# The importance of Big Data Analytics in studying consumer behavior

Dr. Paul Blondel • 27.09.2019
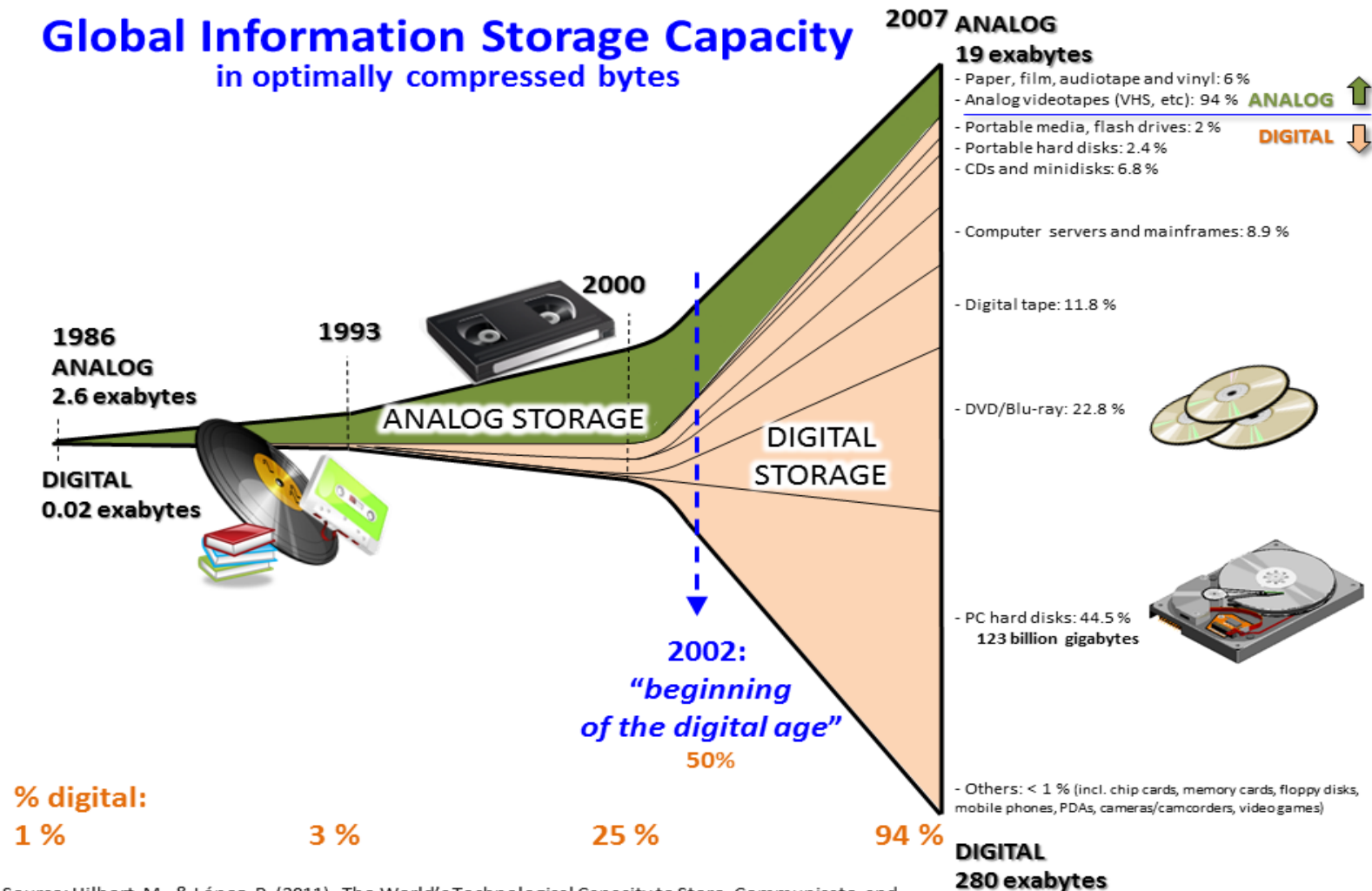
# What is Big Data?

## A combination of  characteristics

- High **volume**

- High **variety/complexity**

- High **velocity**

# Global Information Storage Capacity
## in optimally compressed bytes

**2007 ANALOG**
**19 exabytes**
- Paper, film, audiotape and vinyl: 6 %
- Analog videotapes (VHS, etc): 94 %   **ANALOG**
- Portable media, flash drives: 2 %   **DIGITAL**
- Portable hard disks: 2.4 %
- CDs and minidisks: 6.8 %

- Computer servers and mainframes: 8.9 %

- Digital tape: 11.8 %

- DVD/Blu-ray: 22.8 %

**DIGITAL STORAGE**

**1986 ANALOG 2.6 exabytes**

**DIGITAL 0.02 exabytes**

ANALOG STORAGE

**1993**

**2000**

- PC hard disks: 44.5 %
    123 billion gigabytes

**2002: "beginning of the digital age" 50%**

- Others: < 1 % (incl. chip cards, memory cards, floppy disks, mobile phones, PDAs, cameras/camcorders, video games)

**% digital:**
**1 %**       **3 %**       **25 %**       **94 %**

**DIGITAL 280 exabytes**

# Where comes consumers' Big Data?

## The digital era created new sources of information

- CRM* softwares

- Social networks

- Sensors/IOTs**

- Blog articles

- Digitized news and articles

- Etc.

