Data driven working and AI

The intelligent organization from a business perspective

pharmaceutical whole saler
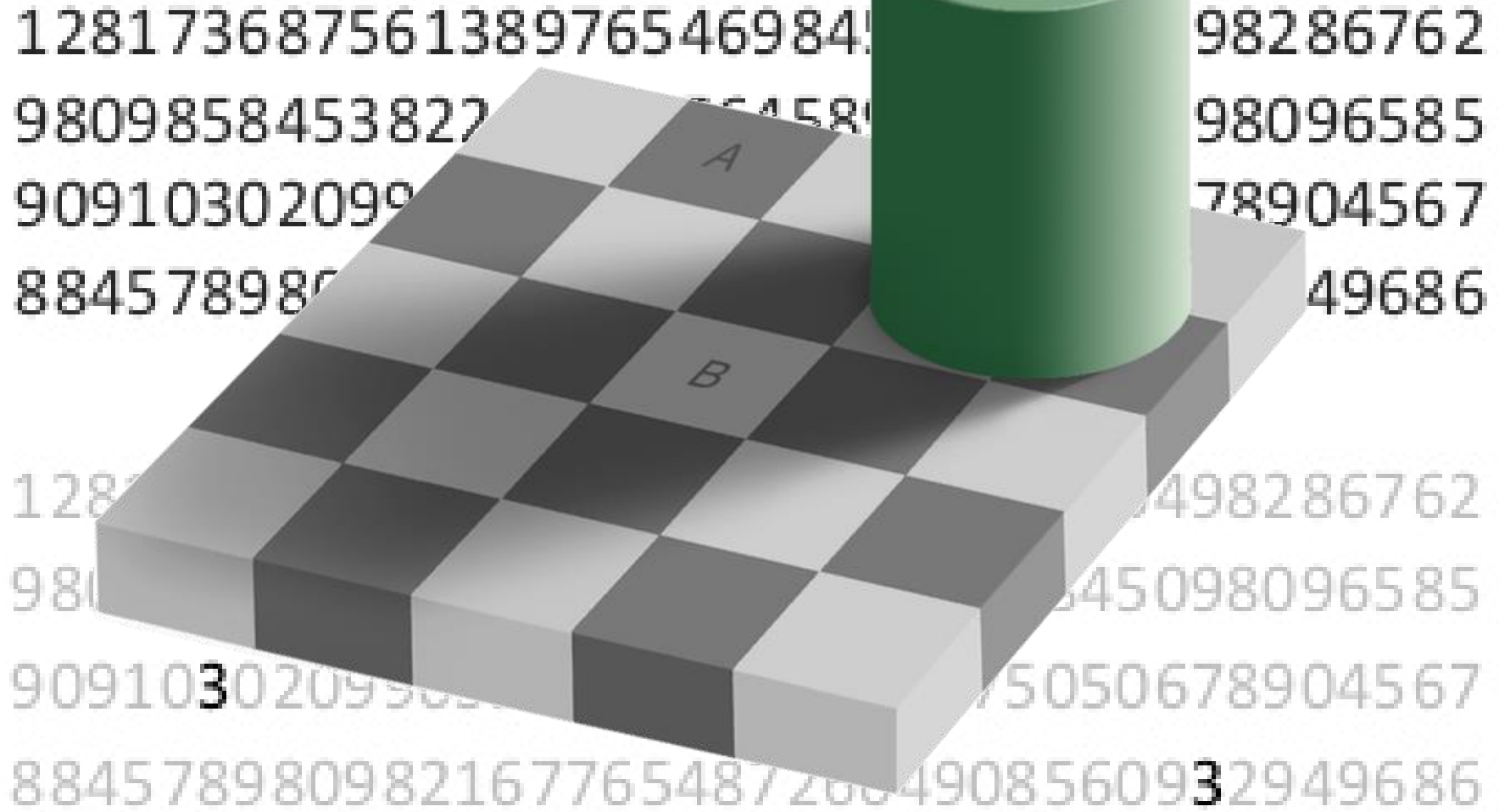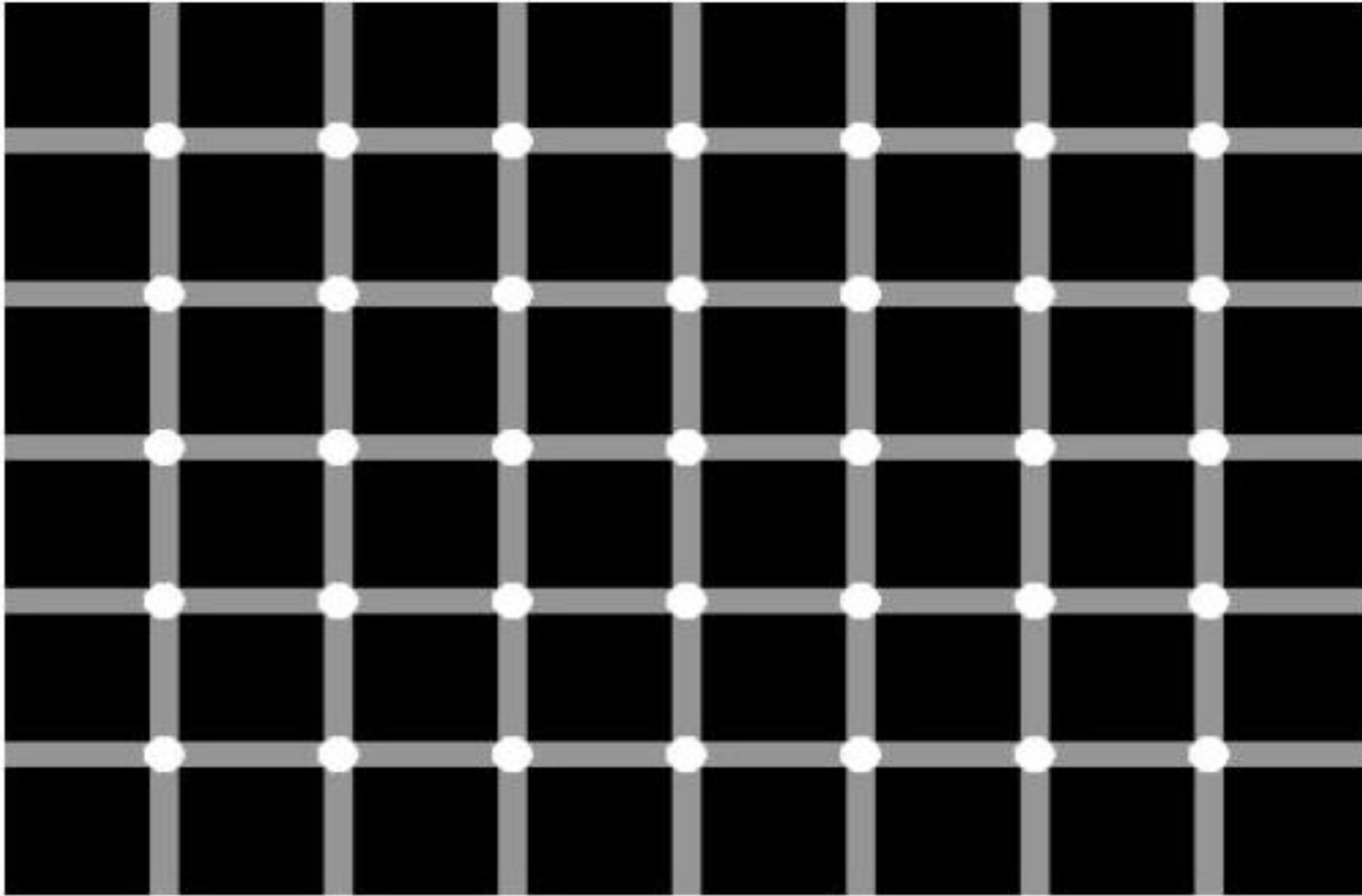
1 t/m 25 - omzet van laatste 2 maanden
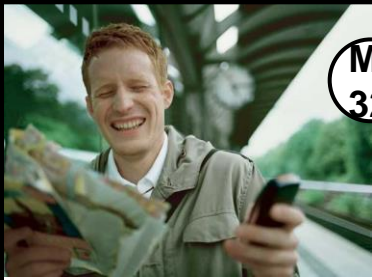
	Gem. omzet APO	Bruto omzet AFN
PANTOPRAZOL	6.586	92
ATORVASTATINE	5.949	6.227
SALMETEROL/FLUTICASON	3.666	5.038
TIOTROPIUM	3.837	3.826
OMEPRAZOL	2.832	2.938
ETANERCEPT	5.502	0
LOSARTAN	1.953	1.776
SIMVASTATINE	1.765	1.188
PRAVASTATINE	1.849	1.173
FLUTICASON	1.549	1.728
SUMATRIPTAN	1.645	2.074
BUDESONIDE/FORMOTEROL	1.597	3.706
ROSUVASTATINE	1.547	414
METOPROLOL	1.416	1.337
PAROXETINE	1.508	2.998
OLANZAPINE	1.504	1.542
ENALAPRIL	1.418	3.616
SOMATROPINE	3.370	0
DARBEPOETINE	1.967	0
ESOMEPRAZOL	1.501	192
ALENDRONINEZUUR	1.343	803
BUDESONIDE	1.139	563
VENLAFAXINE	1.120	1.679
IMATINIB	5.448	0
AMLODIPINE	1.063	1.482
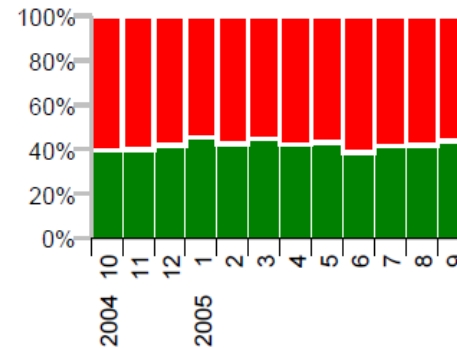
26 t/m 50 - omzet van laatste 2 maanden

