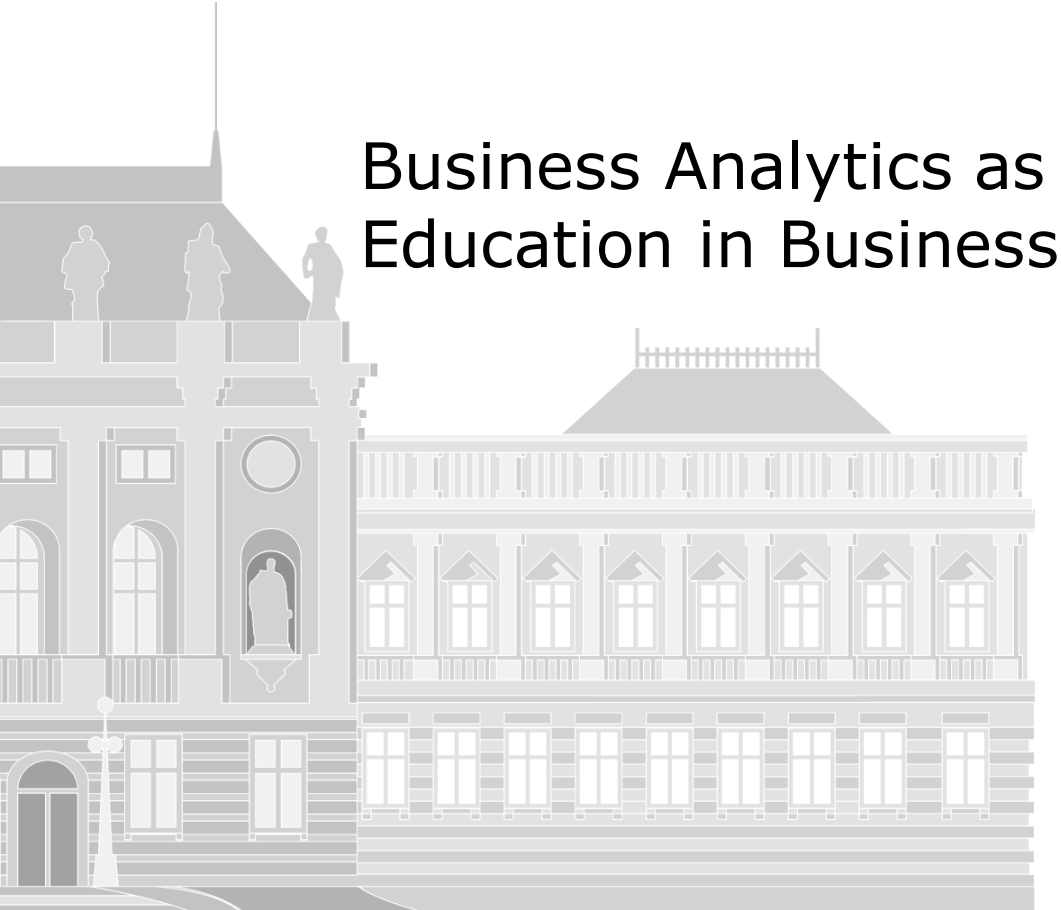
INSTITUT FÜR MARKETING

KARL-FRANZENS-UNIVERSITÄT GRAZ
UNIVERSITY OF GRAZ

UNI GRAZ



Business Analytics as Part of Marketing Education in Business Schools Settings

Stefan Thalmann
René Hubert Kerschbaumer
Thomas Foscht

Problem definition

- Big Data and Data Science are shaping our society, but degree programs in data analytics are focusing mostly on technical aspects.
- In business education, the number of courses covering practical application of data analytics remains rather small.

How can we integrate data science in marketing courses?

How far can we go?

How far can we get?

