duma forma continuada;
- O social media funciona como uma **poderosa forma de comunicar o valor e os atributos da marca**, pois facilita formas de comunicação abertas.

Estratégia de implementação de social media

Equipa dedicada de Social Media

As empresas precisam de uma **equipa dedicada** de social media, que deve desenvolver **políticas e estratégias** para a gestão das comunidades online, tanto na defesa contra ameaças, como para encontrar formas construtivas para fomentar o engagement.



(Kane et al., 2009)

Social Media Policies and Guidelines

<http://socialmediagovernance.com/policies.php>

Agenda

- Customer experience
- Social media
- **Mobile**
- Analytics
- Big Data
- IoT

Mobile market key drivers

- Ubiquity
- Reachability
- Security
- Convenience
- Localization of service and applications
- Instant Internet connectivity from a mobile phone
- Personalization

(Ranjan and Bhatnagar, 2009)

The **mobile** medium performs essentially the **same function as any other channel** within CRM;
...**communication**, either one-way or interactive, which is **related to sales, marketing, and customer service** activities conducted through the **mobile** medium for the purpose of **building and maintaining customer relationships** between a company and its customer(s).

(Sinisalo et al., 2007)

Initiatives

- Advertising through SMS
- Promocional campaigns through SMS
- Offer dependent on the locations (via LBS)
- Sales force mobile tools
- Loyalty card in the mobile phone
- QR code (*Quick Response Code*) use
- Mobile apps
- Push notifications
- Georeferencing
- iBeacons
- ...

“Mobile is the perfect device for Facebook for three reasons. It allows us to **reach more people**. We have **more engagements** from the people who we reach. And I think we’ll also be able to **make more money** for each minute people spend with us on their mobile devices.”



—Mark Zuckerberg, speaking during Facebook’s Q4 2012 earnings call

www.eMarketer.com

60% of worldwide active users access the service via mobile. In the UK, 80% do.

“When you look at the behavior of mobile users on Twitter, they are **double digit more likely to re-tweet, double digit more likely to reply**” compared to non-mobile users.



—Joel Lunenfeld, Twitter’s vice president of global brand strategy

www.eMarketer.com

Mobile Marketing is key to Coca Cola’s expansion plans

Coke got together with Google’s adMob agency and created apps for both Android and IOS which really did enable the user to buy a bottle of coke for a stranger half way around the world;

http://www.youtube.com/watch?v=45Z-GevoYB8&feature=player_embedded

http://www.gomonews.com/mobile-marketing-is-key-to-coca-colas-expansion-plans/?utm_source=feedburner&utm_medium=email&utm_campaign=Feed%3A+GomoNews+%28GoMo+News%29

Mercedes-Benz coloca iPhone sobre rodas



14 março 2012



A Mercedes-Benz decidiu ser pioneira e apostar no desenvolvimento de projetos que permitissem ligar os smartphones ao sistema de informação e entretenimento dos automóveis. O conceito de experiência do utilizador do novo Classe A é o primeiro a chegar ao mercado com o sistema do iPhone da Apple integrado.

<http://www.fibra.pt/conteudos/4723-mercedes-benz-coloca-iphone-sobre-rodas.html>

The Multi-Screen Marketer

- As devices get **smaller and more powerful**, our culture is shifting toward **instant communication, immediate information gratification** and **multi-tasking**;
- **Consumers are viewing multiple streams of content simultaneously** (TV and smartphone), across a plethora of devices, and brands are learning to chase them across **tablets, smartphones, laptops, and televisions** with tremendous potential for engagement and sales.

Sky Go “TV anywhere” model

- Sky’s **second screen app** allows their customers to consume Sky content on a range of **connected devices away from the main screen in the home, or on the move outside of the home**, also for non-Sky customers;
- The personal nature of the **second screen experience**, be it on smartphone or tablet, where the **consumer is signed-in** to the service, **allows for advertising to be targeted to the individual**, rather than at the household level;
- This should result in **more effective advertising** as consumers receive adverts they feel are relevant to them, which should lead to **better advertising rates for the broadcaster**.

Mobile is changing our lives



Mobile phone lane for pedestrians in Chongqing, China



Agenda

- Customer experience
- Social media
- Mobile
- **Analytics**
- Big Data
- IoT

“If you can’t measure it, you can’t manage it”

Peter Drucker

Métricas de CRM

Marketing metrics

- Number of campaigns
- New customer retention rates
- Number of responses by campaign
- Number of purchases by campaign
- Revenue generated by campaign
- Cost per interaction by campaign
- Number of new customers acquired by campaign
- Customer retention rate
- Number of new leads by product
- Number of customer referrals

Sales metrics

- Number of prospects
- Number of new customers
- Number of retained customers
- Number of open opportunities
- Close rate
- Renewal rate
- Number of sales calls
- Number of sales call per opportunity
- Amount of new revenue
- Amount of recurring revenue
- Time-to-close by channel
- Margin
- Sales stage duration
- Sales cycle duration
- Number of sales calls made
- Number of proposals given
- Competitive knockouts

Service metrics

- Cases closed same day
- Number of cases handled by agent
- Number of service calls
- Average number of service requests by type
- Average time-to-resolution
- Average number of service calls per day
- Percentage compliance with service-level agreement (SLA)
- Percentage of service renewals
- Customer satisfaction level
- Complaint time-to-resolution
- Propensity for customer defection

Source: October 1, 2007, "The Right CRM Metrics For Your Organization" report

Source: Forrester Research, Inc.

