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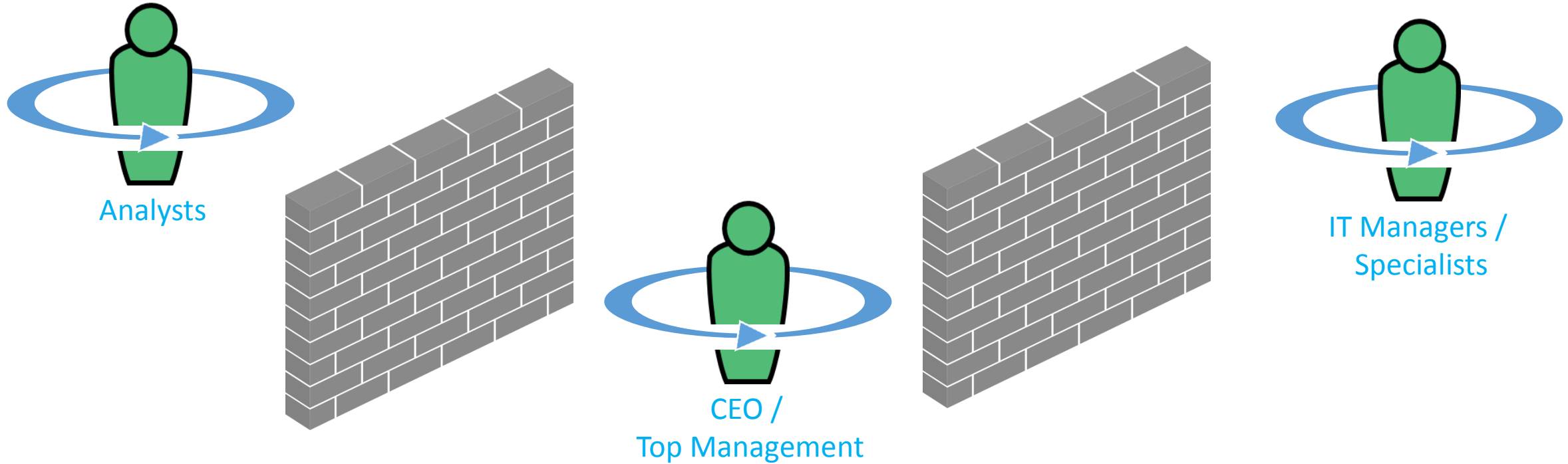
Partner



Managers and analysts: the Chinese wall and how to break it?

Siergiej Fuks, Co-founder, AMA Institute

Karol Przanowski, Co-founder, AMA Institute



Contemporary competition environment requires to abandon some management theories and business practices

Financial losses that are caused by poor customer service

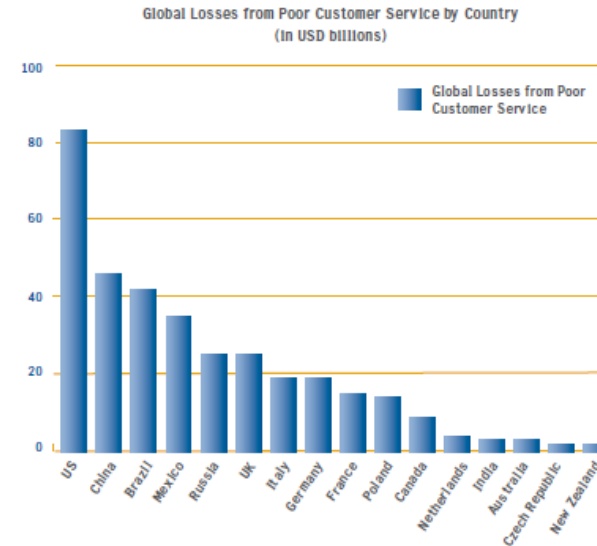


World - over

300 billion \$

Poland - over

20 billion \$



- Competitive environment is very dynamic
- A lot of previous competitive advantages will be lost in the near future
- The way an organization service a customer becomes one of the most long lasting and unique competitive advantage that an organization can build

Fighting silos is on CEO radar...

- Overcome silos and organizational structure ineffectiveness
- *Becoming agile*

14%

believe their organizations are ready for a change

21%

believe they have expertise to build cross-functional teams

12%

understand, how their teams work together

Failers...

!

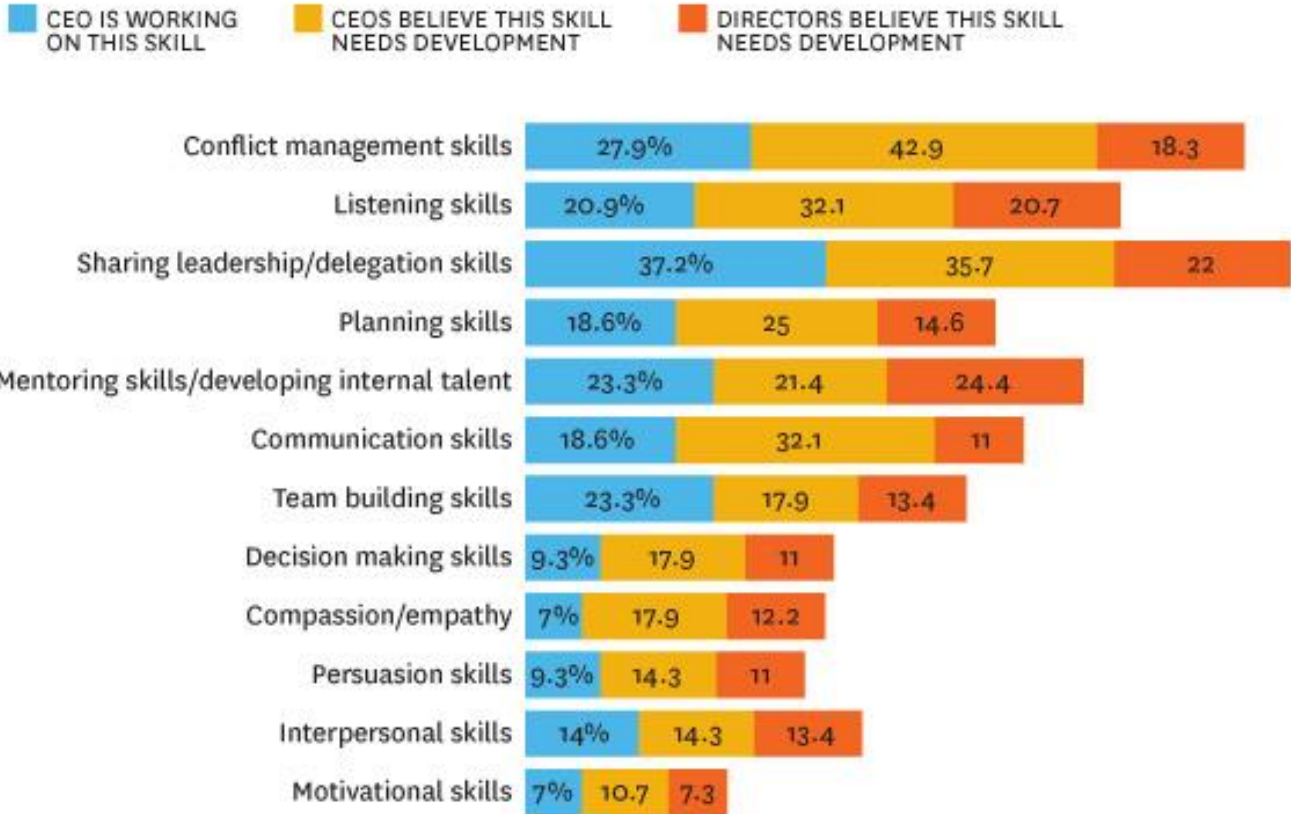
17%

Fluctuation

Corporate experience - career success:

skills' toolkit

WHAT AREAS ARE CEOS GETTING COACHING IN?
The priorities of CEOs and boards often differ.