Seminar in Business-to-consumer Management

- master program in business studies
- small groups, approx. 10 students

Course objectives

- dealing critically with theoretical and empirical aspects of marketing research
- explaining and critically evaluating empirical methods of marketing- and customer behavior research,
- designing, carrying out and analyzing empirical studies as well as interpreting their results

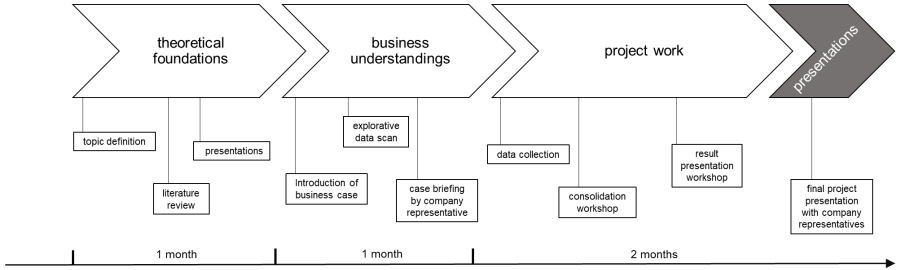
How to integrate Business Analytics

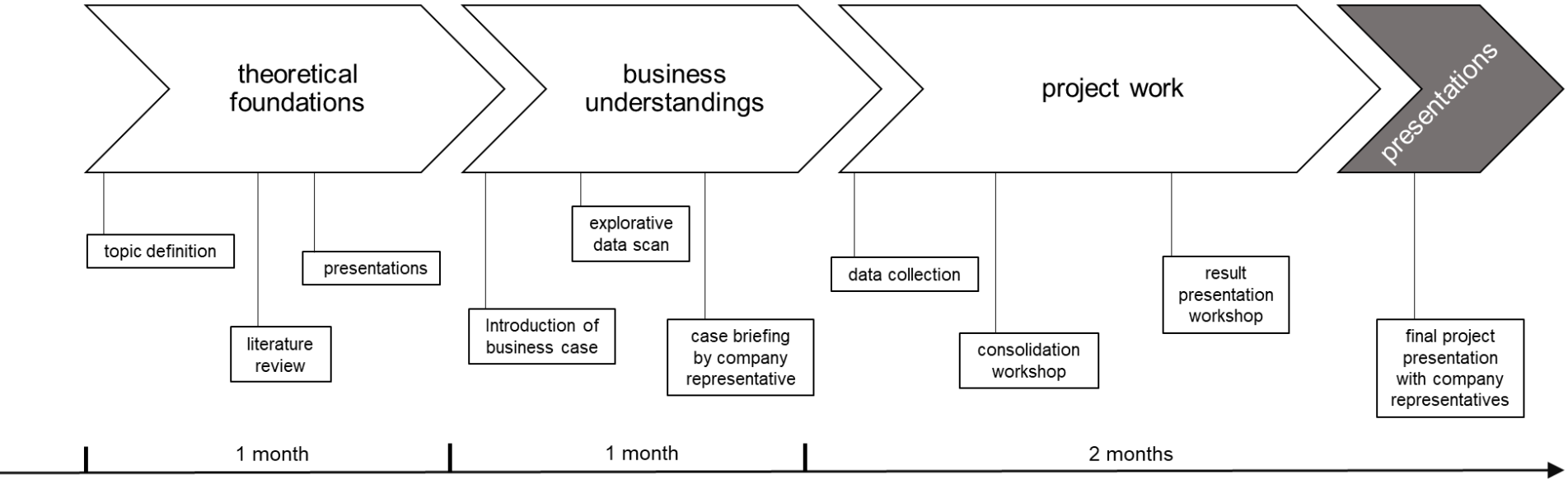
Goals

- combine already known marketing approaches with methods from business analytics
- apply web mining
- use web data