Social media analytics

- Social media analytics refere-se ao **desenvolvimento e avaliação de ferramentas e estruturas** para **colectar, monitorizar, analisar, resumir e visualizar dados de social media**
- A investigação em social media analytics serve diferentes objectivos:
 - Facilitar conversas e interacção entre comunidades online
 - Extrair padrões significativos e a inteligência associada
- Análise de um conjunto enriquecido de dados ou metadados:
 - Tags (anotações ou labels com texto livre) /opiniões subjectivas, avaliações e comentários / classificações /perfis de utilizador
- Os dados de social media são fluxos **dinâmicos**, com o seu volume a aumentar rapidamente e o seu tratamento coloca desafios significativos

Métricas de monitorização

Metric	Description
Conversation buzz	The amount of discussion around certain topics, generally determined by the number of responses to blog posts or online discussions. A widely read news site may post a story, but if there are no comments and no readers discussing the topic, then it shows little consumer interest.
Conversation value	The revenue contribution of a conversation about a particular product or brand. Proposed by Chat Threads, this metric comes from understanding how conversations spread through different channels and the incremental value each conversation adds to the brand's bottom line.
Conversation volume	The number of social media entities (blog posts, forum discussions, tweets, etc.) discussing a topic. Volume is a stronger metric when measured over time — marketers use conversation volume to set baselines for future campaigns.
Demographic metrics	The collection of metrics making up the background details of online consumers. Listening platforms can collect data on consumer location, gender, and age. Marketers use demographic data to determine whether their campaigns reach targeted consumers.
Level of influence	The authority of an online consumer, measured by his or her overall reach online. A consumer with a highly read blog and thousands of Twitter followers is assigned a high influence score, while a commenter on a small forum has low influence.