Conflict Management

Team building skills

Motivation, compassion, persuasion

SOURCE 2013 EXECUTIVE COACHING SURVEY, STANFORD UNIVERSITY AND THE MILES GROUP

HBR.ORG

Technical skills

Analytics

Computer Science

Education

Python coding

SAS / R

Hadoop platform

SQL database/coding

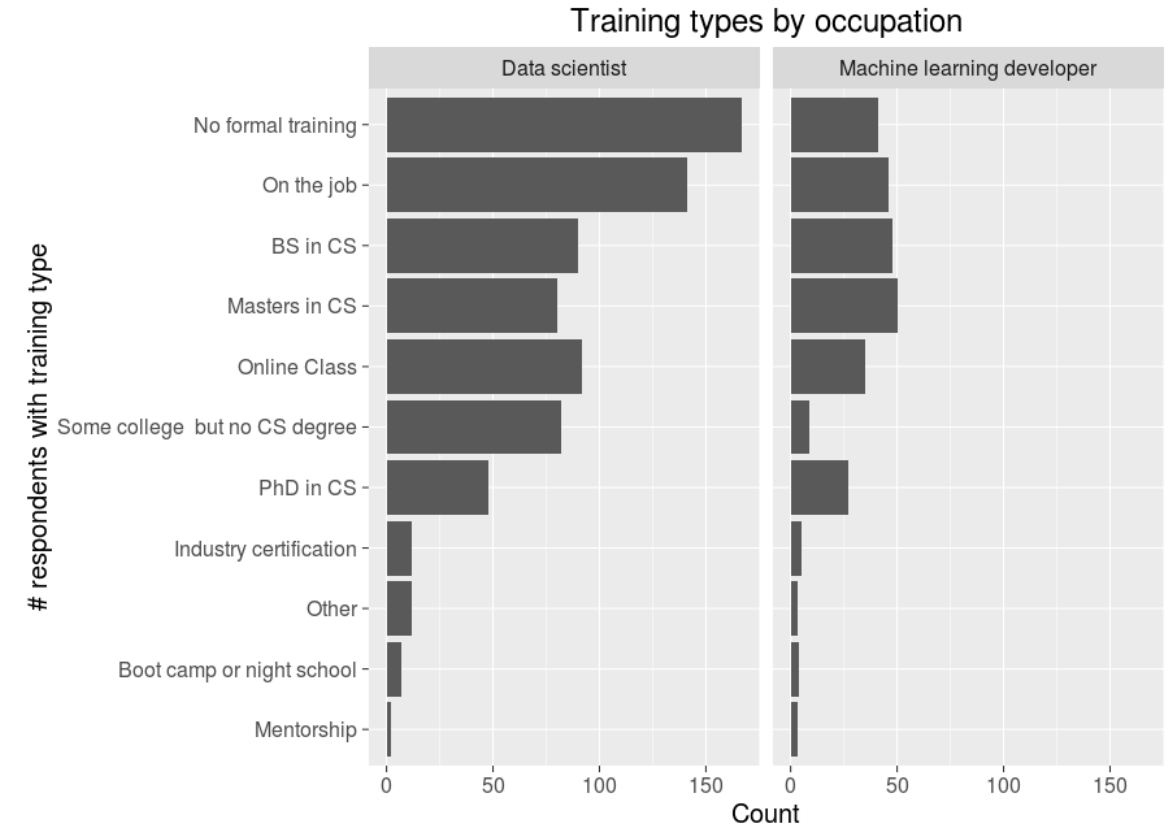
Unstructured data

Business skills

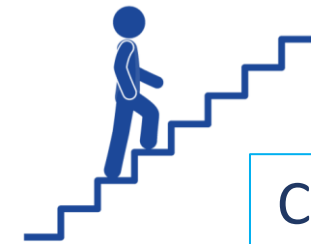
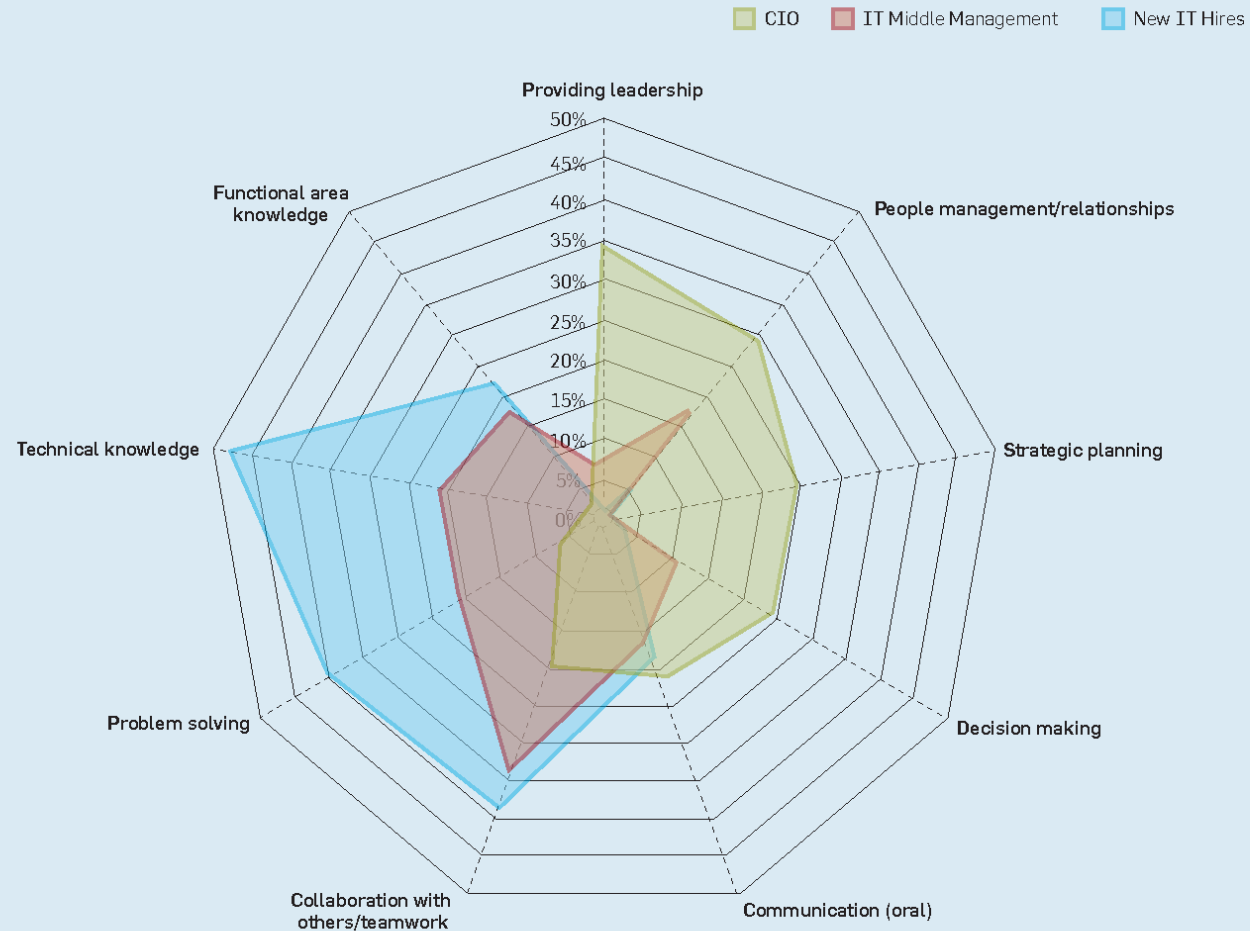
Intellectual curiosity

Business acumen

Communication skills



Source: <https://www.kdnuggets.com/2016/05/10-must-have-skills-data-scientist.html>



People management

Collaboration with others

Technical & problem solving

Source: Skills for success at different stages of an IT professional's career, ACM 2016

Assumptions:

- 20 000 of customers
- 348 campaigns yearly
- ~7 mln decisions – should an offer be sent or not?
- Cost of contact: 5
- Income if customer will buy: 800
- Average response rate: 0,5%



All offers are sent

- Income: 28 000 000
- Cost: 35 000 000
- Profit: -7 000 000

Unprofitable

Offer selection by expert knowledge

- Income: 15 895 139
- Cost: 12 250 000
- Profit: 3 645 139

Good enough profit



Financial results

There are positive results, but can we improve it?