Organization

- Three groups
- Three phases

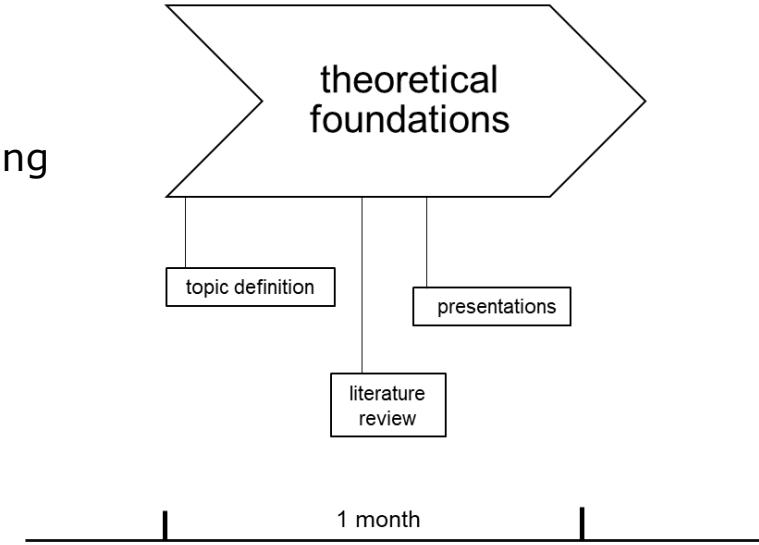



theoretical foundations
business understandings
project work
presentations
topic definition
literature review
presentations
Introduction of business case
explorative data scan
case briefing by company representative
data collection
consolidation workshop
result presentation workshop
final project presentation with company representatives
1 month
1 month
2 months

Phase one - theoretical foundations

marketing theory

1. Extraction of electronic word of mouth via web mining
2. Consumer segmentation via web mining
3. Predicting consumer behavior via web mining



Phase two - business understandings

Density and concentration meter: EasyDens

- determines extract content and sugar content of home-produced fruit juices
- determines alcohol content in spirits
- monitors the fermentation process of beer and wine
- Easy-to-use with smartphone app

Anton Paar

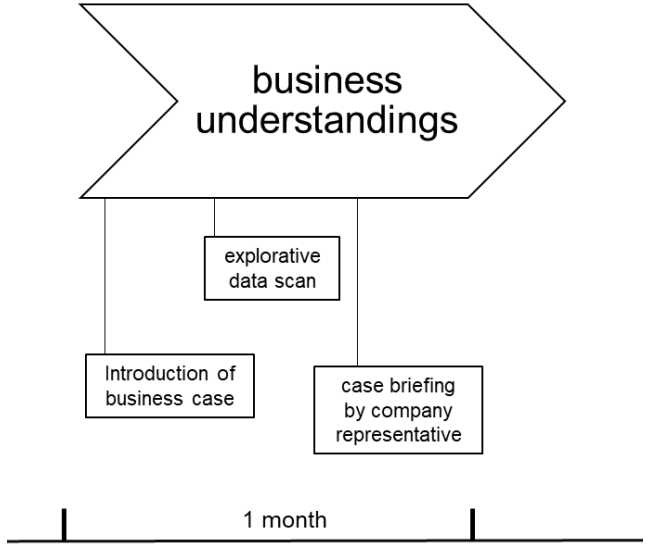
- Business-to-business supplier of measurement instruments
- 110 countries, 3100+ employees
- Net sales rev. € 309 million (2017)