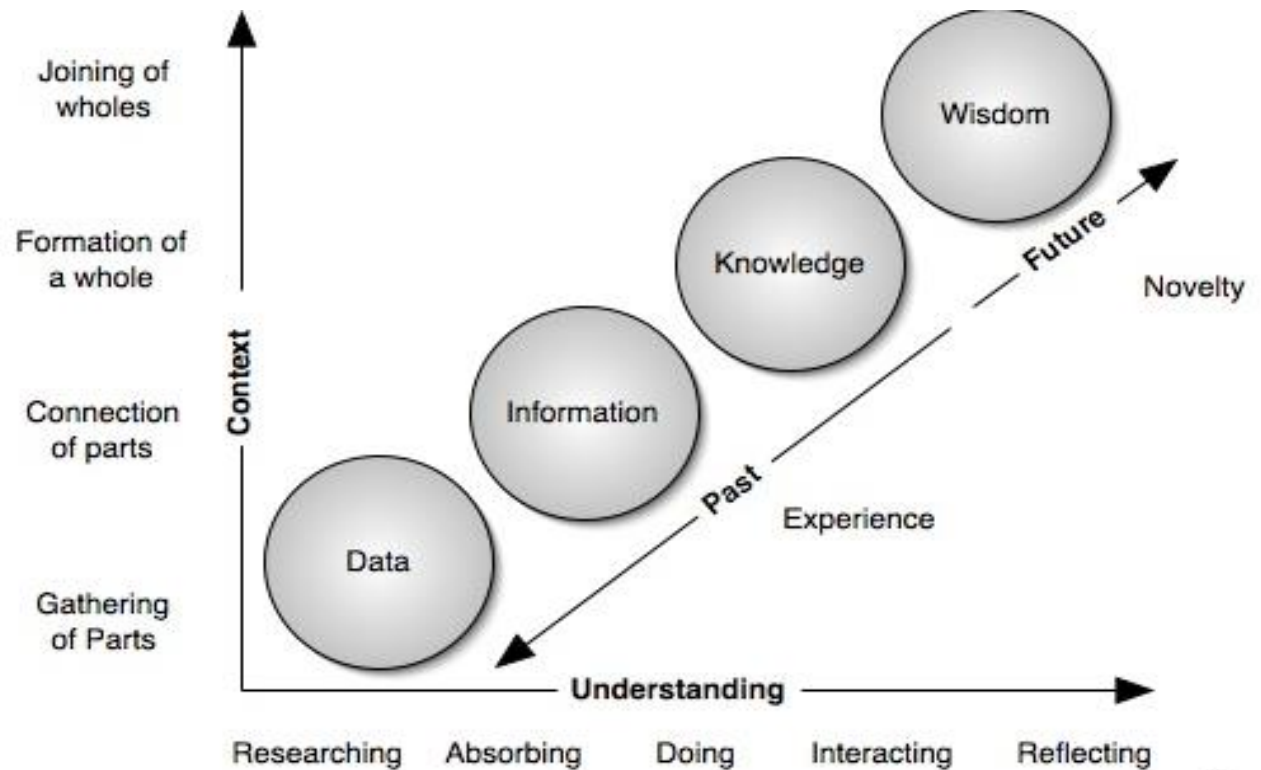
Métricas de monitorização

Metric	Description
Message reach	The number of eventual impressions of an online discussion. Measured by the number of different sources covering a topic and each source's potential page views. Many discussions start small, but once picked up by a larger source, will reach a large number of consumers.
Sentiment type	The positive or negative attitudes consumers express, scored positive, negative, or neutral. Although many online brand mentions are neutral, containing no sentiment, listening platforms track adjectives around keywords to determine consumers' tonality about a topic.
Share of voice	The ratio of discussion volume between multiple brands — often represented as a percentage pie chart. Many marketers track their brands against competitors' to determine which company has a larger share of voice.
Topic frequency	The most common themes for consumer discussion around a brand. Marketers use topic frequency data to collect insight into how consumers view their brands and how they discuss them online.
Virality	The amount and speed at which a discussion spreads, measured by the number of different entries around the same topic within a certain time period. Around a highly viral event, such as the Motrin Moms saga, hundreds of bloggers write posts in the following days.

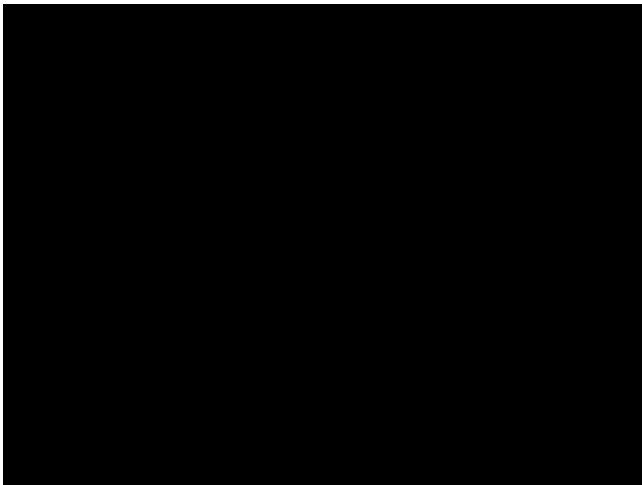
Source: Forrester Research, Inc.

Predictive Analyses

Attempts to develop models of organizational systems that can be used to predict future outcomes and understand the consequences of hypothetical changes in organizations.



Dell Social Media Listening Center



<http://www.youtube.com/watch?v=-inwU1HsRog>

Agenda

- Customer experience
- Social media
- Mobile
- Analytics
- **Big Data**
- IoT

“2016 vai ser um Big Bang no uso de Big Data”

BY LETICIA PAUTASIO IN ANÁLISIS 2015 - DESTAQUES — 29 OUT, 2015

Q1



in LinkedIn

f Facebook 2

t Twitter

G Google

✉ Email

Futurecom 2015 – Amos Genish, presidente da Vivo (Telefônica), anunciou a Vivo Easey, um aplicativo que permitirá que os usuários contratem pacotes de voz, dados e que possam gestionar seus planos, entre outros (tudo isso diretamente do aplicativo). “Hoje existe uma grande quantidade de pessoas que querem ser atendidos 100% de maneira digital. Esse é um caminho natural”, detalhou.

<http://www.telesemana.com/futurecom/pt/2015/10/29/el-2016-va-a-ser-un-big-bang-en-el-uso-de-big-data/>

Big Data: 3 Vs

World Economic Forum (2012) opined that **big data represents a new form of economic asset.**