	Gem. omzet APO	Bruto omzet AFN
FENTANYL	1.043	307
INSULINE-GEWOON+ISOFAAN	1.053	1.153
ETHINYLESTRADIOL/LEVONORGE	937	1.035
NIFEDIPINE	915	258
TAMSULOSINE	1.098	0
RISPERIDON	923	438
TENOFOVIR	3.035	0
MESALAZINE	892	2.037
ONBEKEND	774	918
FOLLITROPINE	1.417	1.475
PERINDOPRIL	849	819
CLOPIDOGREL	1.116	260
LOSARTAN/HYDROCHLOORTHIAZ	877	285
IRBESARTAN	868	0
ISOSORBIDEMONONITRAAT	760	267
GOSERELINE	1.341	552
VALSARTAN	758	1.232
GLIMEPIRIDE	720	202
INSULINE-ASPART	737	0
CITALOPRAM	715	877
INSULINE-GLARGINE	778	1.481
MIRTAZAPINE	701	0
EZETIMIB	734	244
FORMOTEROL	709	357
SALBUTAMOL	605	608

mobile company - 1

Sales

Martin, 32	Erika, 44	Marco, 38
48 Euro	**48 Euro**	**48 Euro**

Same sales, equal value? Yes!, or?…

mobile company - 2

	Martin, 32	Erika, 44	Marco, 38
Sales	**48 Euro**	**48 Euro**	**48 Euro**
	Same sales, equal value? Yes!, or?…		
Costs of sales	**– 120 Euro** Bought it in a shop	**–140 Euro** Bought it at retailer	**– 44 Euro** Has a pre-paid
Costs CC	**– 38 Euro** Keeps on calling the cc	**– 3.5 Euro** Contacted once cc	**0 Euro** Never had a contact with cc
Discount	**– 25 Euro** Migrated w/o paying fee	**– 55 Euro** Got a credit after complaining	**0 Euro** –
	Looking closer will reveal that they are not worth the same to us!		
Value			

The promise of Business Intelligence
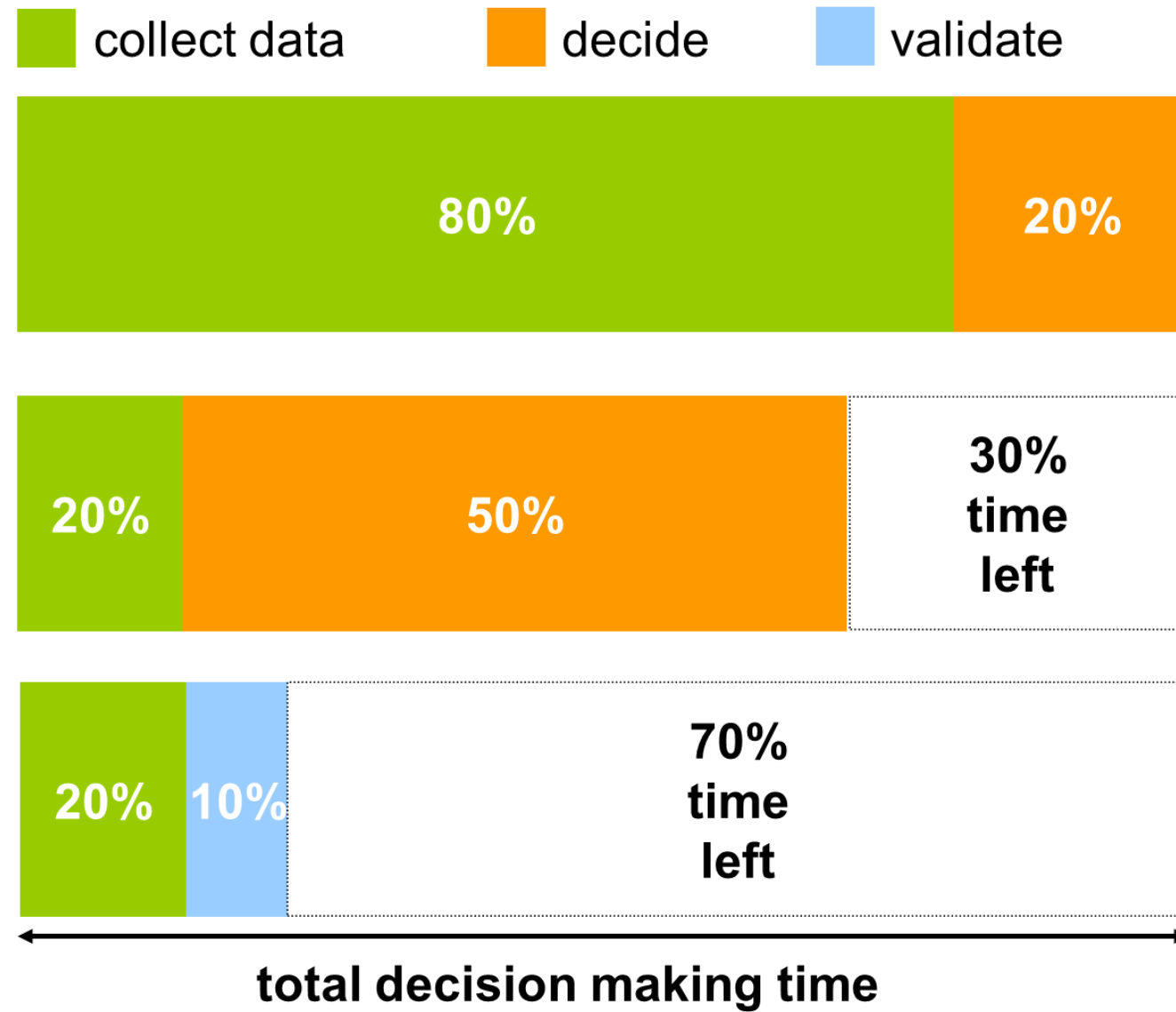
Business Intelligence (BI) is the continuing process in which organizations collect, store and analyze data in a specific way in order to apply the resulting information and knowledge in decision making processes to improve the performance of the organization