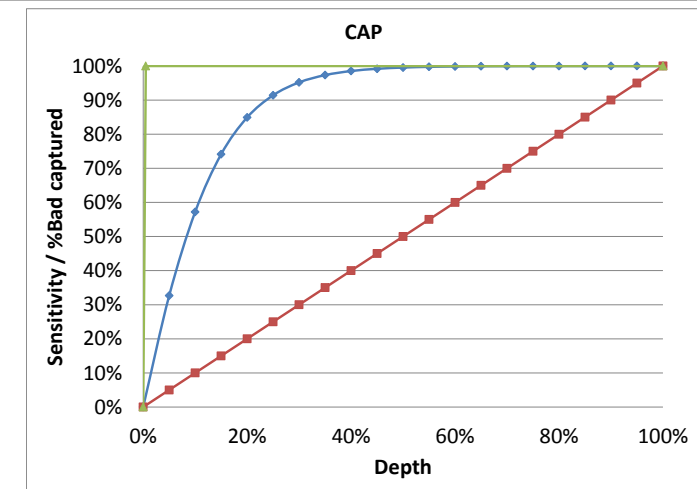
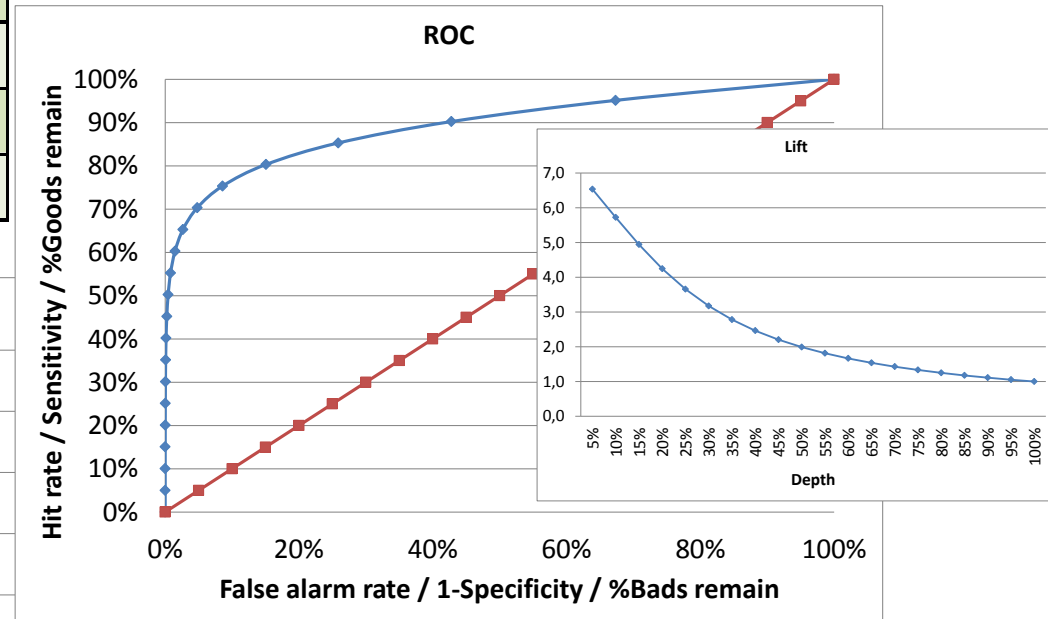
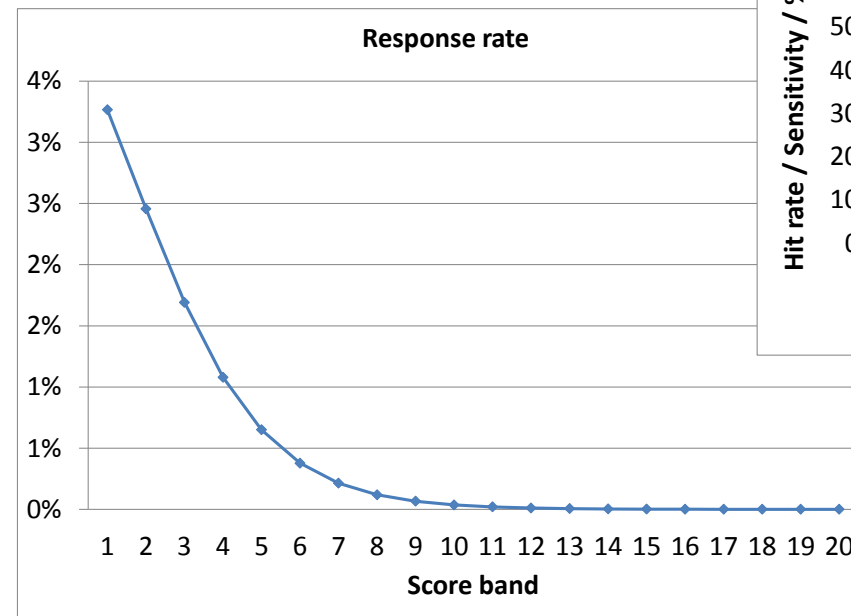
Example – analyst's view

Number of cases	7 000 000
Average income on responded case	800
Average cost of contact, offer, campaign	5
Gini global	78,36%

Global response rate	0,5%
Accepted response rate	1,83%
Acceptance rate	25,00%
Cummulative lift on accepted	3,66
Captured percent (Gains)	91,43%
Global cost	35 000 000
Global income	28 000 000
Global profit	-7 000 000

Accepted cost	8 750 000
Accepted income	25 599 340
Accepted profit	16 849 340
Number of offers	1 750 000
Number of expected responders	31 999

Number of campaigns	29
Number of months	12
Number of customers	20 115
Number of cases	7 000 000



Simple case study in Excel file:

<http://administracja.sgh.waw.pl/pl/OW/publikacje/Strony/2015.aspx>

Model_A – basic data

- Income: 21 531 163
- Cost: 12 250 000
- Profit: 9 281 163

More than 5,5 mln profit uplift vs expert rules

Model_B – specific data, enhanced and unique customer characteristics

- Income: 25 599 340
- Cost: 8 750 000
- Profit: 16 849 340

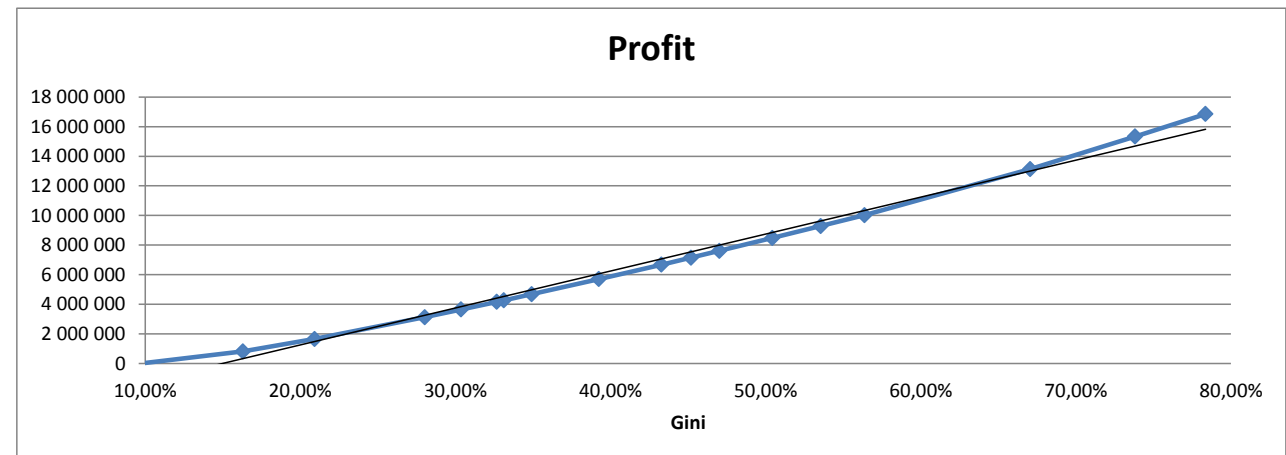
The best profit and the lowest cost



Financial results

Variable: Number of campain emails sent in the last 2 months			
Category number	Condition	Response rate (rr)	Percent of population (%POP)
1	$1 < \text{VAR_N_EMAIL_2M}$	5,69%	19,84%
2	$0 < \text{VAR_N_EMAIL_2M} \leq 1$	5,17%	18,84%
3	not missing(VAR_N_EMAIL_2M) and $\text{VAR_N_EMAIL_2M} \leq 0$	4,27%	61,31%
			100,00%

Delta Gini	Delta Profit
1%	272 569
5%	1 362 844
10%	2 725 687



Market observations - analytical tools' availability:

SME vs Big corporations

EXAMPLES OF DECISION CHALLENGES, WHERE ANALYTICS MAY HELP

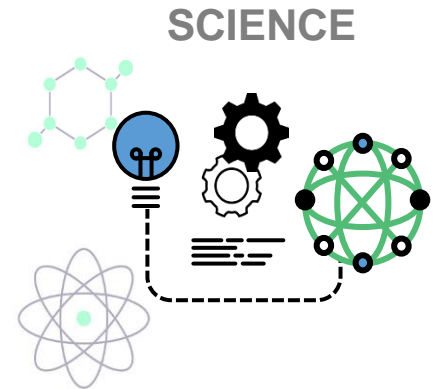
Will a customer buy a product? Will a customer prolong the contract?

Will a customer pay on time? Will there be delays in timely payments?

Is there a risk a customer will no longer require our service?

Will a customer make another transaction? Will the value of the transaction increase?

Is a customer prone to buy another product?