- **Volume**

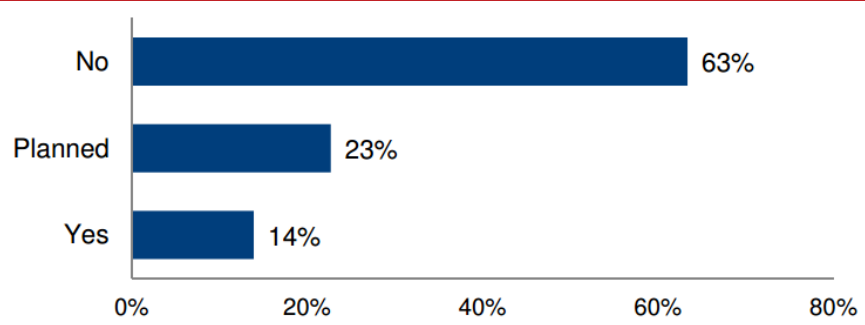
- Todos os dados que são recolhidos

- **Velocidade**

- Criação, transmissão e recepção de dados em tempo real

- **Variedade**

- Multi-estruturados
- Com origem em múltiplas interacções de clientes
 - clickstream (website visits)
 - comentários
 - Email
 - SMS
 - pesquisas
 - sensor data
 - georeferenciação
 - social posts
 - Tweets



Is there a comprehensive strategy for big data in your company? (n=273)

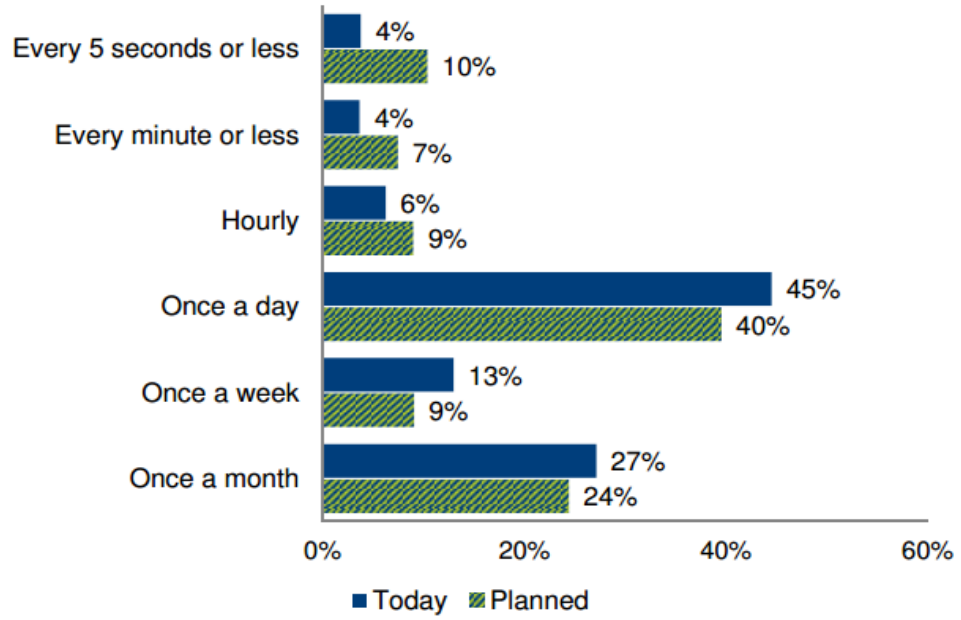
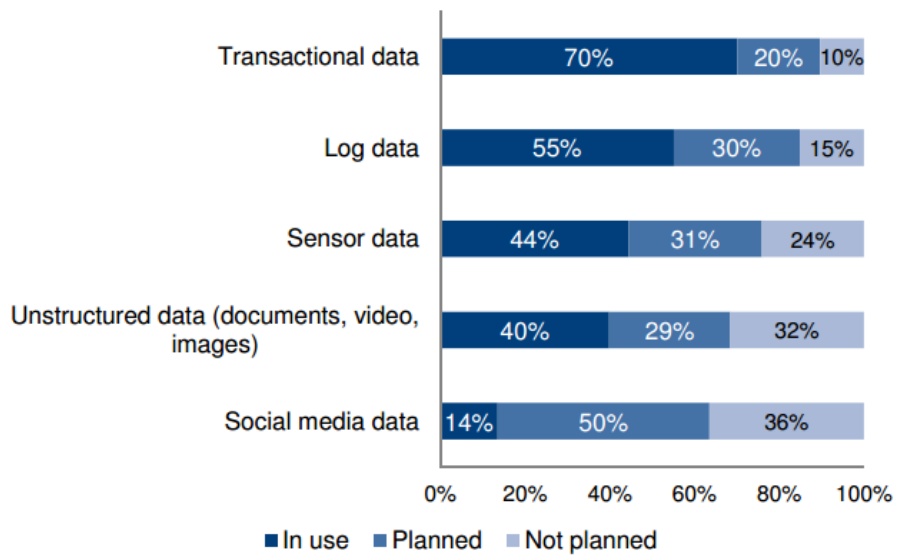
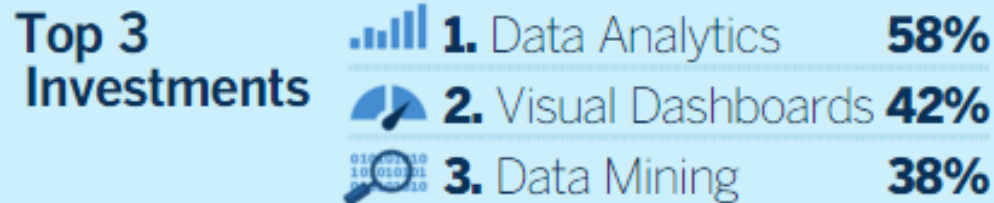