strategic management   change management   innovation management

action

information guided working

business intelligence

data science

knowledge

knowledge management

statistics

information

information management

privacy regulations

(big) data

data management

signals

From decision to data

Decision

Analytical
Insight

Data

...and not the other way around
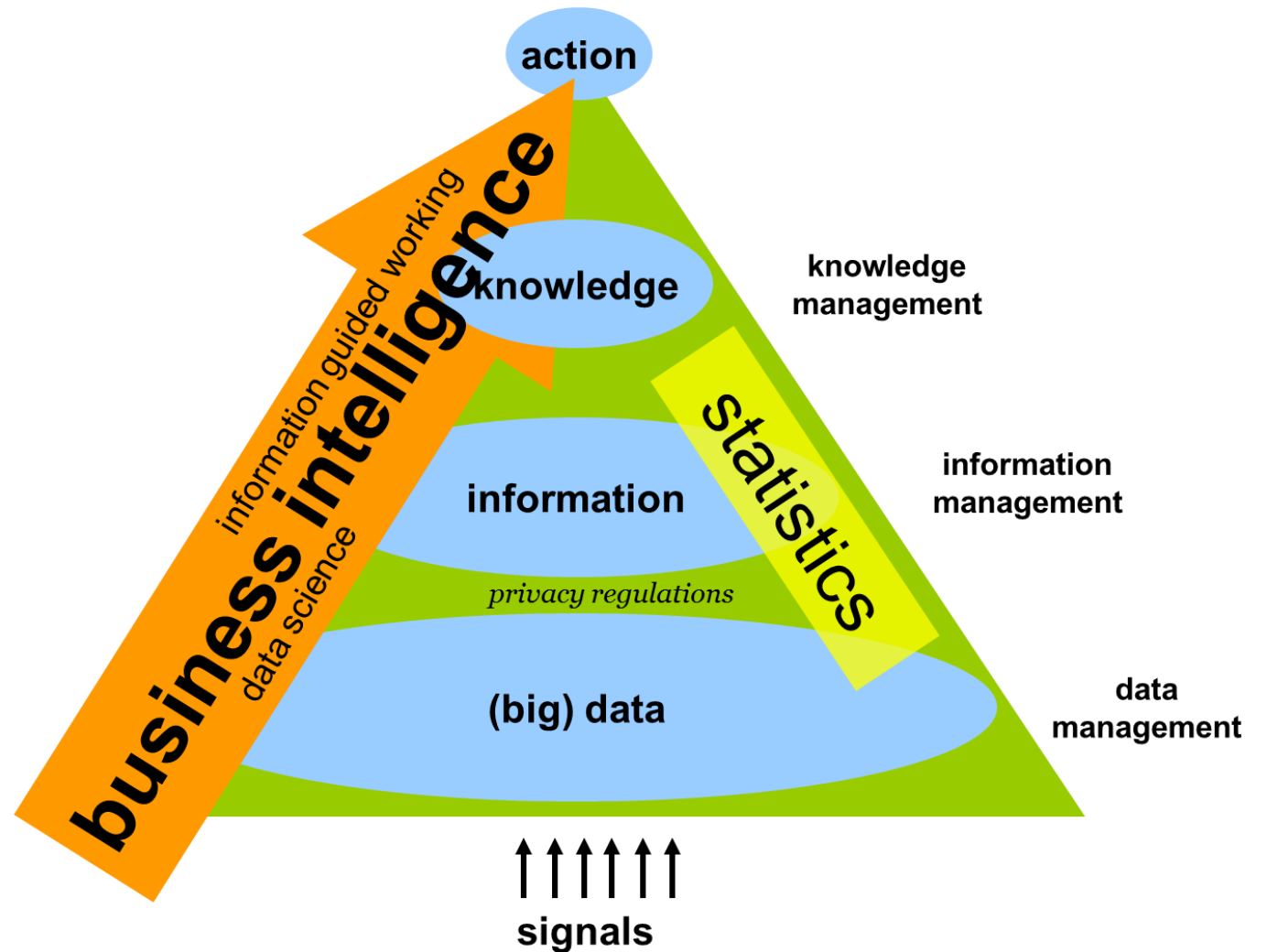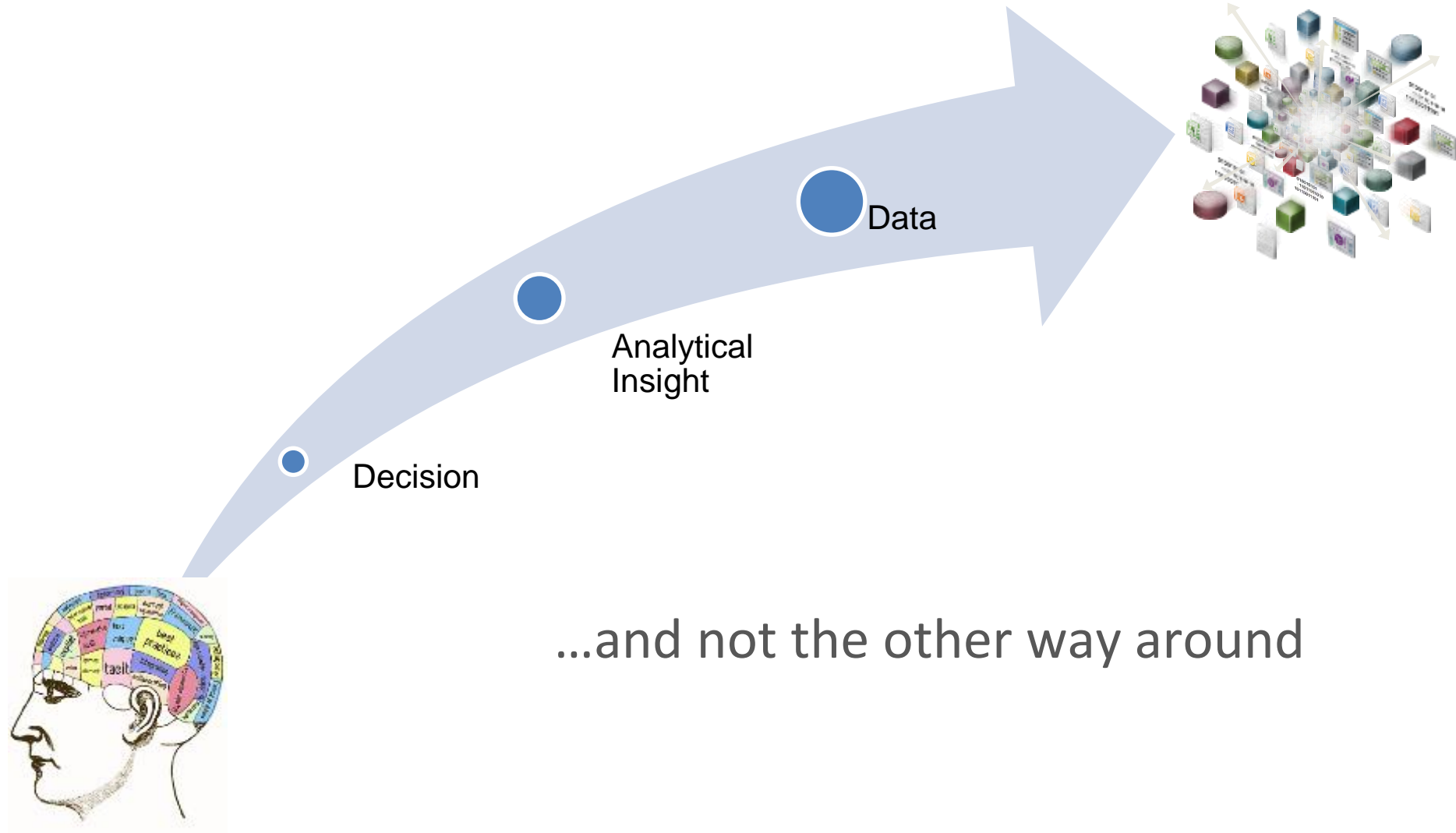
"Data-driven decisions tend to be better decisions. Leaders will either embrace this fact or be replaced by others who do"

Andrew McAfee (MIT)

PHILIPS
sense and simplicity

Albert Heijn in 2000: stove-pipe BI solutions
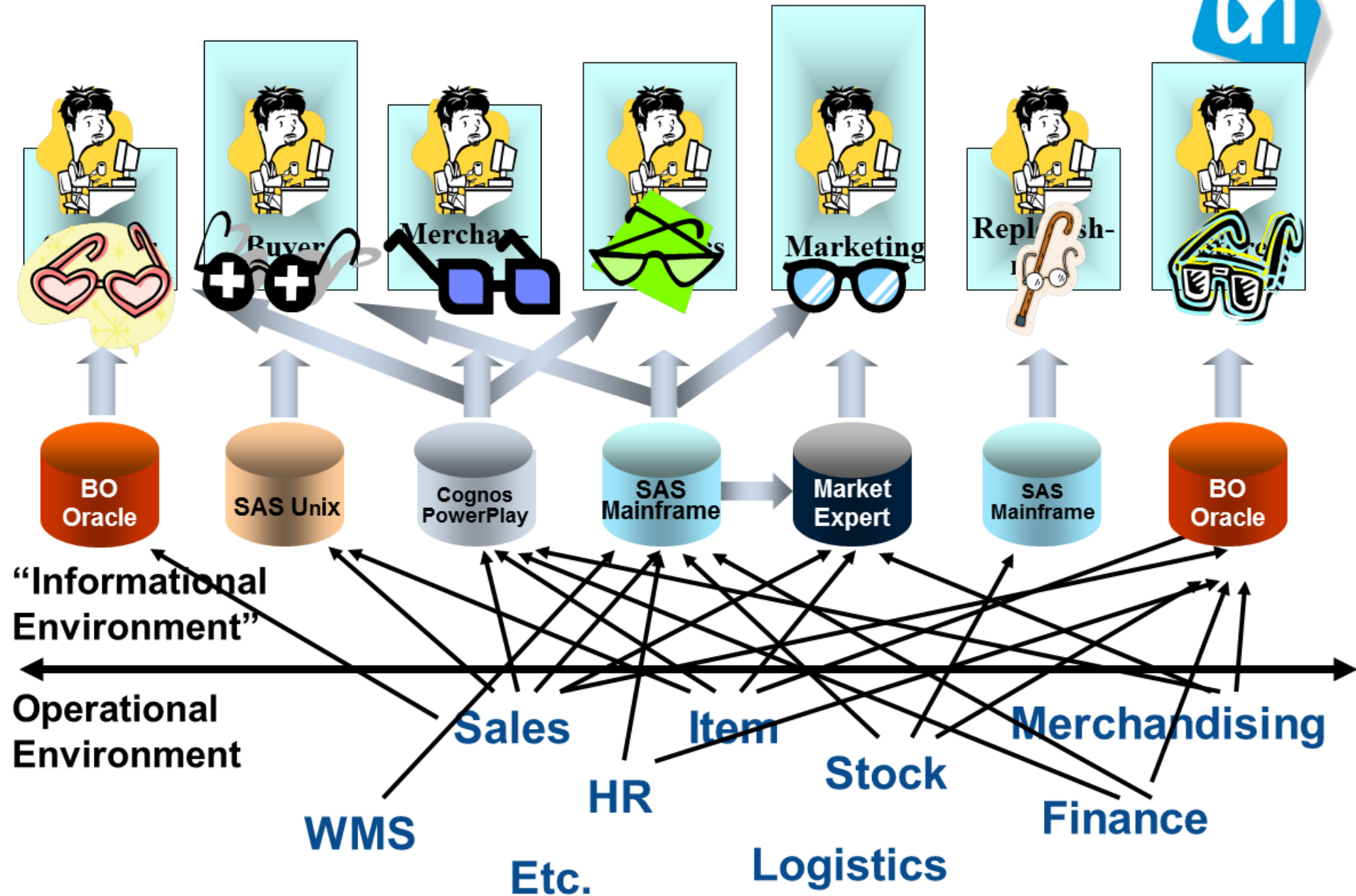
Today: Pallas - Providing One Single Integrated View

Covering & supporting total value chain

Supplier   Buyer   Merchandiser   Logistics   Marketing   Replenishment   Store   Customer

Informational Environment

Operational Environment

Sales   Item   M...

HR   Stock

WMS   Finance

Etc.   Logistics

Consistent

Single view of business

Adding value

Integration

History

Performance

Real time sales forecast every 5 minutes

Continuous Customer Driven Retail

Replenishment

Replenishment Control Room

Alerts & Monitoring   *Alerts & Monitoring*

Store Demand Forecast

| DC Replenishment | Store Demand Forecasting | Store Replenishment | Demand Forecasting |

Store Order

Customer Demand Forecast

WH Order
WH Order Simulation

Goods In, Goods Out, Adjustments

Store Order

Inventory Balance

Sales

Delivery   *Delivery*

Supplier   *Distribution Center*   *Store*

0% Business Intelligence success **100%**

4. innovate

50%

NETFLIX

develop new products and services with **analytical models**

25%

3. im-prove

optimize system with **KPI's and dashboards**

externe gegevens

25%

2. coördinate

execute tasks better with **analysis and 1 milion euro insights**

2%

1. understand

just execute tasks with **reporting**

internal data   **internal data**

raw materials   → ◯ → ◯ → ◯ → **products and services**

business processes

In short, business intelligence is all about..