- **EasyDens: first B2C product**

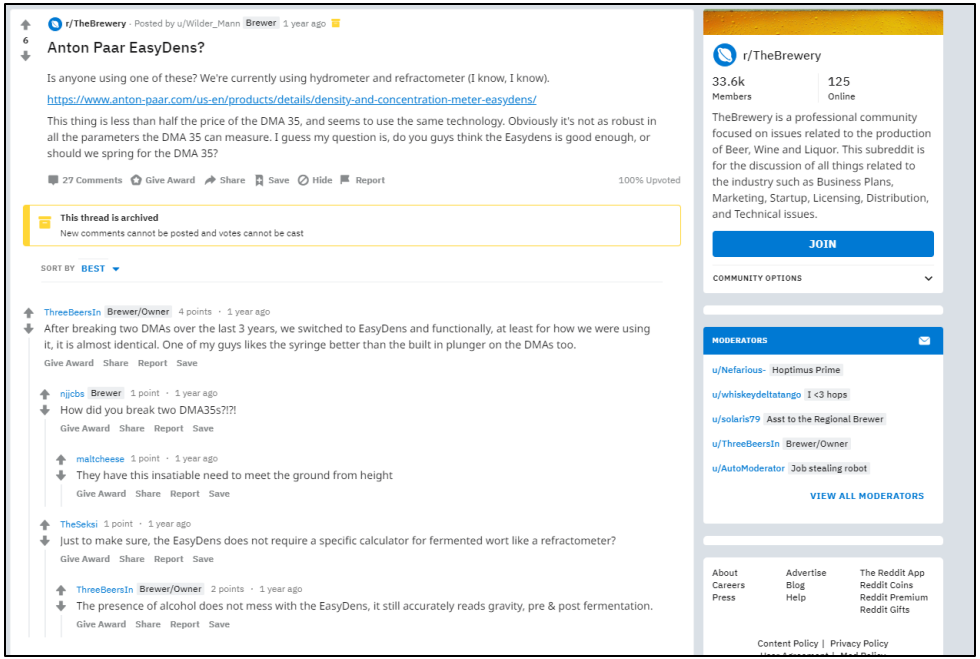
Phase two – business understandings

Group work – **understanding the business case**

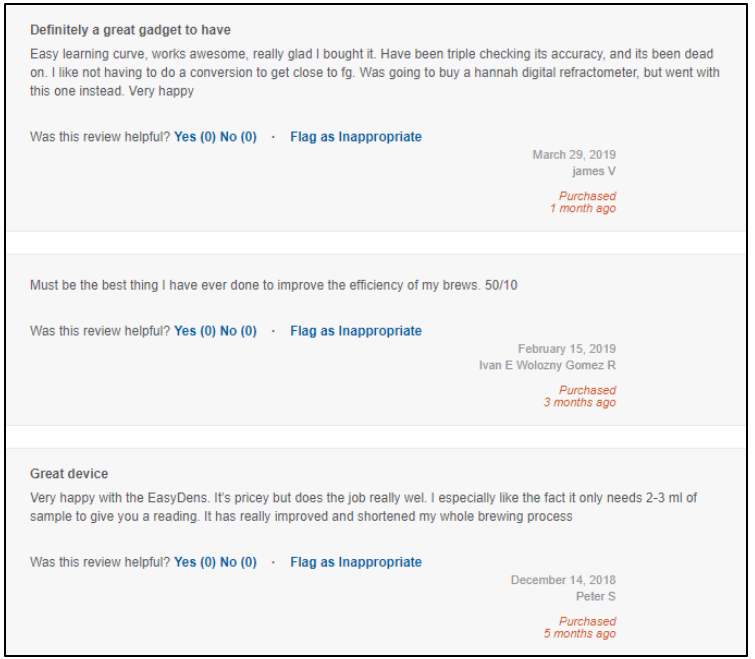
1. Exploring data set
2. Exploring variables for customer segmentation
3. Exploring opportunities for predictions



Phase two – business understandings



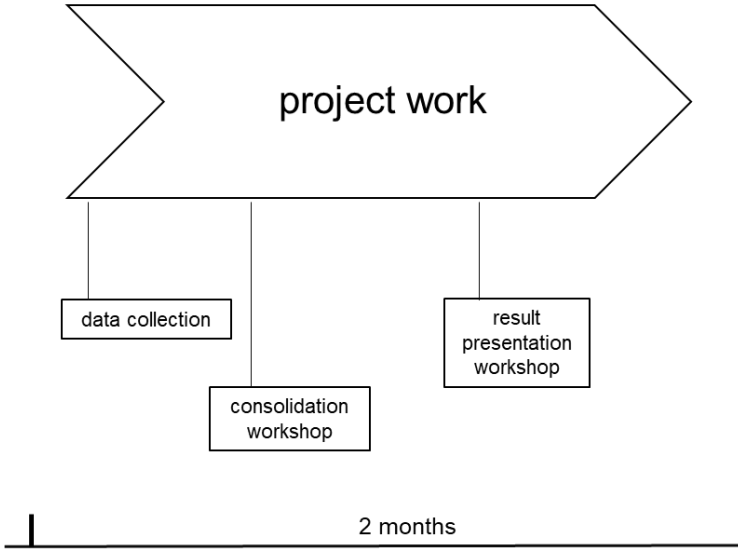
https://www.reddit.com/r/TheBrewery/comments/7w56sr/anton_paar_easydens/