Figure 27: What kind of data do you analyze (at the moment and planned)? (n=200, multiple choice)

Please specify what percentage of your company's data is integrated for reporting monitoring and analysis in which time intervals? (Today and planned) (n=160 and 53)

2015 BIG DATA AND ANALYTICS SURVEY



Business Goals Driving Investments



Big Data Landscape 2016

Infrastructure

Hadoop On-Premise
 cloudera Hortonworks MAPR Pivotal IBM InfoSphere splice bluedata jethro

Hadoop in the Cloud
 amazon web services Microsoft Azure Google Cloud Platform IBM InfoSphere CAZENA TREASURE DATA altiscale Quibole xplenty

Spark
 databricks GridGain TACHYON NEXUS

Cluster Services
 amazon web services kubernetes docker HPCC SYSTEMS MESOSPHERE CoreOS pepperdata StackIQ

Analytics

Analyst Platforms
 Palantir AYASDI Quid enigma Digital Reasoning ORBITAL INSIGHT

Analytics Platforms
 Microsoft GUAVUS Datameer interana

Data Science Platforms
 context relevant CONTINUUM DataRobot Alpine MODE plotly ADATAQ dataiku notorian DOMINO sense yhat ALGORITHMIA

Visualization
 tableau Google Cloud Platform Roambi GOMDATA Qlik CHARTIO

Applications

Sales & Marketing
 RADIUS Gainsight bloomreach Zeta livefyre blueyonder kahuna Lattice persado infer sense AVISO infer ACTIONIQ QUANTIFIND EN GAGIO

Customer Service
 MEDALLIA ATTENITY CLARABRIDGE STELLA Service NGDATA Preact DigitalGenius appuri fuse/machines

Human Capital
 gold Connectifier textic entelo hiQ

Legal
 RAVEL JUDICATA Everlaw Brevia PREMONITOR

NoSQL Databases
 amazon DynamoDB Google Cloud Platform ORACLE Microsoft Azure MarkLogic mongoDB DATASTAX Couchbase SequoiaDB redislabs influxdata

NewsQL Databases
 SAP HANA Clustrix Pivotal paradigm4 nuODB MariaDB VOLTDB citusdata doopdb Trafalgar Cockroach LABS

BI Platforms
 Power BI amazon web services Domo Wave Analytics GoodData birst platforma looker atscale ARCADIA BUSINESS

Statistical Computing
 sas SPSS MATLAB

Log Analytics
 splunk sumologic kibana CLOUD PHYSICS loggly

Social Analytics
 NETBASE DATASIFT tracx bitly synthosio bottlenose simplereach

Ad Optimization
 MediaMath Integral OpenX rocketfuel Adgorithms theTradeDesk LiveIntent DataXu Appier TAPAD

Security
 CYLANCE CounterTack cyberason ThreatMetrix AREA 1 SECURITY SentinelOne Recorded Future FORTSCALE siftscience Keybase feedzai SIGNIFYD

Vertical AI Applications
 facebook Clara KASIST lumina

Graph Databases
 neo4j OrientDB InfiniteGraph

MPP Databases
 TERADATA VERTICA Netezza koginitio dremio

Cloud EDW
 amazon web services Google Cloud Platform Microsoft Azure Pivotal snowflake WATERLINE DATA Infoworks

Data Transformation
 alteryx TRIFACTA tamer StreamSets Alation

Data Integration
 informatica Put potential to work MuleSoft snapLogic Bedrock Data

Real-Time
 amazon web services METAMARKETS confluent DATATOURNMENT dataArtisans

Machine Learning
 Azure Machine Learning amazon H2O SKYFREE rapidminer DATAPREP deepgenio VISENZE PredictionIO glowFlash

Speech & NLP
 NarrativeScience api.ai NUANCE Dato semantic machines rapidminer cortical.io MindMeld IDIBON vscop

Horizontal AI
 IBM Watson Cortana sentient VIV nvidia Numenta MetaMind clarifai

Publisher Tools
 Outbrain mixpanel Chartbeat yieldbot Yieldmo

Govt/ Regulation
 Socrata OPENGOV EN FiscalNote PREPOLD enigma mark43 OpenDataSoft

Finance
 affirm OnDeck LendingClub Kreditech zebra finance LendUp Kabbage tidemark Puffi INSIKT uora Dataminr Lenddo KENSHC AIDYIA iSENTIUM Quantopian sentient

Management / Monitoring
 New Relic APPDYNAMICS amazon web services actifio Numerify splunk DATADOG Trocena Anodot