To point us in the right direction

- Near 2020 we will surrounded by 26 billion devices that are connected (IoT).

- Each day 1,2 billion pictures are made and many of them are shared by social media. Photography will be the new universal language (Heiferman, 2013).

- Last 2 years more data is added to this iceberg than in the total history of mankind.

amount of data

BI gap

BI

the importance of BI Analytics will increase

time to take a decision

year 0   20th century   now

What is Big Data?

VOLUME
(Amount of ... g data)

VELOCITY

VARIETY
(different formats)

VARIABILITY
(different meanings)
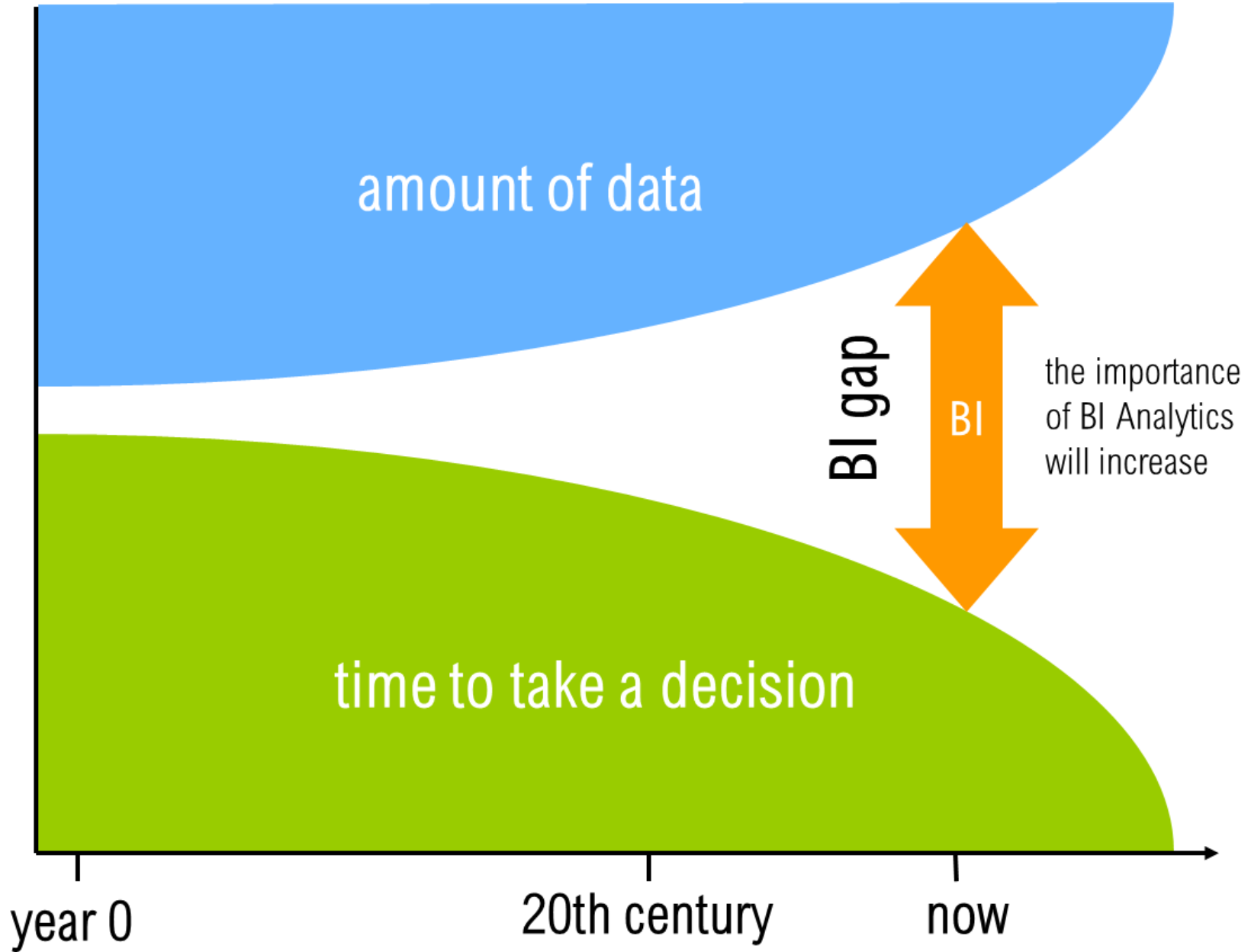
VALUE
(business value)
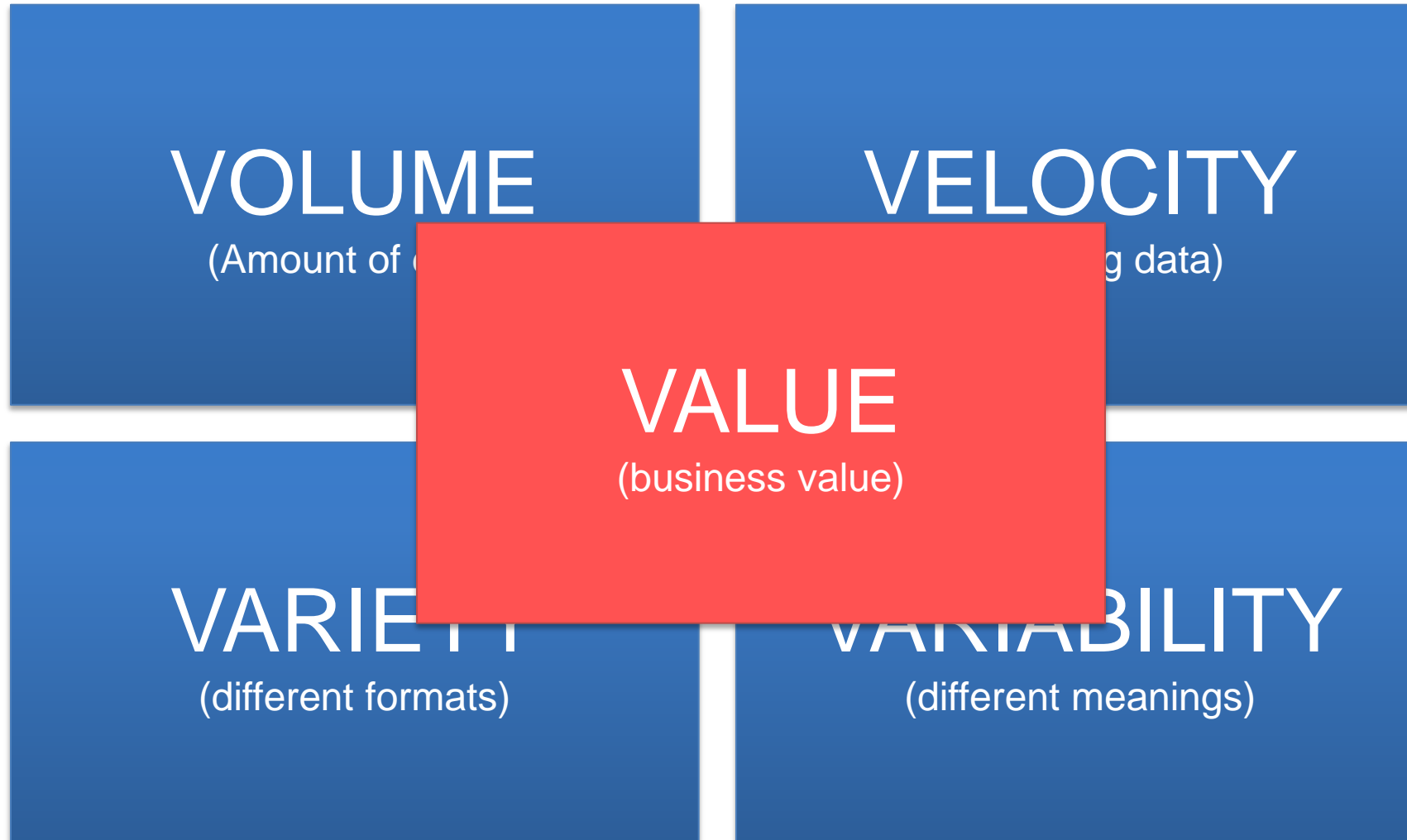
And the value is:

DISRUPTION

▸ **Business Activity Monitoring - ProRail**
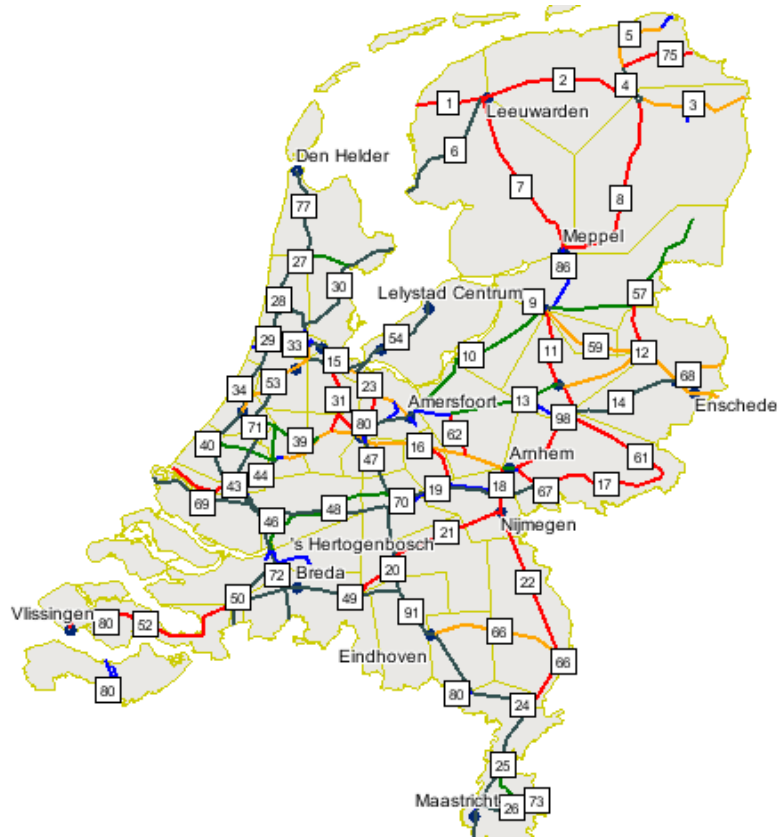
	Spoorlijn	Totaal
001	Harlingen Haven - Leeuwarden	97,103%
002	Leeuwarden - Groningen	98,401%
003	Waterhuizen aansluiting - Nieuweschans grens	99,165%
004	Sauwerd - Groningen	99,712%
005	Roodeschool - Sauwerd	99,107%
006	Leeuwarden - Stavoren	99,667%
007	Leeuwarden - Meppel	97,018%
008	Haren - Meppel	98,471%
009	Kampen - Zwolle	99,862%
010	Zwolle - Amersfoort Aansluiting	99,325%
011	Zwolle - Velperbroek aansluiting	98,144%
012	Deventer - Enschede Grens	99,085%
013	Barneveld Noord - Deventer	99,388%
014	Zutphen - Hengelo	99,604%
015	Diemen aansluiting - Amsterdam Riekerpolder aanslu	99,684%
016	De Haar - Arnhem	99,067%
017	Winterswijk - Zevenaar	98,824%
018	Arnhem - Nijmegen	98,800%
019	Geldermalsen - Vork	99,599%
020	Vught aansluiting - Boxtel	99,667%
021	Nijmegen - Tilburg	98,933%
022	Nijmegen - Roermond	98,776%

Impact on jobs

- **90% workers and 10% thinkers at the start of the 20ᵗʰ century, now it's the other way around**
- **Even farmers have** ... **out of business soon**

cows
genera
more
than m

This tree has 3,000 followers...do you?

Cow transmits 200 MB per year

Connected shoe

Asthma inhaler cross-referenced with environmental / weather data

Proteus chip transmits data from your stomach

Wireless pH & temperature sensor

Local Interrogation 'on the spot' by farmer

fusion between
data science and
art:

Project Asphyxia:

http://www.asphyxia-project.com/

The fire fighter

New York City Fights Fire with Data

Analytics help New York City firefighters track potential hot spots.

Brian Heaton | May 18, 2015

KPIs and Big Data

"SAP Predictive Maintenance & Service can help organizations reduce downtime of machines in factories. Thanks to data from connected sensors it can predict where and when disturbances will take place. This allows technicians to schedule and perform maintenance work - even before the problems occur."

👍

KPI window

Start of the process

End of the process
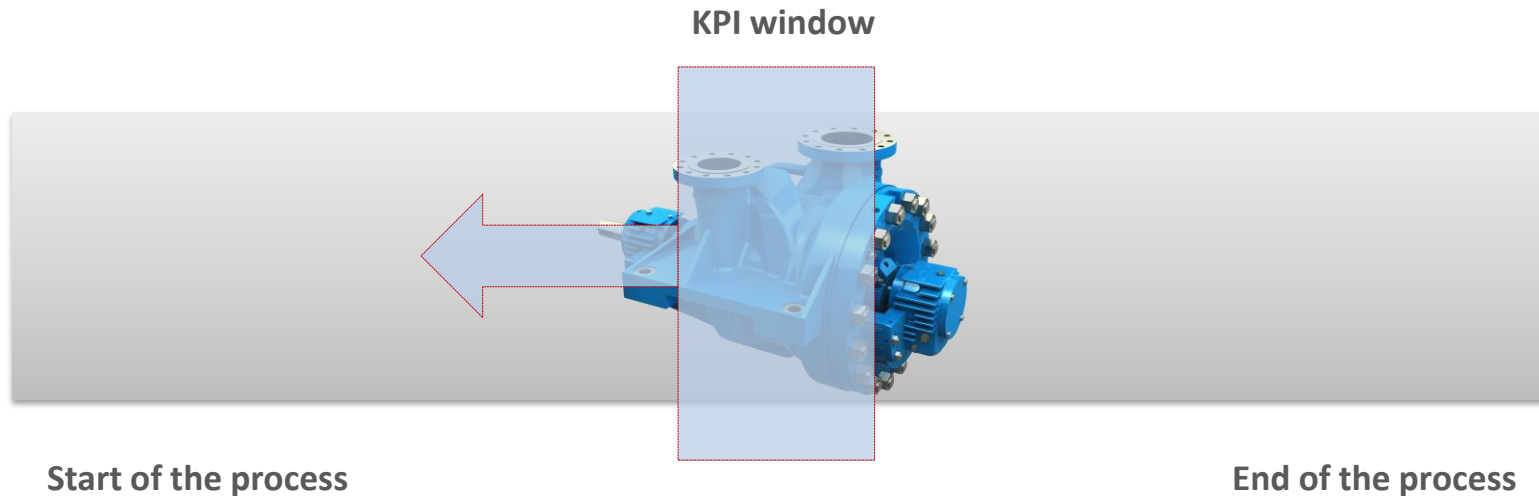
Over the next year, companies will spend an average of **$8M** on big data-related initiatives.

Multiplied by the number of companies (est. 4,75 million worldwide*) you will get a huge amount of dollars:

$ 1,000,000,000,000

Hundred $100 dollar bills

$1 million dollars (100 packets of $10,000)