ANY INDUSTRY REQUIRES ADVANCED ANALYTICS

FINANCIAL

- Investment funds
- Insurance
- Credit / Leasing / Factoring
- Collection
- Anti-fraud management

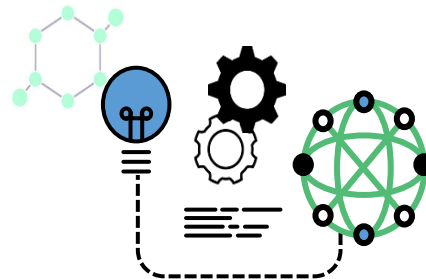
MARKETING

- Frequency and type of customer contact
- Loyalty programs
- Retention in subscription services
- Price promotions
- E-commerce

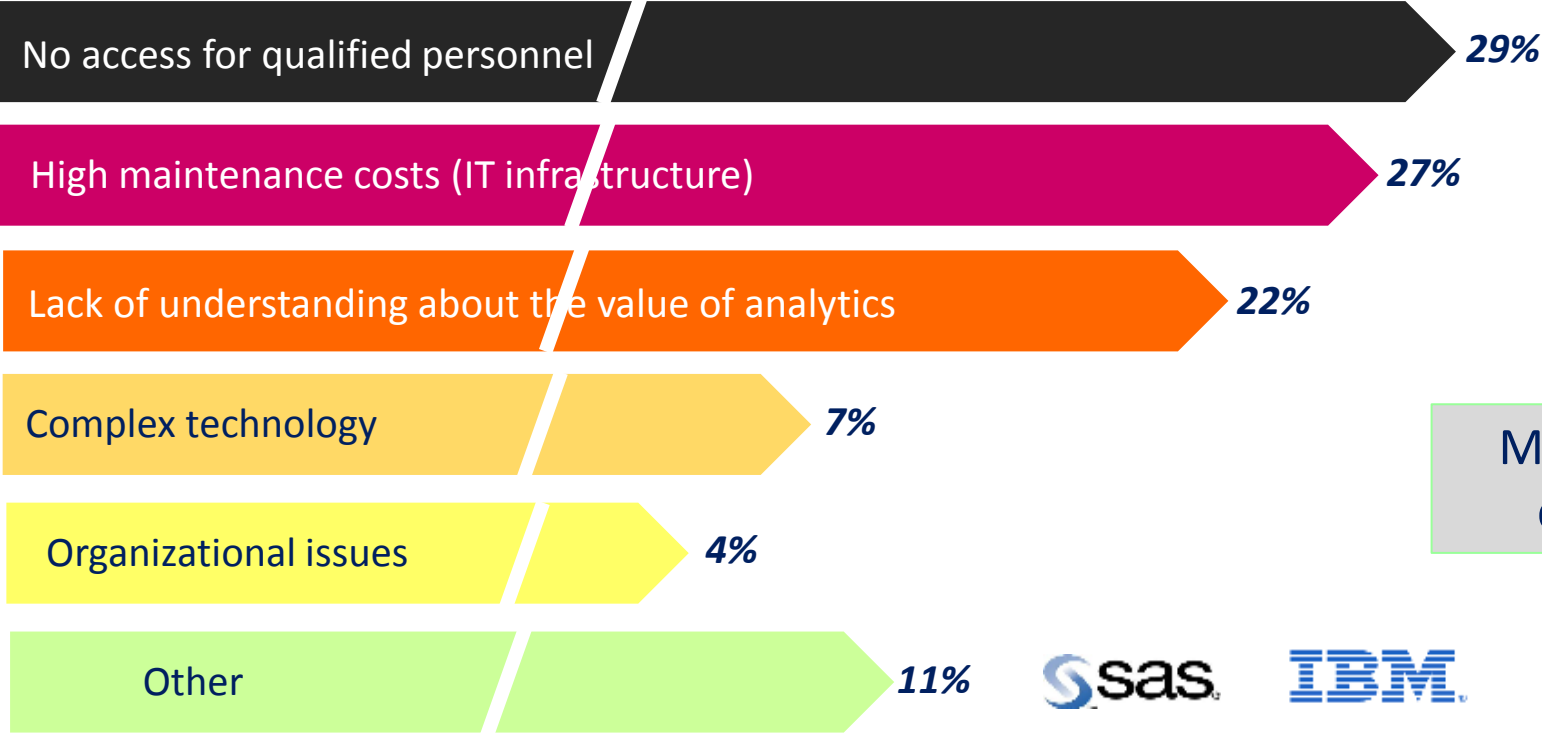
OTHER

- Shared Service Centers
- Customer service
- Mail-order companies
- Logistics
- ...and many other

SCIENCE

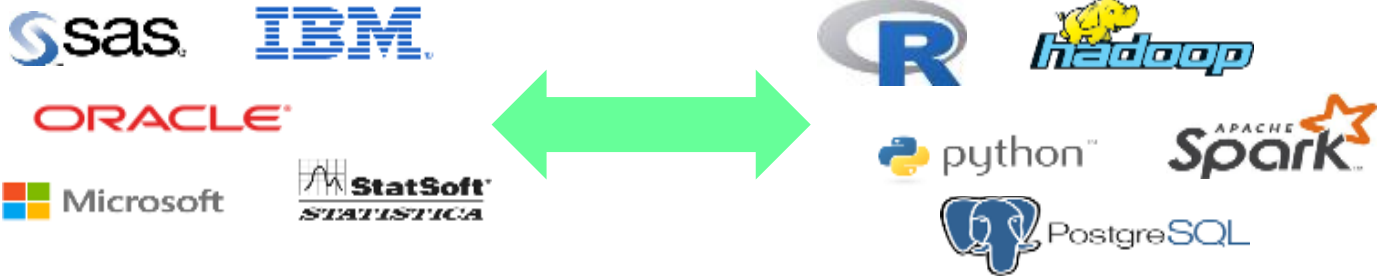


Barriers in implementing effective BI



Multiple available technologies make it difficult to make the optimal choice

Source: research on BIG DATA usage by enterprises in Poland



Case study 1:

Collection industry

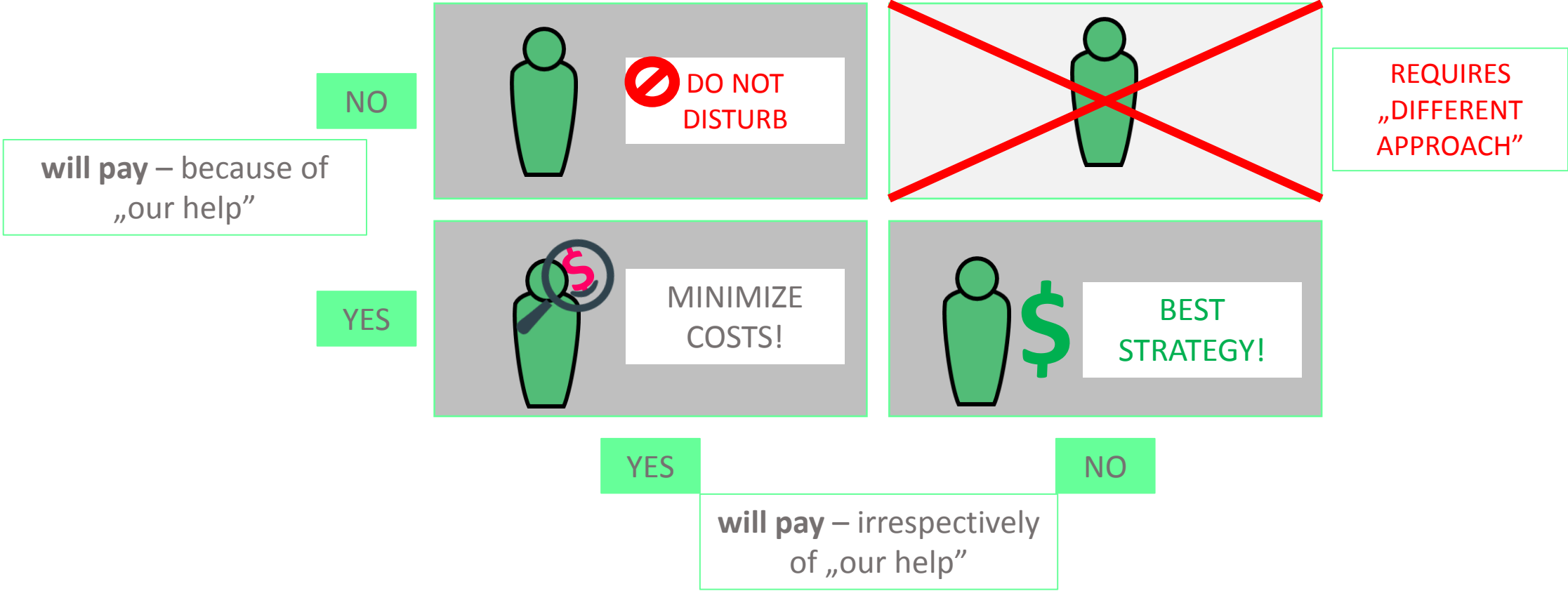
EXPERT OPINION

- Different people have different opinions about the same phenomenon
- „We have hired a great expert, so it will be better now...”
- „I progressed to the top management position, so I have a good feeling what works and what does not...”
- „It seems to me, it will not work...”
- „If we send more letters to our customers then the conversion rate will increase and we will have a better financial results...”