Security
 TANIUM illumio CODE42 DataGravity CIPHERCloud VECTRA sqrrl BlueTalon

Storage
 amazon web services Google Cloud Platform Microsoft Azure panasas nimblestorage Qumulo

App Dev
 apigee CASK Kore IO Typesafe

Crowd-sourcing
 amazon mechanical turk CrowdFlower WorkFusion

Search
 hp AUTONOMY ORACLE INSEGA EXALEAD Lucidworks elastic ThoughtSpot MAANA swifttype Algolia SINEQUA

Data Services
 OPERA Mu Sigma DATA SCIENCE kaggle datakind

For Business Analysts
 OrigamiLogic ClearStory CIRRO import io

SMB / Commerce
 Google Analytics AMPLITUDE RUMetrics BLUECORE sumall granify Airtable retention custora

Education / Learning
 KNEWTON Clever deClara PANORAMA knowre

Life Sciences
 23andMe Counsel REcombine KYRUS FLATIRON zymergen HealthTap METABIOTA ZEPHYR HEALTH ovia Gingerio transcriptic Glow enlitic AICure Atomwise

Industries
 OP@WER eHarmony RetailNext duetto STITCH FIX WorkFusion BLUE RIVER TACHYUS Seeq FarmLogs SwiftKey HowGood select NIGHT MACHINE statmuse B@XEVER

Cross-Infrastructure/Analytics

amazon web services Google Microsoft IBM SAP SAS hp Autonomy vmware talend TIBCO TERADATA ORACLE NetApp

Open Source

Framework
 hadoop YARN Spark MESOS TEZ Flink CDAP

Query / Data Flow
 SLAMDATA Apache ORILL Google Cloud Dataflow CouchDB riak OPENSTACK nifi

Data Access
 PARSE accumulo cassandra mongoDB kafka riak

Coordination
 talend Apache Zookeeper Apache Ambari

Real-Time
 STORM Spark APEX Flink TACHYON druid

Stat Tools
 Scala NumPy SciPy

Machine Learning
 mlilb Aerosolve Apache SINGA MADlib Caffe TensorFlow VELES WEKA FeatureFu DIMSUM jupyter DL4J

Search
 Elasticsearch Solr Lucene

Security
 Apache Ranger Zeppelin

Data Sources & APIs

Health
 Apple JAWBONE GARMIN practicefusion fitbit Withings VALIDIC netatmo kinsa Human API

IOT
 UPTAKE ThingWorx helium samsara AUGURY

Financial & Economic Data
 Bloomberg DOW JONES YDLEE PREMISE S&P CAPITAL IQ quandl xignite CB INSIGHTS mattermark estimote PLAID

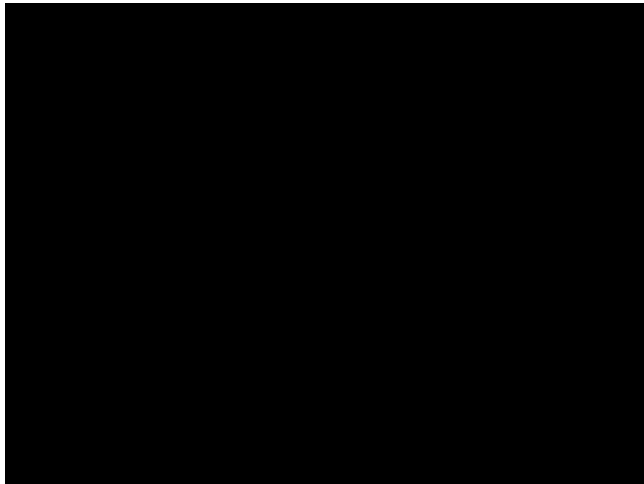
Air / Space / Sea
 PLANET LABS spire WINDWARD CRUISE Airware DroneDeploy SKYCATCH

Location/People/Entities
 GARMIN foursquare InsideView esri STREETLINE CONNECTING THE REAL WORLD CARTODB factual PlaceIQ Crimson Hexagon placemeter BASIS Sense360

Other
 qualtrics panjiva DATA.GOV

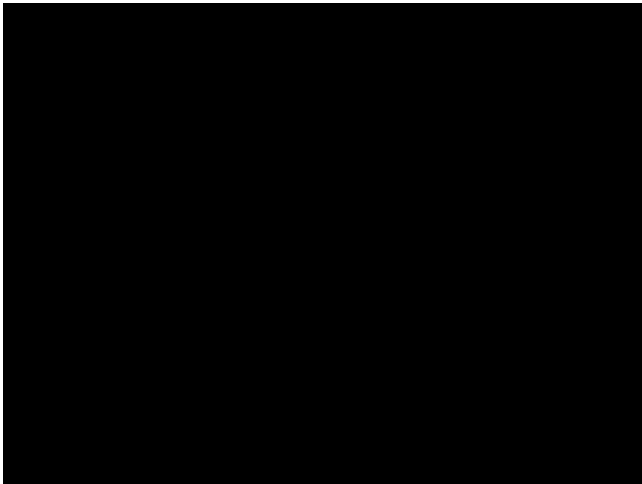
Incubators & Schools
 GA DataCamp INSIGHT METIS DataElite The Data Incubator