$100 million looks a little more respectable
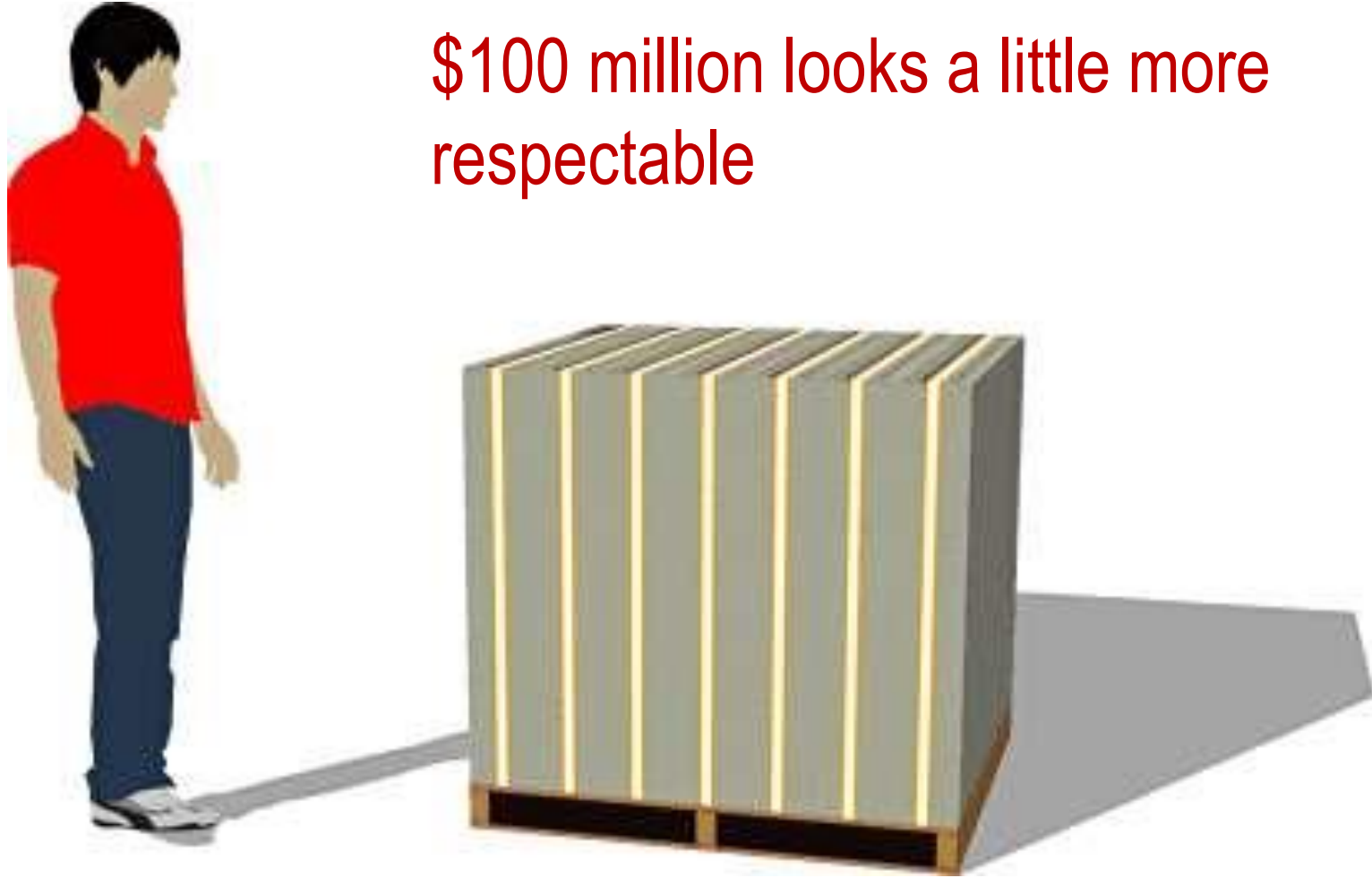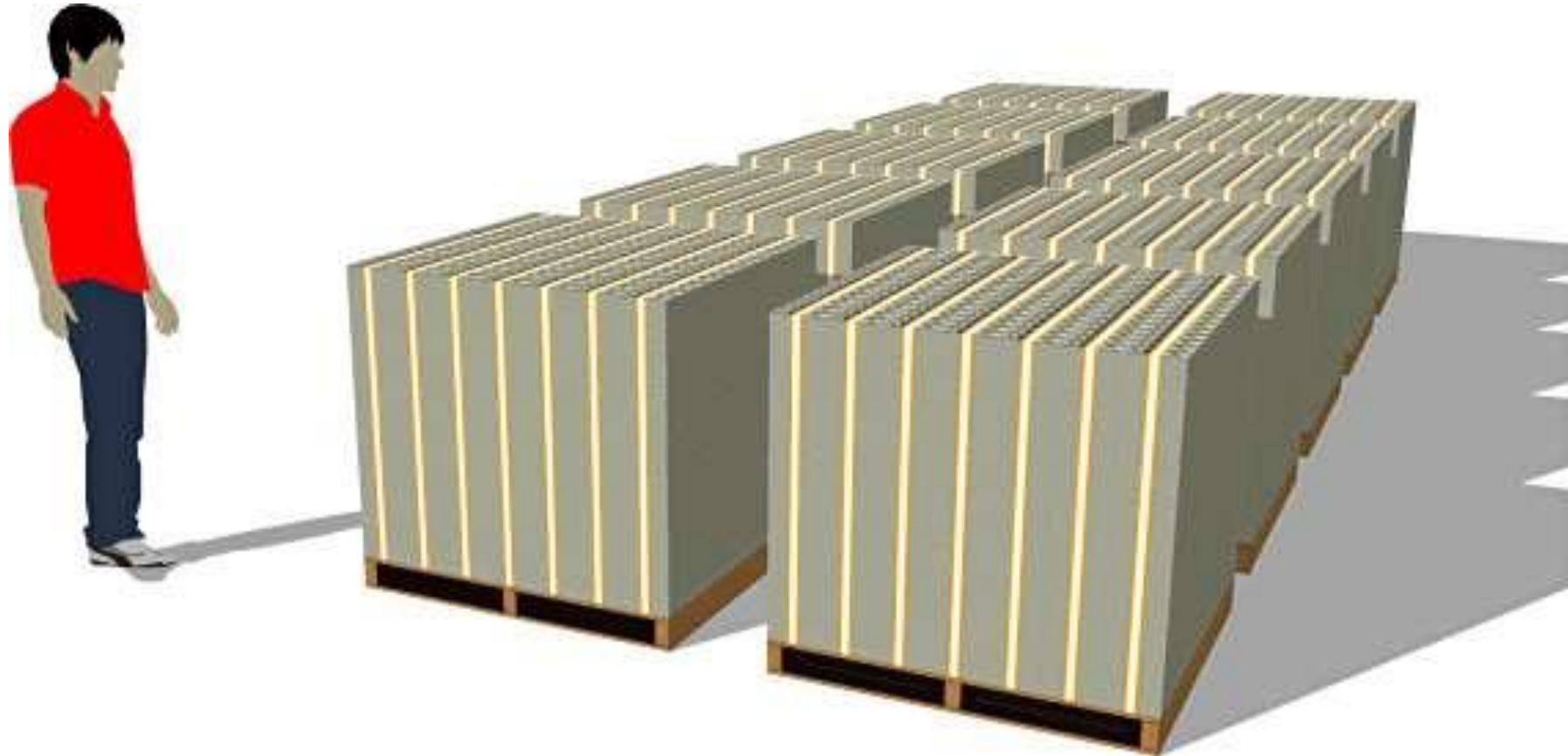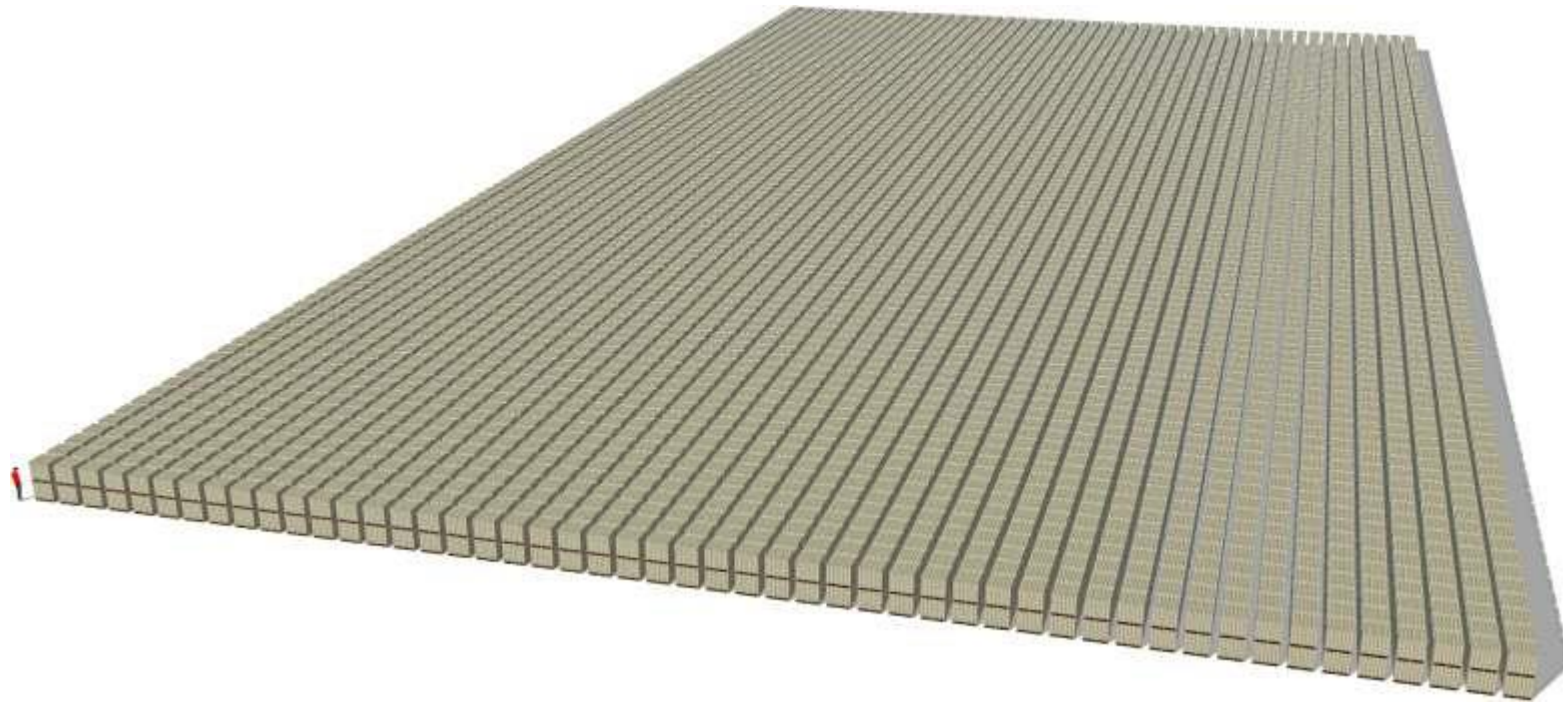
$1 BILLION dollars

Ladies and gentlemen... I
give you $1 trillion dollars...

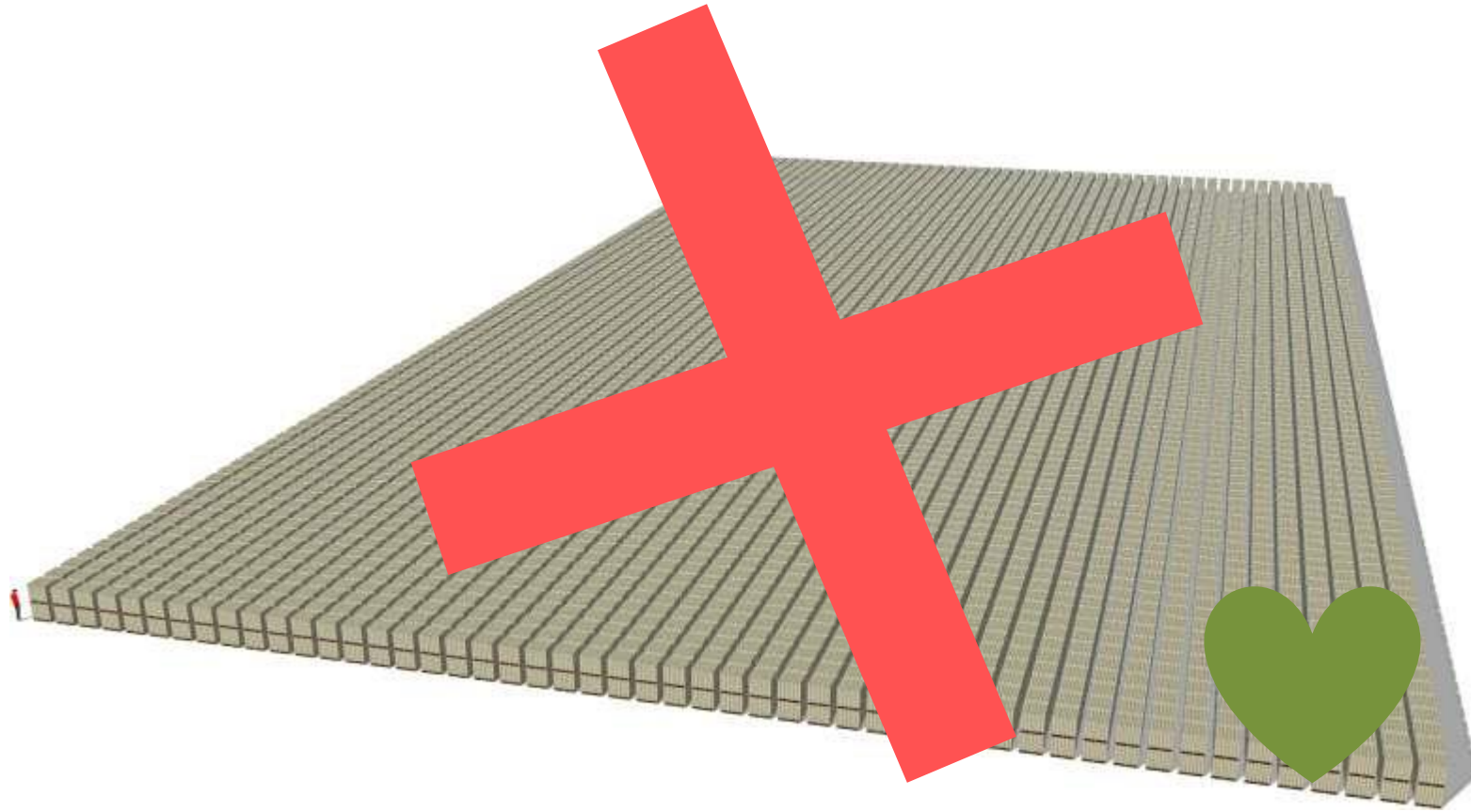# My humble opinion:

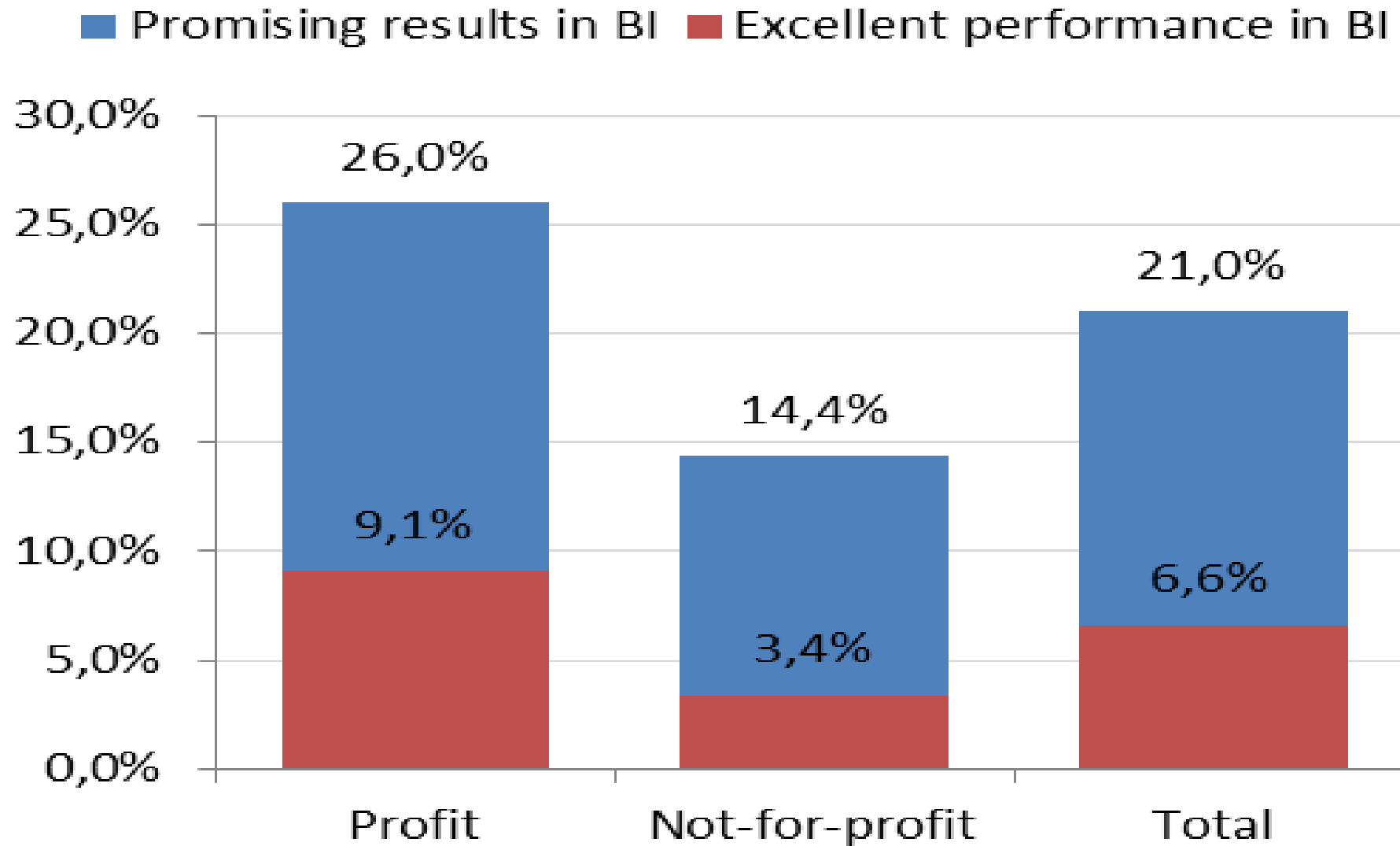## Big Data equals Big Money!

One trillion dollars

Ladies and gentlemen... 0,75 trillion dollars are going down the drain only in 2019...

Success and Business Intelligence & Big Data (1)

Big Data Investments to Remain Strong

IDG Enterprise
An IDG Communications Company

Currently Investing

	Plans 1-3 Years			
Storage 55%	49%	21%	6%	24%
Servers 53%	47%	21%	8%	24%
Cloud Infrastructure 26%	44%	25%	1%	30%
Discovery & Analytics 29%	43%	26%	0%	31%
Applications 39%	42%	30%	2%	26%
Business consulting, business process outsourcing, IT project-based services, network consulting and integration services 30%	38%	27%	4%	30%
Information Management 35%	35%	33%	2%	30%
Networking 45%	35%	33%	3%	29%
Storage and Security Services 28%	34%	30%	2%	34%
Training Services Related to Big Data Implementations 25%	31%	29%	3%	36%
Software and Hardware Support 33%	26%	37%	4%	33%
IT Outsourcing 26%	24%	38%	2%	36%

- Plan to increase investments or will invest over the next 1-3 years
- No change to investments over the next 1-3 years
- Plan to decrease investments over the next 1-3 years
- Not sure

Q. In which of the following areas is your organization investing currently to fully leverage big data opportunities, and what are your organization's investment plans for the following areas over the next 1-3 years? BASE: Plans to deploy/implement big data projects.

· METHODOLOGY   · **RESULTS**   · CONCLUSION   · DEMOGRAPHICS

17

COMPUTERWORLD   InfoWorld   NETWORKWORLD   CIO   DEMO   CSO   CIO Executive Council   (IT)WORLD   CFOworld   CITE WORLD
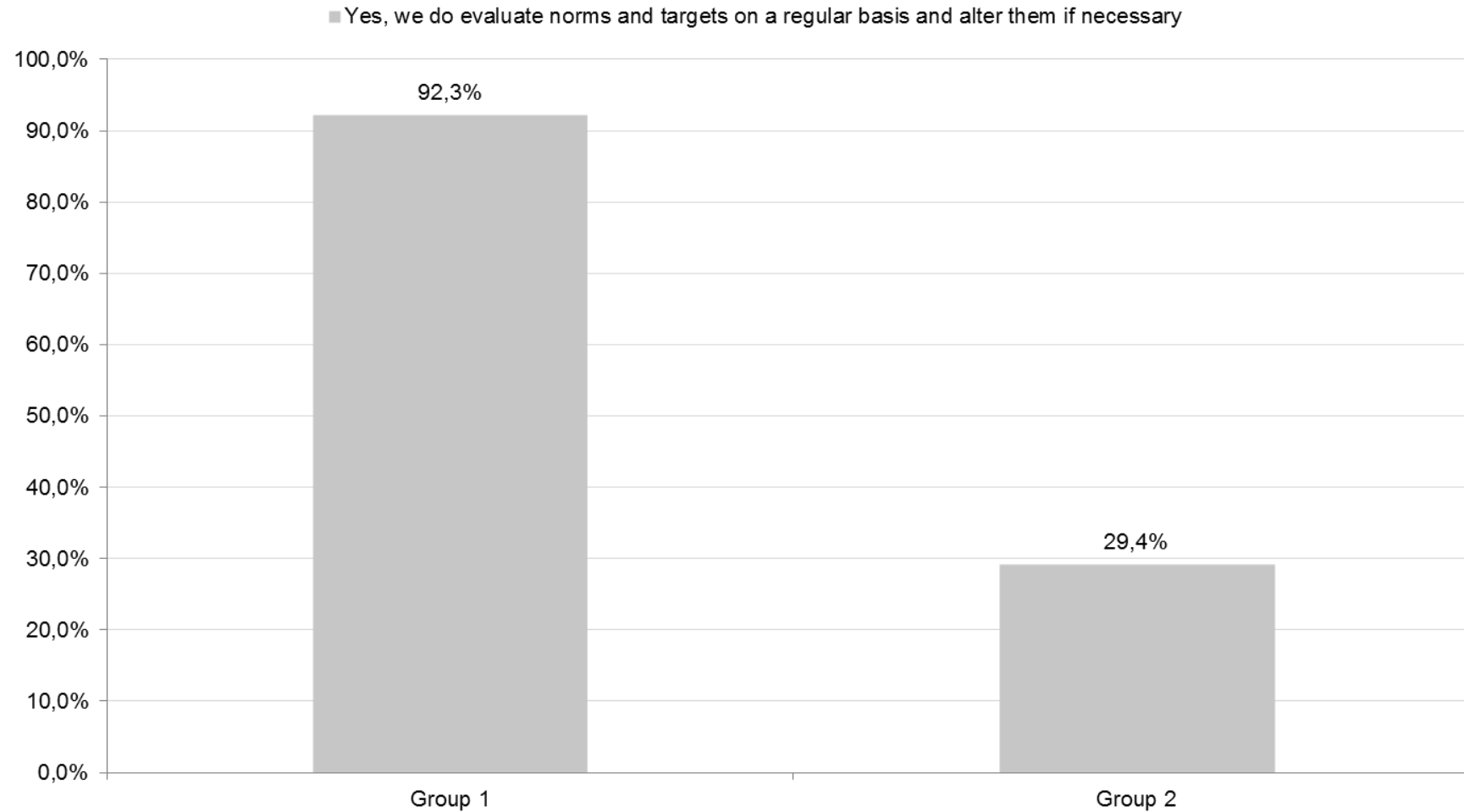
How to turn your data into dollars