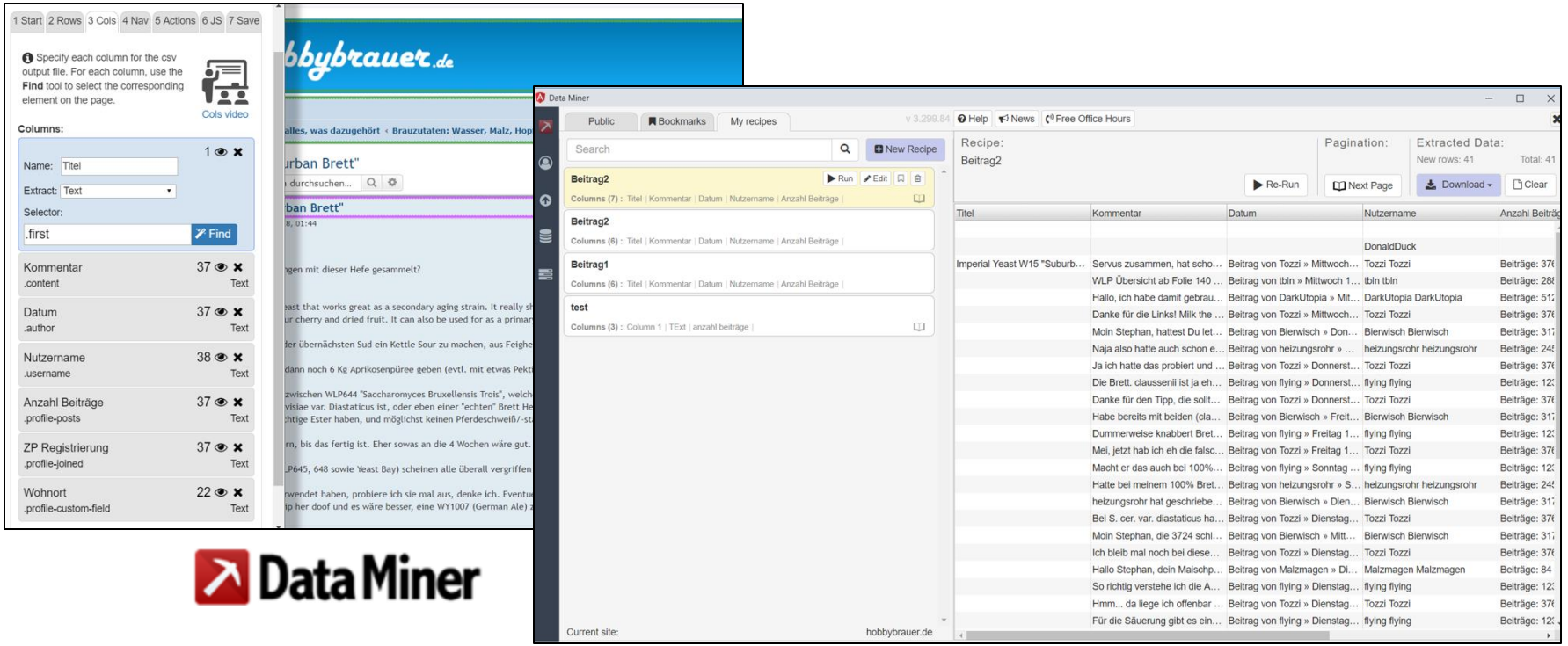
https://www.morebeer.com/products/easydens-anton-paar.html

Phase three – project work

- Extracting electronic word of mouth
- Visualization of electronic word of mouth.
- Customer segmentation based on web contents