Big Data in Banking



<https://www.youtube.com/watch?v=1RYKgj-QK4I>

Personalized retail experiences using Big Data



https://www.youtube.com/watch?v=3Vg5idj_590

Agenda

- Customer experience
- Social media
- Mobile
- Analytics
- Big Data
- **IoT**

IoT

- The Internet of Things (IoT) is a novel paradigm that is rapidly gaining ground in the scenario of modern wireless telecommunications;
- The basic idea of this concept is the pervasive presence around us of a variety of things or objects – such as Radio-Frequency IDentification (RFID) tags, sensors, actuators, mobile phones, etc. – which, through unique addressing schemes, are able to interact with each other and cooperate with their neighbors to reach common goals;
- The US National Intelligence Council (NIC) foresees that “by 2025 Internet nodes may reside in everyday things – food packages, furniture, paper documents, and more”.
(Atzori et al., 2010)
- Cisco estimates that by 2020 over 50 billion objects will be connected to the Internet:
- HP estimates that by 2015 over 1 trillion objects will be connected.

IoT

Smart Cities

- Smart surveillance, automated transportation, smart energy management systems, water distribution, urban security and environmental monitoring

Smart Vending Machines

- Monitoring inventory and communication
- Visual recognition to offer past choices, and collecting demographic data on customers

Smart Homes

- Command air conditioning, lights and appliances. Lock doors

Wearables

- Fitness, health and entertainment

Connected Cars

- Vehicles able to optimize their own operation, maintenance as well as comfort of passengers using onboard sensors and Internet connectivity

Smart Retail

- Remain connected with consumers even out of store through smartphones and using Beacon technology