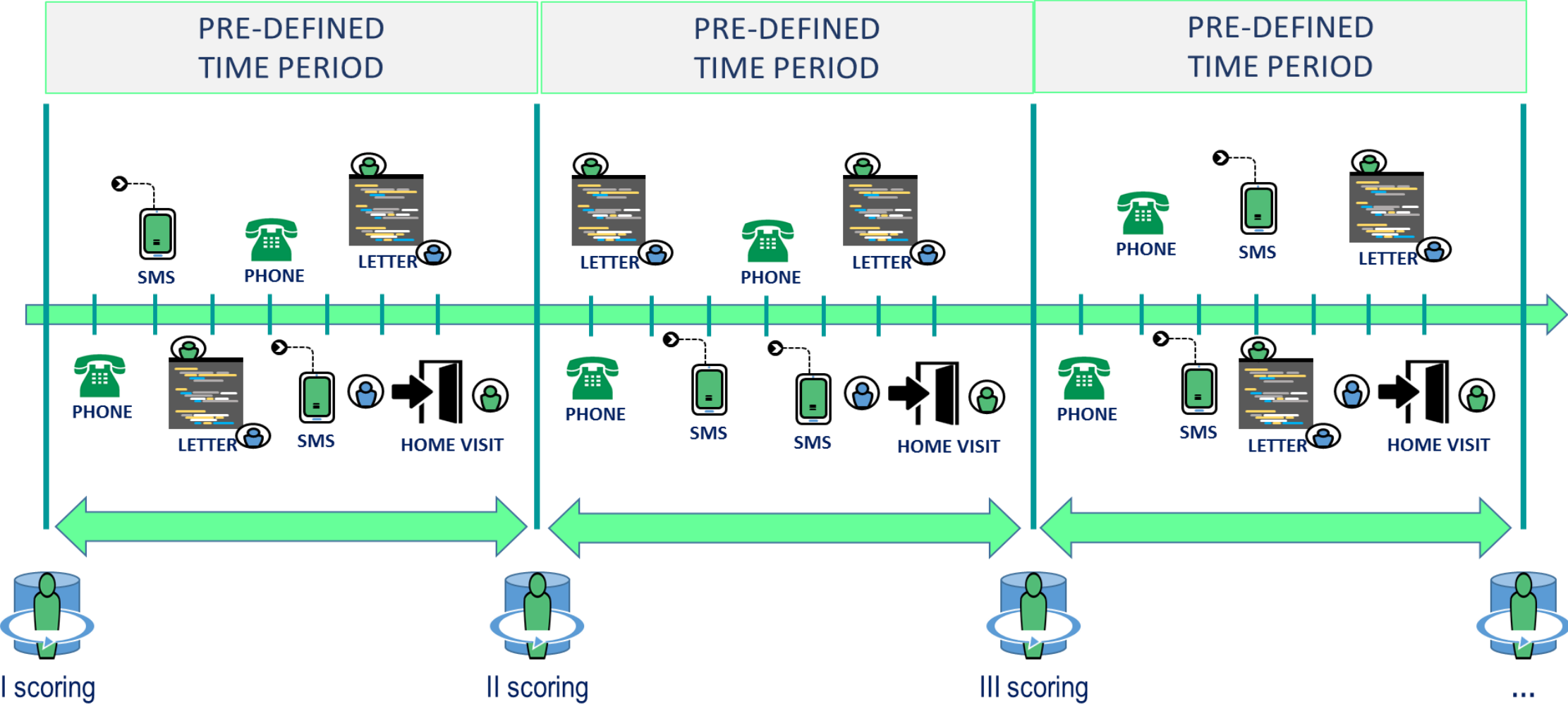
DATA DRIVEN DECISION MAKING

- „A letter of such strength increases the probability of payment by 15%...”
- „If we make 2 times more phone calls, then the probability of payment increases just 2%...”
- „45% of customers does not wish to be contacted in the first 30 days...”
- „We need to enrich customer data, because the probability of successful contact is only 5%...”

Segments



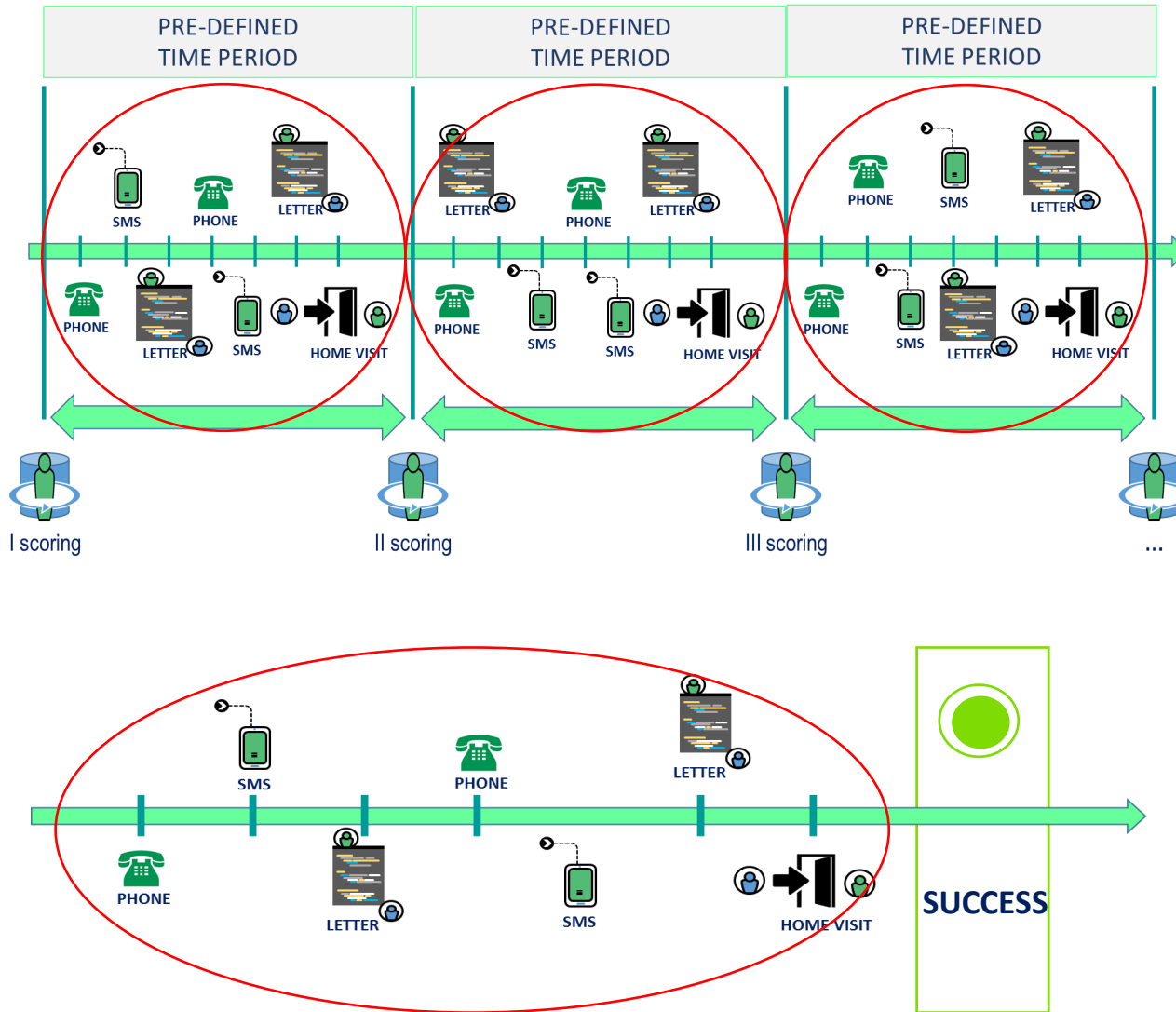
Segmentation based on scoring models should be regularly performed



- Debtors' economic situation may have changed
- Collection company may have influenced a change in debtors' behavior

Scoring model needs to be re-run regularly to reflect debtors' behavior change

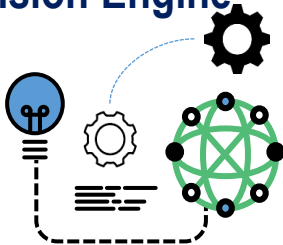
Optimal collection strategies (sequences of defined actions towards debtor) need to be identified



- Define the most optimal sequence of actions that need to be applied towards debtors
- Sequence of optimal actions towards a debtor may be different depending on each particular debtor's segment (based on scoring model)
- Historical data analysis should show the optimal sequence of actions towards a debtor: higher probability of *SUCCESS*