Survey

▸ **Dutch study among 389 organizations**

▸ **Looking for the most critical business intelligence success factors – two groups: best performers (group 1) versus bad & average performers (group 2)**

▸ **Questionnaire with 45 questions measuring almost 80 factors regarding the intelligence of businesses and not for profit organizations**

RSM *Erasmus*
ERASMUS
UNIVERSITY

Evaluating norms and targets regularly

■ Yes, we do evaluate norms and targets on a regular basis and alter them if necessary

Use information consequently for analysis and action

■ We use information consequently for analysis and action

84,6% (Group 1)	**31,5%** (Group 2)
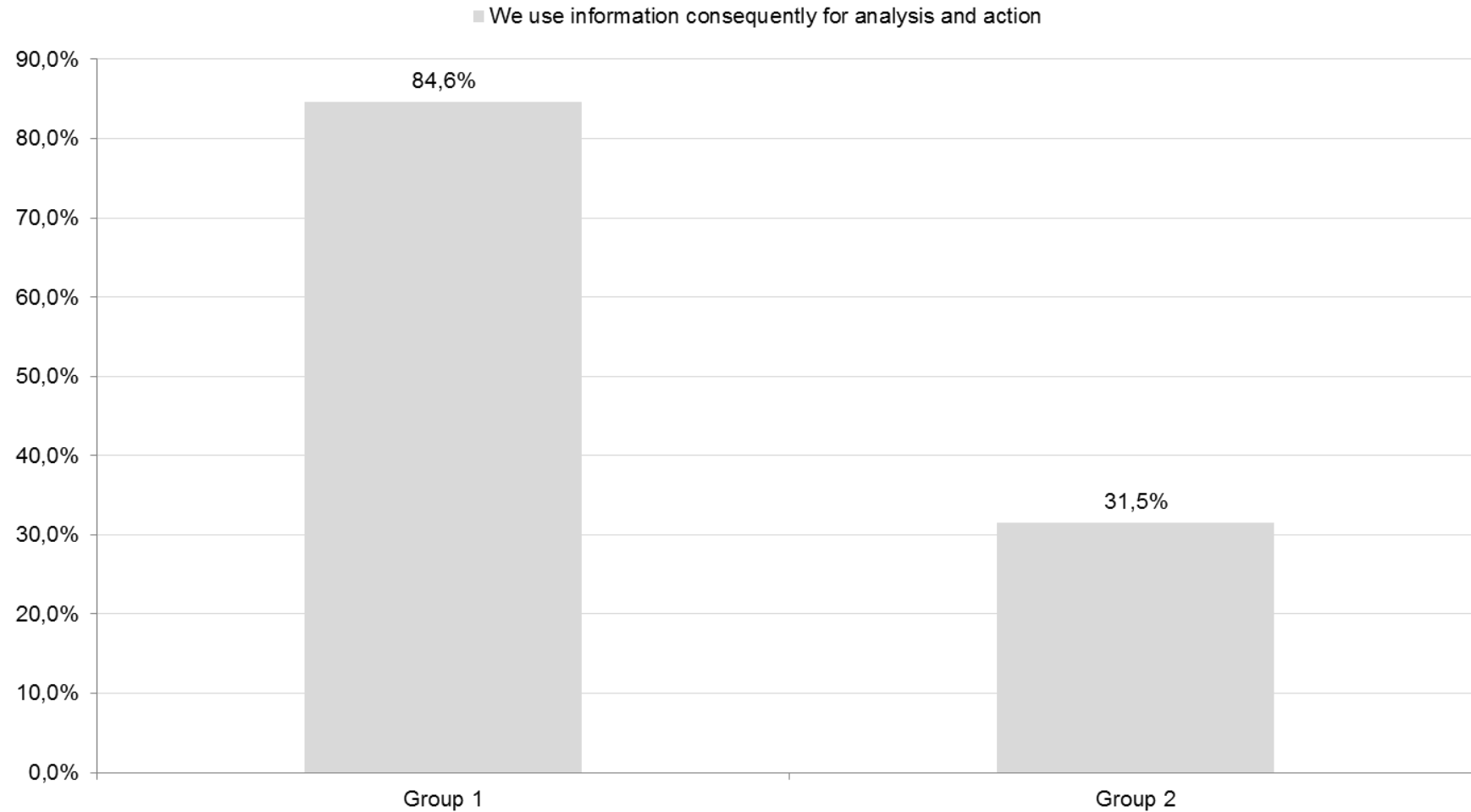
Discuss figures and both positive and negative results

■ We discuss the figures and address the positive as well as negative performance of each other
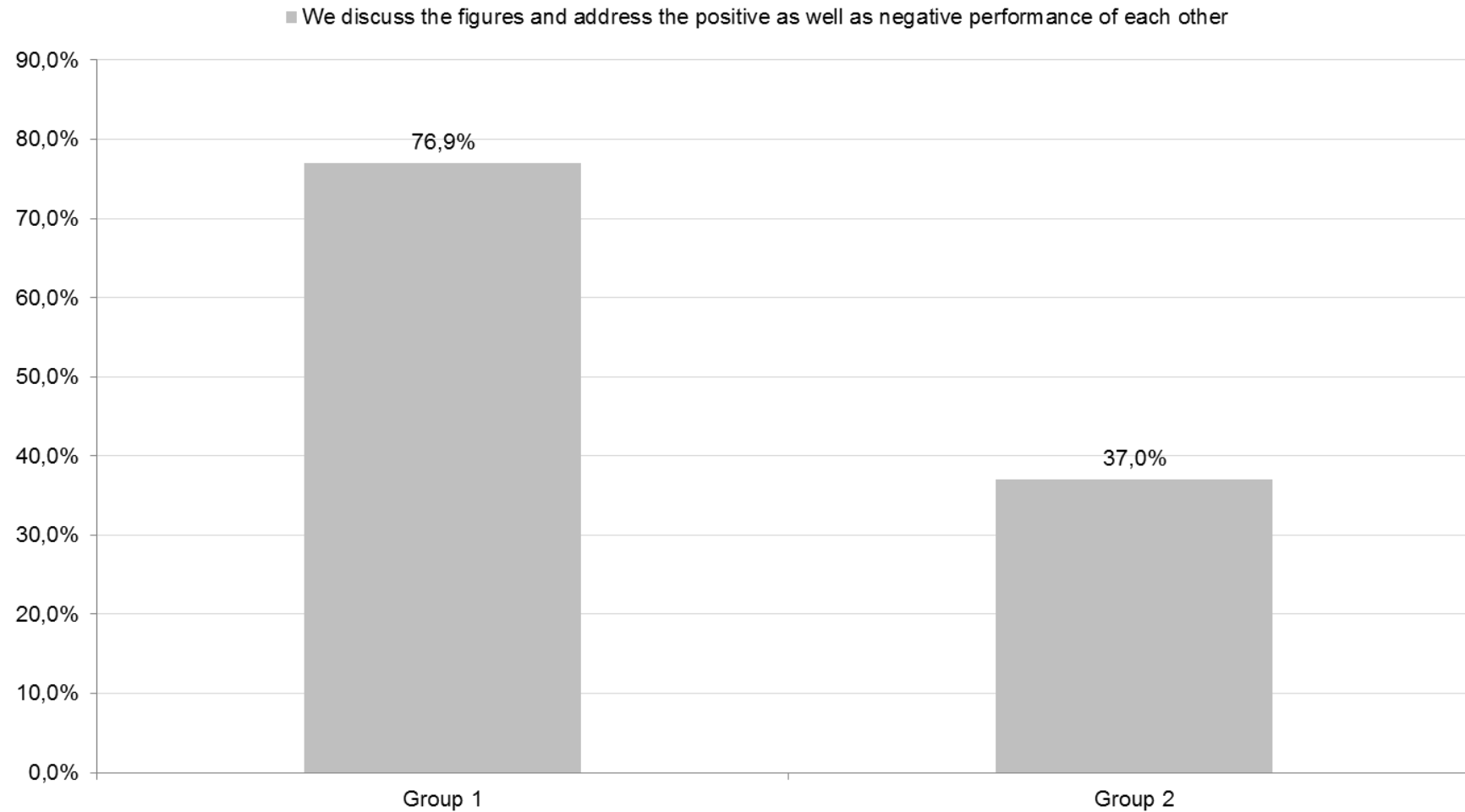
Plan do check act – the holy grail of BI

Evaluate and adjust norms and targets on a regular basis

Set norms and targets

Check performance and discuss negative & positive results

Use information consistently for analsyis and action

ACT

PLAN

CHECK

DO

Lock

Continues improvement

Use information for improvement & innovation

Use information consistently for analsyis and action

Share information with customers and suppliers

Data warehouse

Use management models to develop the organization (balanced scorecard, INK, and so forth)

Check performance and discuss negative & positive results

Topmanagement involved

Evaluate and adjust norms and targets on a regular basis

One version of the truth

Focus on customer and process using CRM

Fit between information and organizational roles

OLAP

Use information purposefully for innovation

Management stimulates purposefully innovation

Competitive Intelligence

Reward everyone for better performance

Technology makes BI efficient; the business users effective.

Cristiano Ronaldo crashes his three day old Ferrari

Technology is not enough: you have to be able to drive!