* CRM: Customer Relationship Management    **IOT: Internet Of Things

# Consumer behavior?

## Definition

- How consumers **make decisions** about what they **need**, **want** and **desire**

- How do they **buy**, **use**, and **dispose** of goods.

# Why study consumer behavior?

## Business needs

- **Attracting new customers**

- **Keeping acquired customers**

- While **having a high ROI**\*

\*ROI: Return On Investment

# Studying customer behavior with Big Data Analytics

## New possibilities

- Forecast **trends**

- Compute **dynamic prices**

- Improve **customer satisfaction**

- Forecast the **demand**

- Detect the **churn**

- Etc.

# Forecast trends

**Goal: Forecasting the trends to be the first supplier**

**What we can forecast:**

- Excitement trends (for new products)
- Worry trends (ex: concerns about a material )
- Future needs (ex: organic materials)

Analyzing **social networks** and **blog articles** can be particularly interesting here.

Example: Deloitte's Blab tool

Style and Fashion

blab

Topics
Themes
Mashups
Snapshots
Alerts

Winter Fashion  Summer Fashion

Fashion Show  Spring Fashion  Fall Fashion

Fashion Week
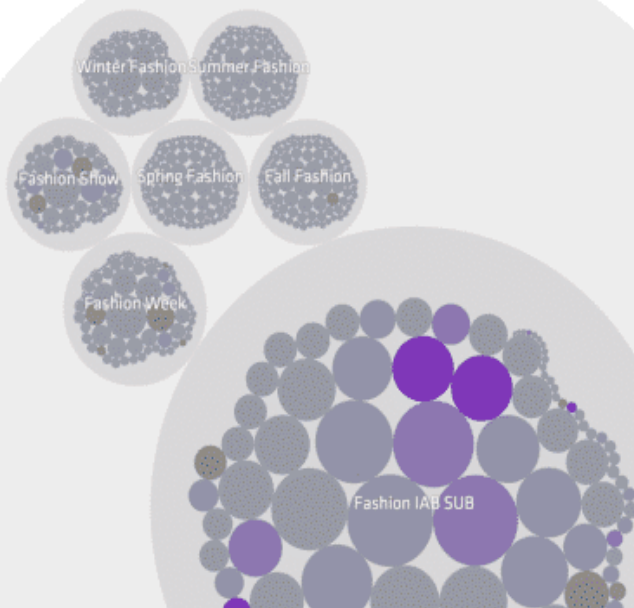
Fashion IAB SUB

Fashion IAB SUB ⊗

Top Posts

Mayerlind Fajardo
@FPMay

Conversation Analytics

400k

200k

0

-72h    -48h    -24h    now    24h    48h    72h

30%
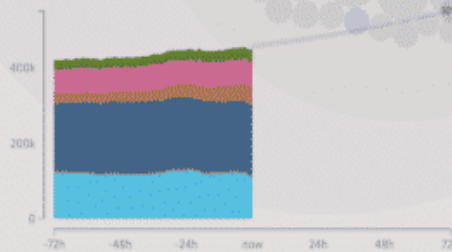
shoes   fashionblogger  haute couture
designers  jacket   spring   jeans  favourite
london
haute  liked  photography
dress
heels   model   modelos   moda
polyvore  paris  beauty
makeup  photo  bag  hair  style  wear
paris fashion  couture
designer  fashionshow
necklace  featuring  hautecouture  leather

Top Influencers

Mayerlind Fajardo

Sara D'Angelo

Scott-Co

NEXTATLAS

# Discover
# **Daily**

Your Explore page is created in real time according to your profiling.
Currently showing your personalized selection from a total of **477** trends, **227** insights, and **621** facts. Enjoy!

| **292** TRENDS | **169** INSIGHTS | **413** FACTS | **36** USE CASES |
|---|---|---|---|

TREND

March 2019

## **Fashionable Controversies**

This trend has been **stable** *in the last year*. It is experiencing **mild decline** (-16.1%) *this month* as compared to the previous month.