Markov model / Shapley's methodology

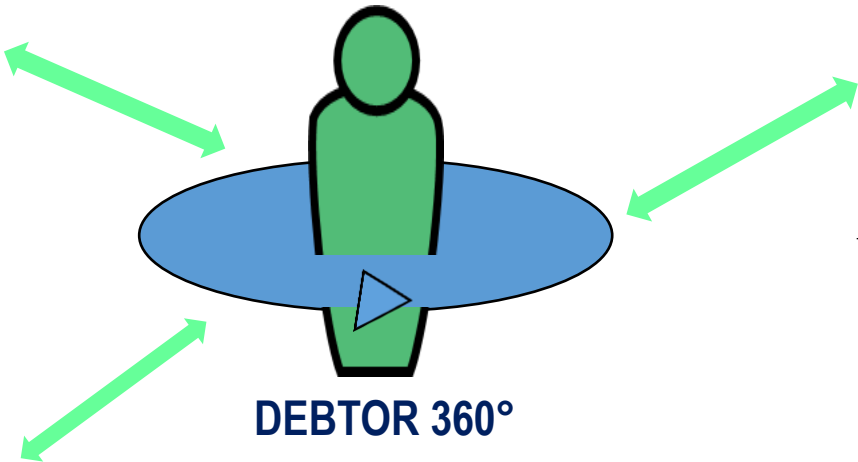
Decision Engine



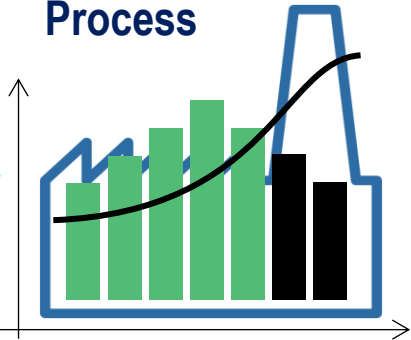
- Governs the execution of respective collection strategies for each debtor's case and each debtors' segment
- Monitors the process of assigning actions towards debtors

One source of decisions making

ABT = Analytical Base Table



Process



- Defined and implemented to reflect respective collection strategies
- All implemented processes are tediously monitored

Reports

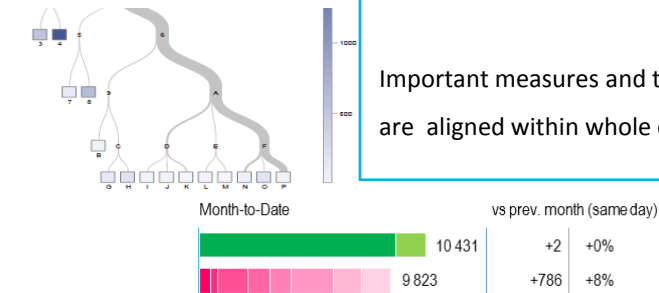


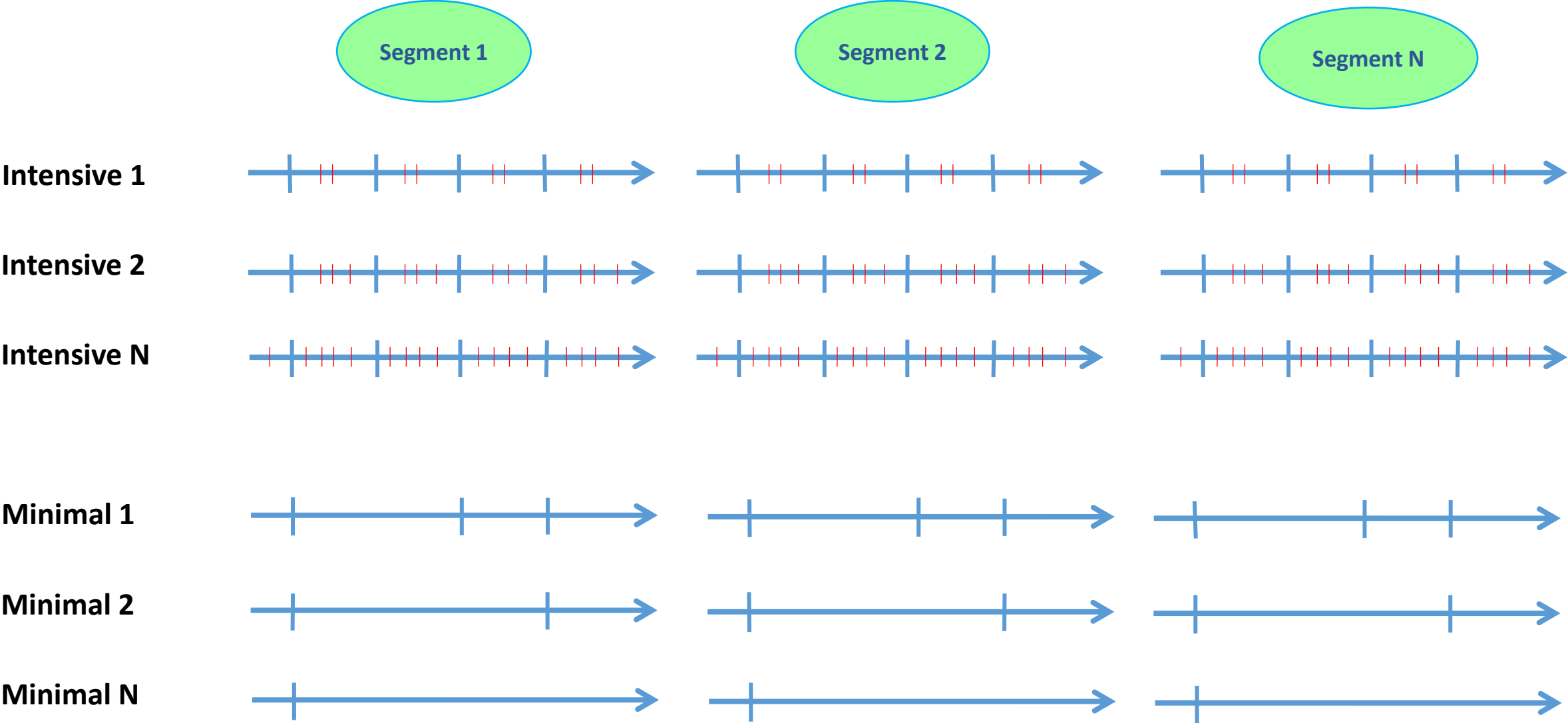
- Automatic reporting describes KPIs that reflect business and operational needs
- Important measures and their definitions are aligned within whole organization

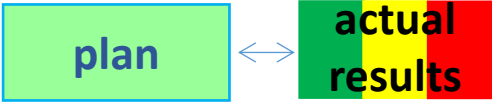
One source of information

One source of reporting

One place for back-testing

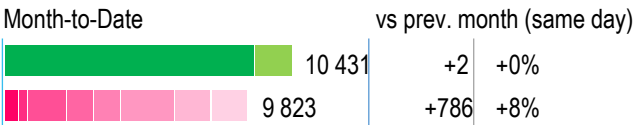






Do we need higher gross collection or lower expenses this month?*

Change needed?



- Results show good trend
- Gross collection levels exceed the expected forecast

minimal strategy



- Gross collection levels show moderately lower results than required financial plan
- Current collection strategies may not improve the situation

intensive 1 strategy



- Gross collection levels show unsatisfactory results
- Company actions need to be remedied immediately

intensive 2 strategy



MON	TUE	WED	THU	FRI	SAT	SUN
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31				

**time horizon depends on business needs*

EXPERT OPINION

- Different people have different opinions about the same phenomenon
- „We have hire a great expert so it will be better now...”
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Case study 2:

Transportation industry

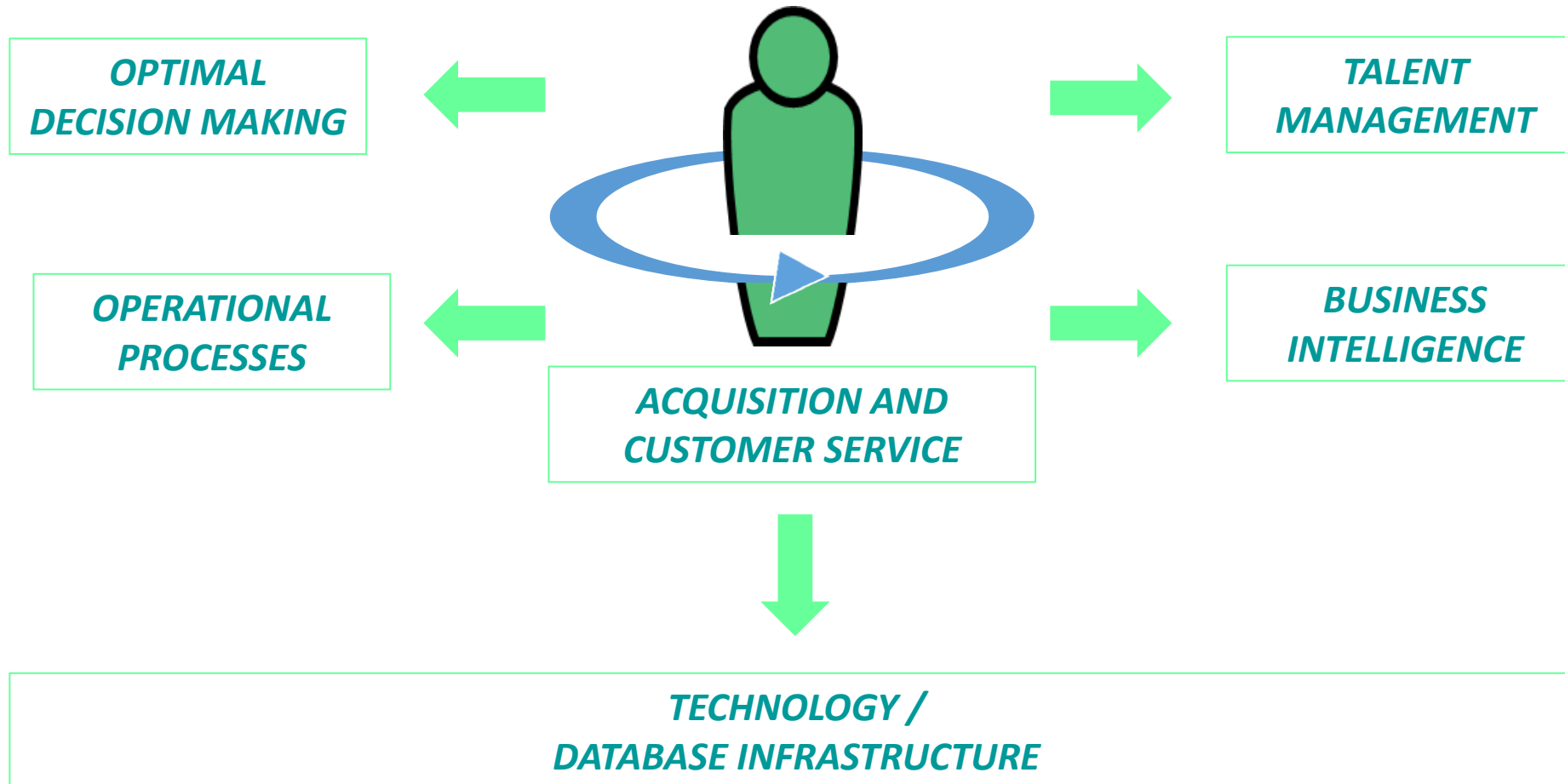
EXPERT OPINION

- „I have many years of work experience in transportation industry...”
- „I know my customers and no one else knows better than I do...”
- „I think the price for this root is acceptable...”
- „I think the number of cars in our own fleet is optimal...”
- „I think our drivers do not optimally drive...”

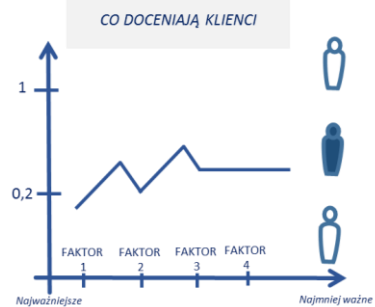
DATA DRIVEN DECISION MAKING

- „I know what roots were not profitable...”
- „I know what are the main determinants of roots' / orders profitability...”
- „We never undertake the unprofitable order...”
- „We identified the determinants that signal us when to increase or decrease our fleet...”
- „I know the driving style of car drivers, who optimize the fuel costs...”

Competitive advantage



Target groups/ defining the needs/ values' map



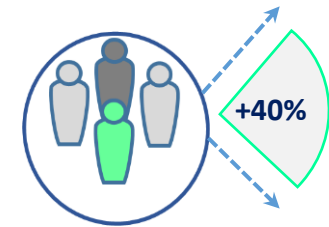
- Who are my customers?
- Who we would like to work for?
- What are the main needs?
- Do our services meet those needs?
- How do we stand against competition?

Acquisition model new customers



- A list of potential customers
- Sales pipe-line
- Price policy
- Dedicated resources
- Aligned incentive system

Share of wallet increase existing customers



- Segmentation
- Estimation: share of wallet
- Define service model
- Define price model
- Acquire new contracts

Managing roots

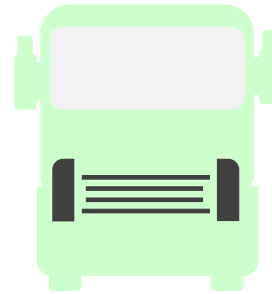
estimating profitability



- Estimating profitability/ the minimal acceptable prices
- Define rules for rejecting the orders
- Minimize opportunity costs
- Pro-active management of recurring business
- Quickness and repetitiveness of decision making process

Fleet model

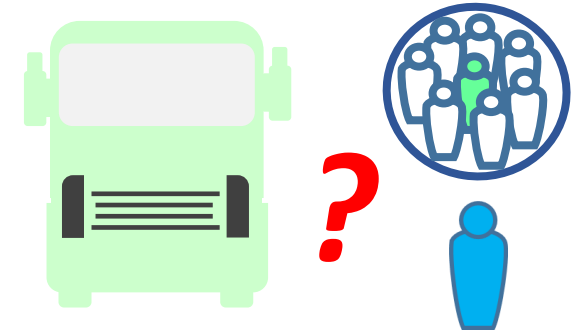
own/ outsourced



- Estimating supply (demand for transport services)
- Align capabilities with customers' demands
- Align orders with own / outsourcing fleets
- Costs optimization
- Rules for own fleet increase / decrease

Management model

car drivers / outsourcing



- Defining the optimal number of car drivers / outsourcing
- Segmenting car drivers / outsourcing companies
- Defining work standards
- Defining training programs
- Defining controlling mechanisms

EXPERT OPINION

- „I have many years of work experience in transportation industry...”
- „I know my customers and no one else knows better than I do...”
- „I think the price for this root is acceptable...”
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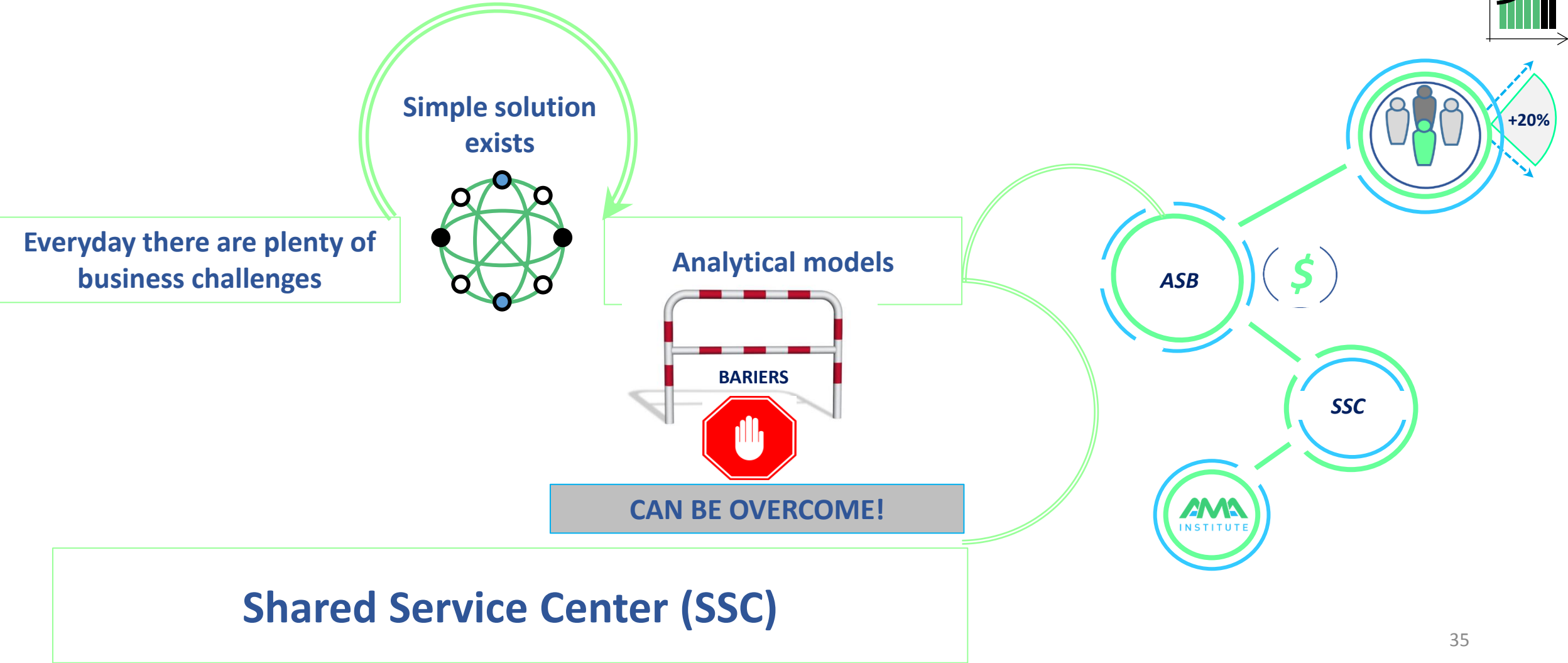
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Case study 3:

Shared Service Centers

ANALYTICS – CREATING VALUE FOR SSC CUSTOMERS



ASB

Methodology of PoC (proof of concept) presentation

- Quick implementation / agile approach

Credit scoring

- 12 steps based on real life business experience
- Automatic documentation in PDF

Implementation and testing

- Dedicated decision engine
- Automatic calculation of new variables
- Automatic reports

Additional business knowledge

- Every reports allows to distinguish the process gap and customer knowledge

Methodology of business process optimization

- Proper cut-off choice

Methodology of measuring the business process

- Stability / evolution in time (reports)



ASB

Low price

ASB consists of the following:

- Quick methodology of building ABT
- A lot of measures to choose variables (ex. delta Gini, Kullback-Leibler distance, information value, index stability)
- Testing variables' evolution in time
- Different categorization methodologies (ex. to force monotonic dependence)
- Automatic monitoring
- Automatic model documentation



Case study 4:

Payment providers industry

Which customer segments attend my sales shops?