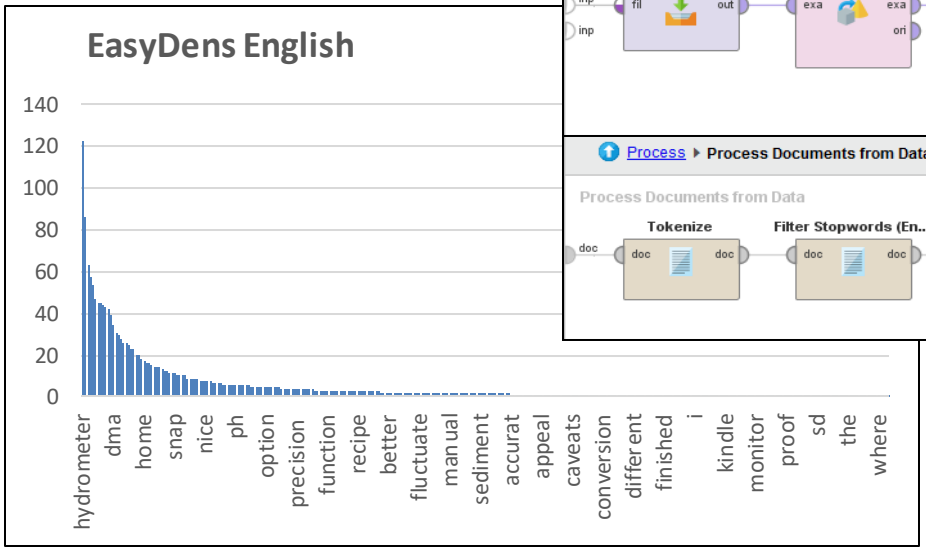


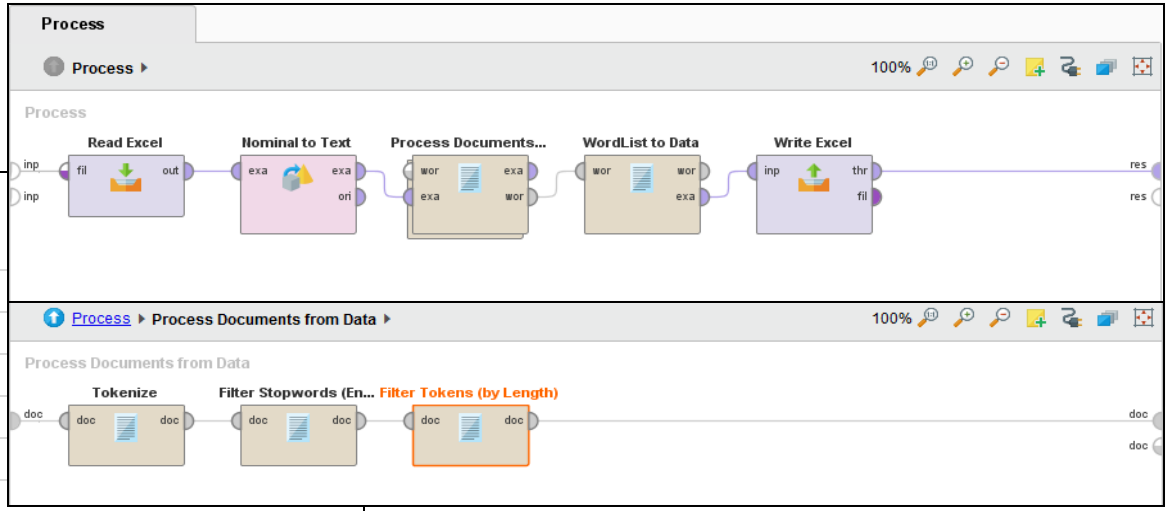
Phase three – (1) extracting eWOM



DataMiner

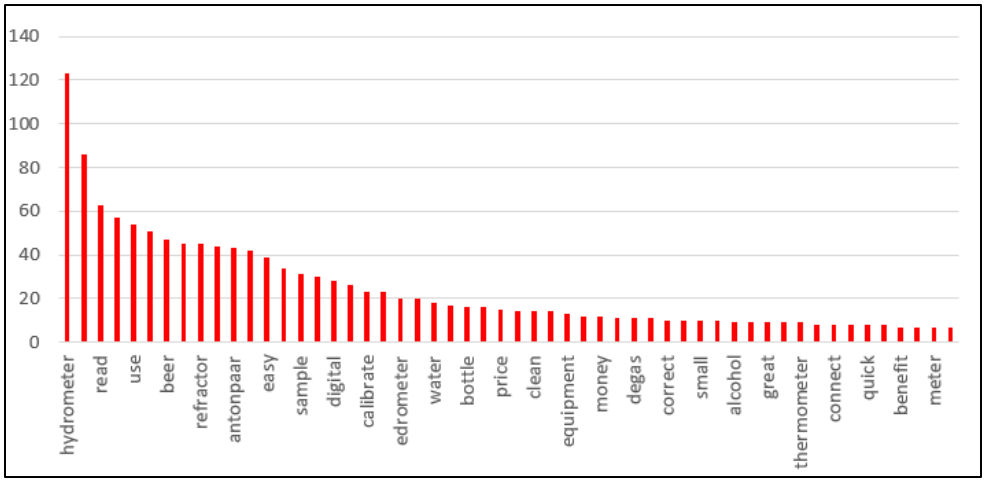
Phase three – (1) extracting eWOM



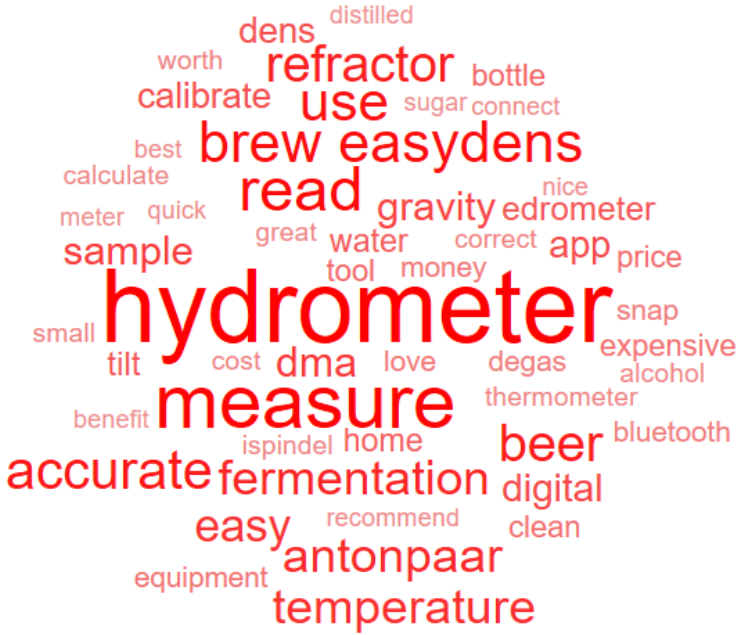


German: n=24.252; English: n=276

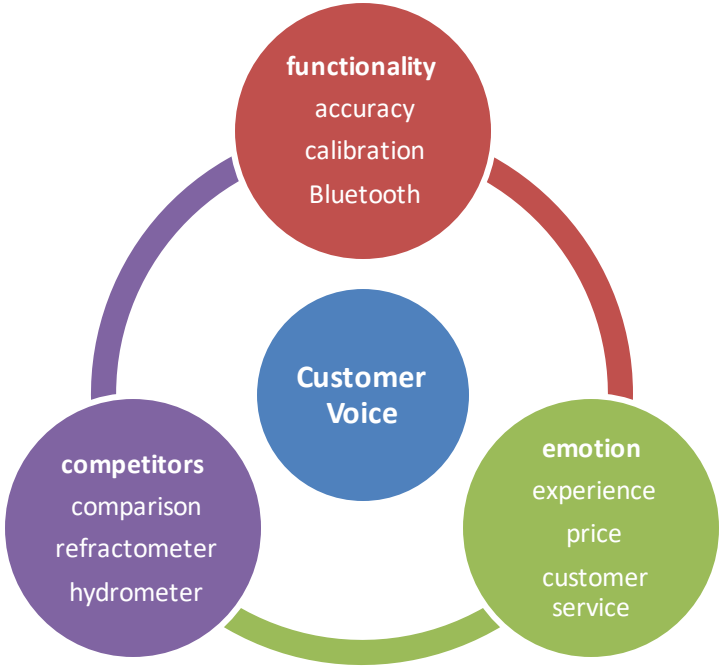
Phase three – (2) visualization of eWOM



German: n=548; English: n=317



Phase three – (2) visualization of eWOM



„Very easy to set up and use. Readings clear and concise. I like the small amount of work needed to take a reading. I would recommend this to anyone considering purchasing it."

„Accurate and totally worth the money if you plan on using it in a semi or professional application."