CULTURE

REPORTS

BRAND IDEAS

# Compute dynamic prices



**Goal: keep the highest ROI possible while beating the competition**

**With dynamic prices we can adapt to:**

- Taxe changes

- Competitor prices

- Seasonal effects

- Material cost changes

- Perceived value

**This is highly strategic to keep acquired consumers, continue to get new ones and to have a high ROI.**

Example: H&M uses dynamic pricing

# Improve consumer satisfaction
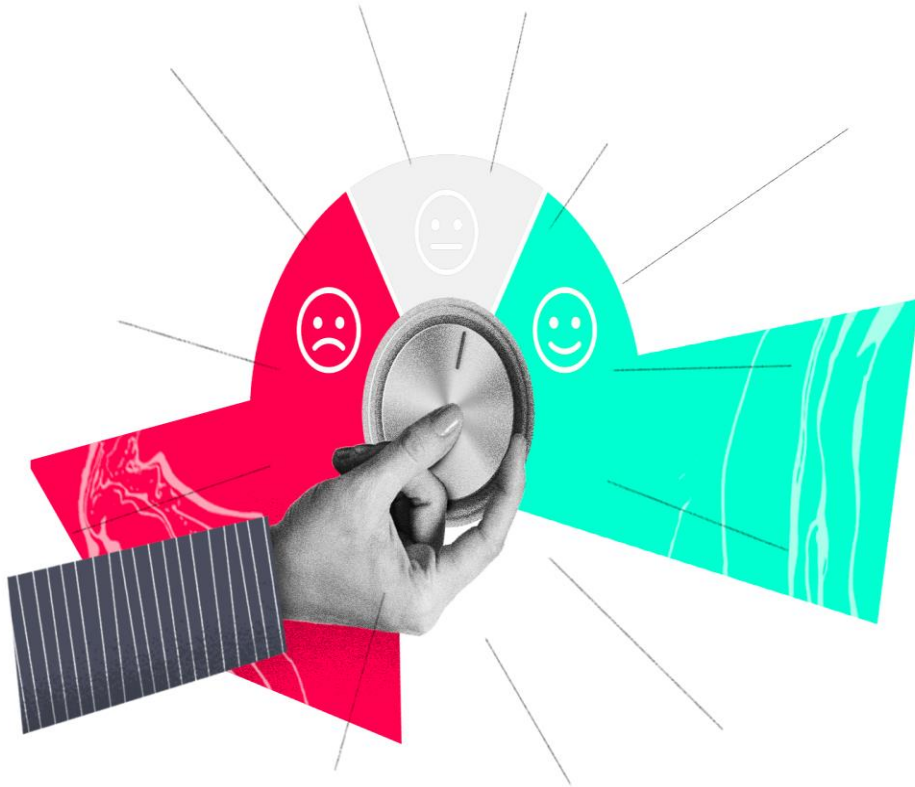
**Goal: improve satisfaction means improve retention and loyalty**

**Consumer satisfaction can be gauged from:**

- Consumer service calls

- Mentions in social networks

- Mentions in social media

Finding poor customer experience from data and solving this can **easily help improving the satisfaction**.

About **5 times less expensive** to keep an existing consumer rather than get a new one.

# Forecast the demand



Goal: knowing the demand to produce the right amount of products

Forecasting the demand helps:

- Limiting number of unsold products
- Reducing overall production costs
- Reducing environment damages

BUT: forecasting the demand is particularly challenging for the fashion industry, although recently the research focused on this issue*.

*Fashion Retail: Forecasting Demand for New Items*, KDD 2019

| Select Category | Select Brand | Enter SKU/Model Number | Select Vendor |
|---|---|---|---|
| All ▼ | All ▼ | Enter SKU | None |

Number of days to plan ◀

Calculate daily average based on

60

📅 December 1, 2017 - January 31, 2018 ▼    **Search**

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### BDP137_M
### 1



Sydney,BDP137
Vendor :
**V009** ▼

Suggested Quantity : 2
In Cart : 0
Ship By Surface per quantity: 0
Ship By Air per quantity: 0

| Unit Price | Shipping Mode | Quantity |
|---|---|---|
| 0 | Surface ▼ | 0 |

🛒 Add To Cart ⓘ

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### BDP142_L
### 1



Avery,BDP142
Vendor :
**V009** ▼

➡ Suggested Quantity : 61
In Cart : 0
Ship By Surface per quantity: 0
Ship By Air per quantity: 0

| Unit Price | Shipping Mode | Quantity |
|---|---|---|
| 0 | Surface ▼ | 0 |

🛒 Add To Cart ⓘ

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### BDP142_M
### 1



Avery,BDP142
Vendor :
**V009** ▼

Suggested Quantity : 52
In Cart : 0
Ship By Surface per quantity: 0
Ship By Air per quantity: 0

| Unit Price | Shipping Mode | Quantity |
|---|---|---|
| 0 | Surface ▼ | 0 |

🛒 Add To Cart ⓘ

# Detect the churn

**Goal: detect in advance if and when a consumer is likely to disengage**

**How to detect this?**

- Not opening your company's mails

- Unfollow your social networks

- Followed KOLs less interested

- Not buying for a while

Contact the customers likely to churn and give them **free coupons**, **promotions**, **invite them** to social events ... Remember it's **5 times harder** to get new customers!