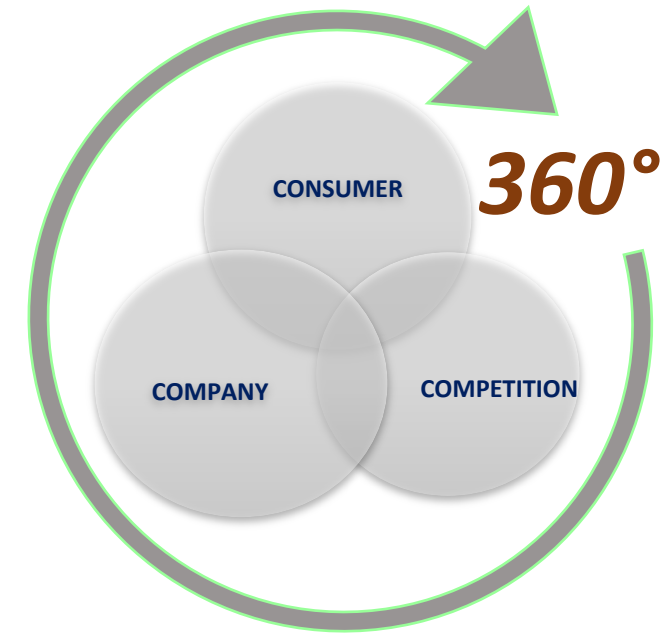
Which particular products require additional support?

Do my shops operate effectively and what should be done to increase sales?

How to attract new customers?

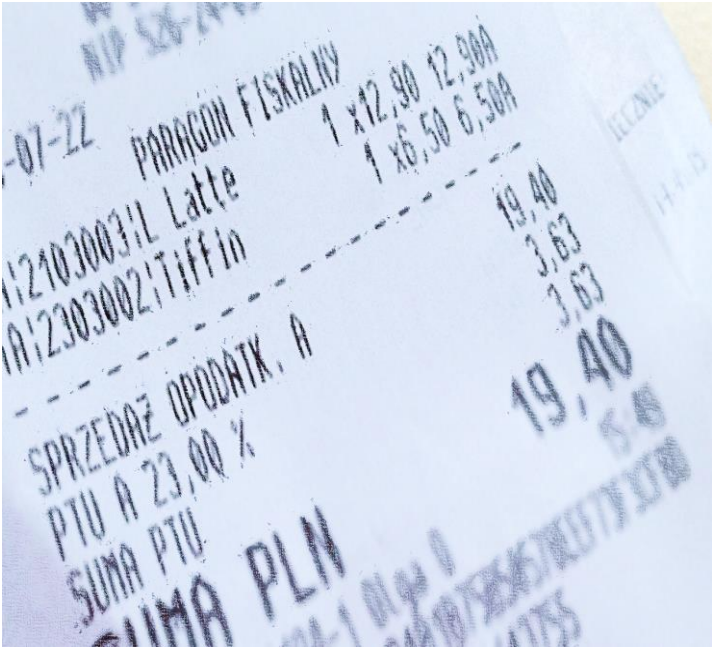
What marketing actions will produce the most effective results?

How do I stand vs competition?



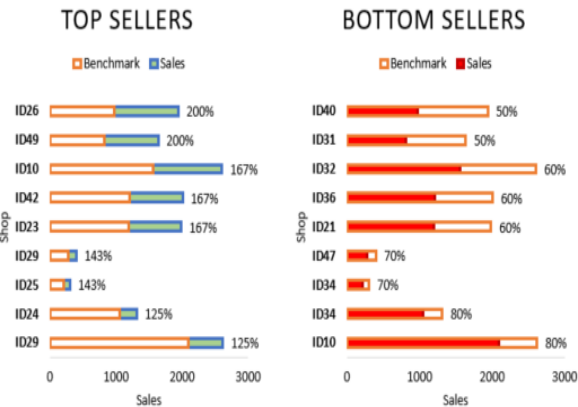
**...to address them one requires advanced analytics
and *Business Intelligence (BI)***

Cashier receipts data is rich of business information...



SHOP STATUS PANEL

Shop	Sales	Profit	Volume	Discounts	Avg price	Cost	Supplies
ID39						N/A	N/A
ID29						N/A	N/A
ID50						N/A	N/A
ID15						N/A	N/A
ID28						N/A	N/A
ID10						N/A	N/A
ID43						N/A	N/A
ID34						N/A	N/A
ID42						N/A	N/A
ID27						N/A	N/A
ID41						N/A	N/A
ID21						N/A	N/A
ID14						N/A	N/A
ID50						N/A	N/A
ID12						N/A	N/A
ID41						N/A	N/A
ID33						N/A	N/A
ID18						N/A	N/A
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ID34						N/A	N/A
ID42						N/A	N/A
ID27						N/A	N/A
ID41						N/A	N/A
ID21						N/A	N/A
ID14						N/A	N/A
ID50						N/A	N/A

Learnings

Data driven organizations may require to fully rethink organizational design and management structure / skills' requirements

Plenty of companies and industries may not be aware of true value of data usefulness to their business

In some industries, the way a company transforms a data into impeccable customer service will be the only possibility to build a long lasting competitive advantage

What steps could be taken?

Education

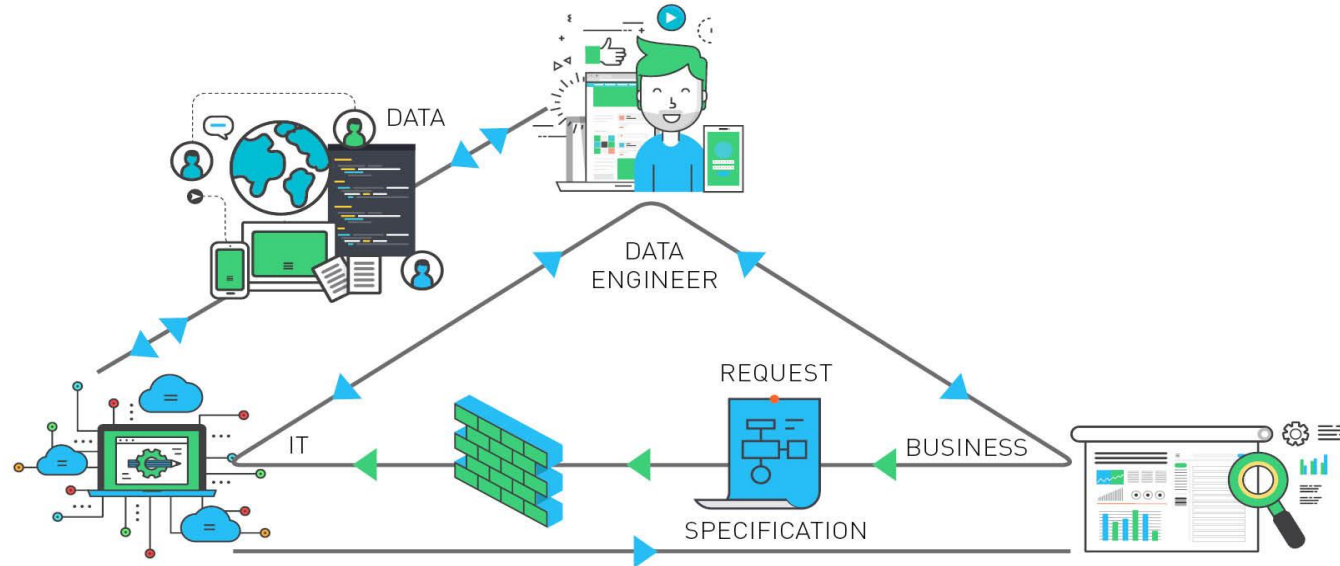
- Academia programs should have rich common curriculum for either IT, analysts or business studies

Organizational leadership

- Both experience (expert) and data usefulness knowledge should be critical for the next generation of leaders

Analytical software provider

- Commoditization of analytics will speed up the process of creating a new generation of Data Scientists / Engineers





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