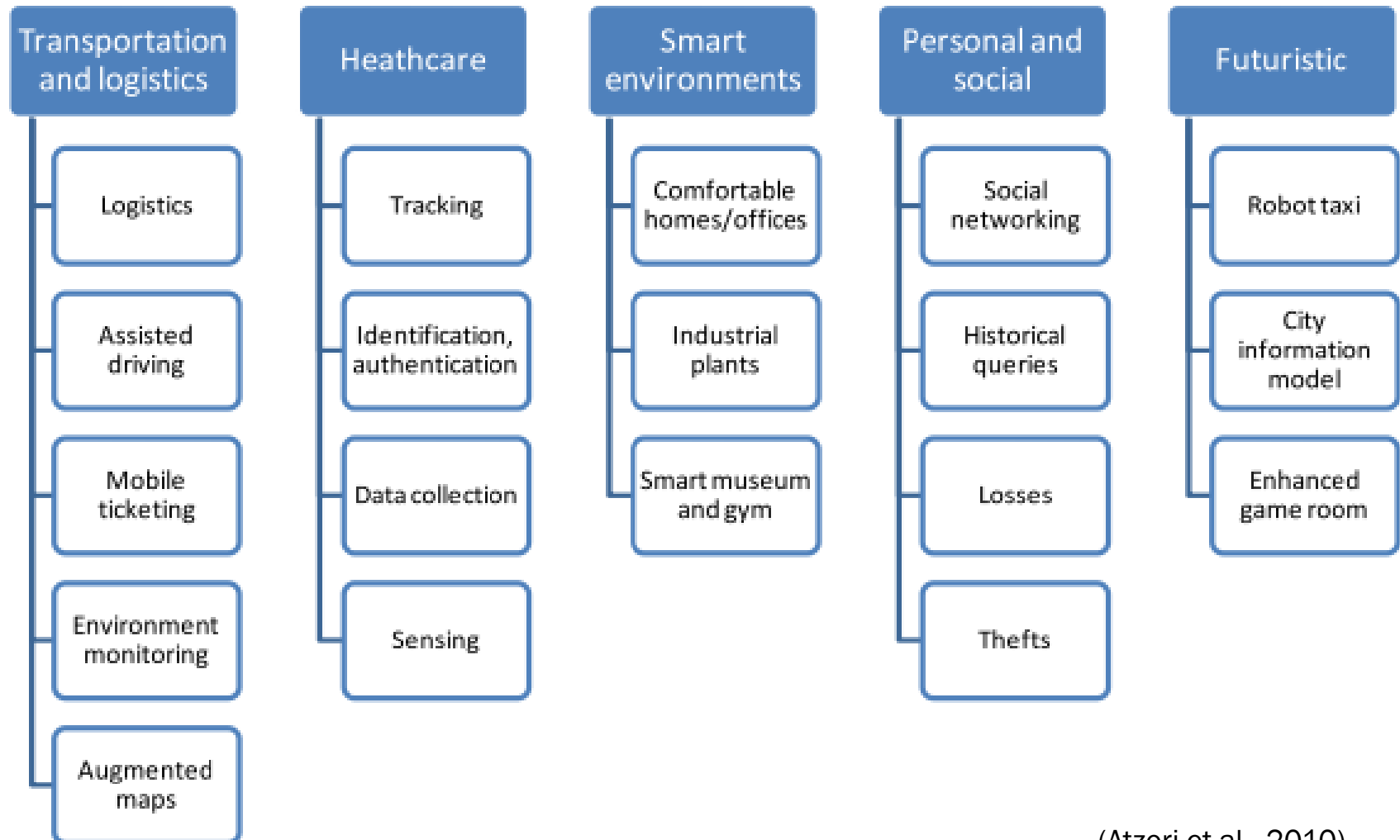
Healthcare

- Connected healthcare system and smart medical devices

Industrial IoT

- Tracking goods, real time information exchange about inventory among suppliers and retailers and automated delivery

IoT – Application domains



(Atzori et al., 2010)

The future today

The world's largest taxi company owns no vehicles

Uber

The largest accommodation provider owns no real estate

Airbnb

The most popular media provider creates no content

Facebook

The most valuable photo company sells no cameras

Instagram

The fastest growing television network lays no cables

Netflix

The most valuable retailer has no inventory

Alibaba

The future today



<http://www.smartinsights.com/social-media-marketing/social-media-strategy/new-global-social-media-research/>



FUTURE
NEXT EXIT ↗

Referências

- Atzori, L., Iera, A., & Morabito, G. (2010). The internet of things: A survey. *Computer Networks*, 54(15), 2787-2805.
- Berthon, P., Pitt, L., McCarthy, I., & Kates, S. (2007). When customers get clever: Managerial approaches to dealing with creative consumers. *Business Horizons*, 50(1), 39—47.
- Big Data Survey Europe, (2012), by BARC Institute: Wuerzburg, Germany, [Online], Available: https://www.pnone.com/fileadmin/user_upload/doc/study/BARC_BIG_DATA_SURVEY_EN_final.pdf [23 Nov 2015].
- Deloitte Global Human Capital Trends 2015. Available at: http://d2mtr37y39tpbu.cloudfront.net/wp-content/uploads/2015/08/DUP_GlobalHumanCapitalTrends2015.pdf [Accessed April 11, 2016].
- Deloitte Global Human Capital Trends 2016. Available at: <http://www.americansforthearts.org/sites/default/files/2016%20Deloitte%20Human%20Capital%20Trends.pdf> [Accessed April 13, 2016].
- Edosomwan, S., Prakasan, S., Kouame, D., Watson, J., & Seymour, T. (2011). The history of social media and its impact on business. *Journal of Applied Management and Entrepreneurship*, 16(3), 79-91.
- Kane, G. C., Fichman, R. G., Gallagher, J., & Glaser, J. (2009). Community Relations 2.0. *Harvard business review*, 87(11), 45-50.
- Kaplan, A., & Haenlein, M. (2010). Users of the world, unite! The challenges and opportunities of social media *Business Horizons*, 53(1), 59—68.
- Kietzmann, J. H., Hermkens, K., McCarthy, I. P., & Silvestre, B. S. (2011). Social media? Get serious! Understanding the functional building blocks of social media. *Business Horizons*, 54(3), 241-251.
- Meyer, C., & Schwager, A. (2007). Understanding customer experience. *Harvard business review*, 85(2), 116.
- O'Brien, H. L., & Toms, E. G. (2008). What is user engagement? A conceptual framework for defining user engagement with technology. *Journal of the American Society for Information Science and Technology*, 59(6), 938-955.
- Palmer, A. (2010). Customer experience management: a critical review of an emerging idea. *Journal of Services Marketing*, 24(3), 196-208.

Referências

Ranjan, J., & Bhatnagar, V. (2009). A holistic framework for mCRM–data mining perspective. *Information Management & Computer Security*, 17(2), 151-165.

Sinisalo, J., Salo, J., Karjaluoto, H., & Leppäniemi, M. (2007). Mobile customer relationship management: underlying issues and challenges. *Business Process Management Journal*, 13(6), 771-787.

Zeng, D., Chen, H., Lusch, R., & Li, S. H. (2010). Social media analytics and intelligence. *Intelligent Systems, IEEE*, 25(6), 13-16.

World Economic Forum. (2012). Big data, big impact: New possibilities for international development. Available at: http://www3.weforum.org/docs/WEF_TC_MFS_BigDataBigImpact_Briefing_2012.pdf [Accessed April 11, 2016].