**50%** Churn Propensity | **1,706** Policies at risk

Territory: OHIO    Product Line: AUTO    Period: Mar, 16    Segment: Support Seeking Skeptic

Set Filters

Export List to CSV

## CUSTOMER LIST

Search Customer

| Policyholder | Address | Account Data | | | |
|---|---|---|---|---|---|
| Abby J Zhou | 8412 Velvet Deer Con<br>Tsintaa Yiti li, Ohio, 92376-2229 | CLTV: Low<br>Churn Propensity: High<br>Segment: Support Seeking Skeptic<br>Recommendation: Send bundled campaign offer | Product: AUTO<br>Chanel: Bank<br>Policy #: 1088527<br>Renewal Date: Apr 25, 2016 | | > |
| Abraham M Levenson | 8584 Cinder Estates<br>Beaver Run, Ohio, 99631-4897 | CLTV: Low<br>Churn Propensity: High<br>Segment: Support Seeking Skeptic<br>Recommendation: Send bundled campaign offer | Product: AUTO<br>Chanel: Telesales<br>Policy #: 1013169<br>Renewal Date: Aug 2, 2015 | | > |
| Adam S Veach | 5846 Colonial Villas<br>Ninilchik, Ohio, 62531-3905 | CLTV: Low<br>Churn Propensity: High<br>Segment: Support Seeking Skeptic<br>Recommendation: Send bundled campaign offer | Product: AUTO<br>Chanel: Bank<br>Policy #: 1062093<br>Renewal Date: Jan 21, 2016 | | > |
| Adolph O Clement | 2136 Grand Highlands<br>Syndicate, Ohio, 96838-9908 | CLTV: Low<br>Churn Propensity: High<br>Segment: Support Seeking Skeptic<br>Recommendation: Send bundled campaign offer | Product: AUTO<br>Chanel: Web<br>Policy #: 1087562<br>Renewal Date: Oct 13, 2015 | | > |
| Adrian K Parker | 6534 Noble Branch Pi | CLTV: Low | Product: AUTO | | |

# The importance of Big Data Analytics

## McKinsey

- "*Big data* will become a key basis of competition", *Big data: The next frontier for innovation, competition, and productivity*

- "Big Data: Many companies don't have one… [those having one] can deliver productivity and profit gains that are 5 to 6 percent higher than those of the competition", *Big data: What's your plan?*

- "Our colleagues at the McKinsey Global Institute (MGI) … estimated that retailers exploiting data analytics … could increase their operating margins by more than 60 percent", Getting big impact from big data

# Big Data Analytics solutions for you



**Nowadays you don't need a massive budget for a super expensive team of Data engineers.**

**You can use SaaS\* solutions:**

- Inventory forecast:
  https://www.easyecom.io/
- Consumer analytics:
  https://www.sas.com/
  https://www.trifacta.com
- Trends forecast:
  https://www.spate.nyc/
  https://www.nextatlas.com/
- Dynamic pricing:
  https://www.5analytics.com
  https://www.antuit.com/

\* SaaS: Software as a Service (web platform)

# For fun!

## Clothing Detection for fashion recommendation
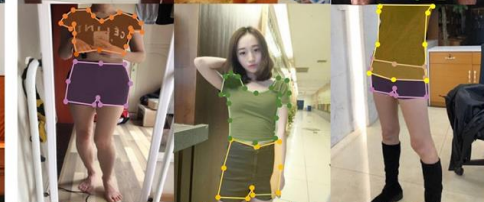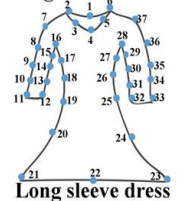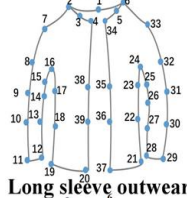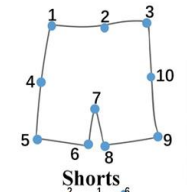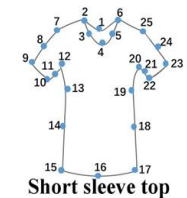
# Thank you for listening!

**What you can do *better* thanks to Big Data Analytics:**

- Be **more competitive**,
- **Forecast** what **want** your consumers,
- **Keep** your **consumers**
- **Reduce cost** by forecasting demand
- Have a **lower environment impact**!
- Etc (the potential is huge).

Big Data Analytics is **more and more** accessible to companies of all size thanks to **SaaS solutions**.