Phase three – (3) customer segmentation

Cluster I (59.5%)

Positive comments

keywords
- great
- accurate

topics
- measurement results
- usage

"Great resource, especially for those shopping to upgrade their measurements!"

Cluster II (8%)

Lovingly comments

keywords
- love
- simplicity

topics
- experience
- usage

"The EasyDens is so easy to use and I love that it only needs a very small degassed sample to work. Highly recommended!"

Cluster III (32.5%)

Price critical comments

keywords
- price
- hydrometer

topics
- product comparison
- high price

"Unless you just have unlimited budget to throw at your first attempt, I can think of a dozen ways to more effectively spend money in the quest to make good beer."

English sample, n=126, k means, distance = 0.807, Davies-Bouldin Index = 4.577

rapidminer

Phase three – (3) customer segmentation

The Sceptic

- price critical
- inexperienced

"I use a hydrometer."

"$ 400 is a bit pricey ..."

The Potential

- price sensitive
- interested

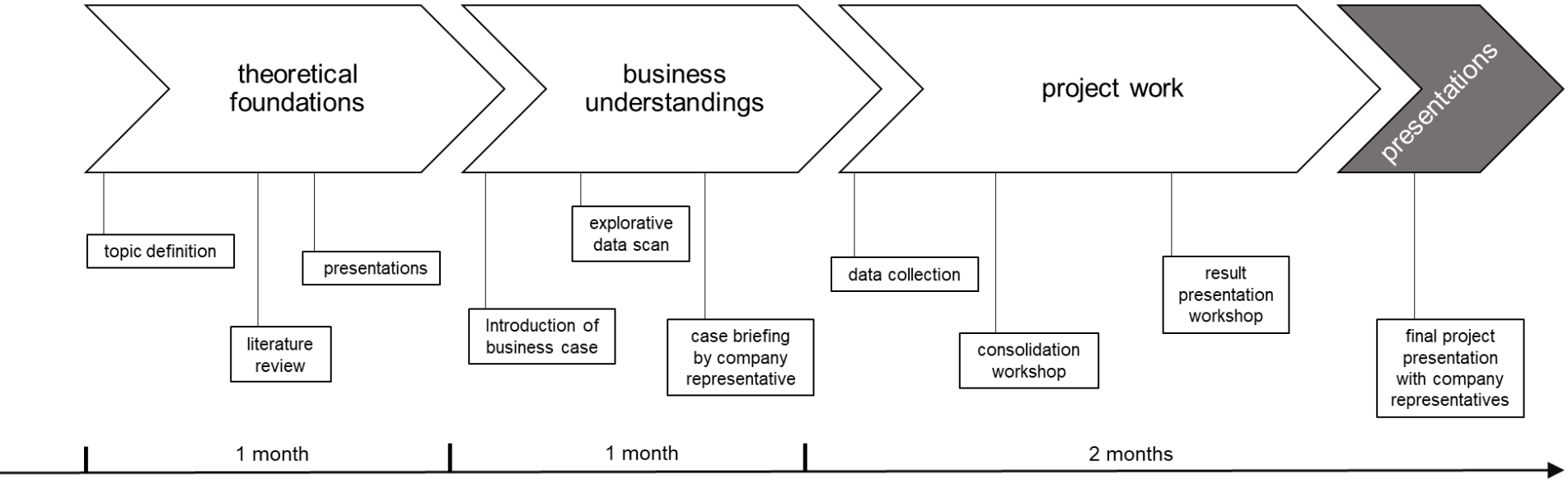
"Would love to know someone's experiences with the EasyDens, I've been eyeing it for a while."

The Convinced

- enthusiasm
- intention to recommend
- price acceptance

"Love my EasyDens!"

"The EasyDens works great!! Fast, easy, accurate."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Conclusion

- Web mining of eWOM proofed to be a promising use case for teaching data analytics to marketing students.
- Using a real case was key for student's motivation and learning experience.
- Business students lost their awe regarding data analytic approaches and were much more motivated to experiment.
- Students understood the phases of the data science life cycle and the necessity of acquiring business understandings.
- A plenty of easy-to-handle software applications enable also non-technicians to realize simple data science projects.

Creating knowledge for future scientific and/or practical application of big data analytics in a marketing context.

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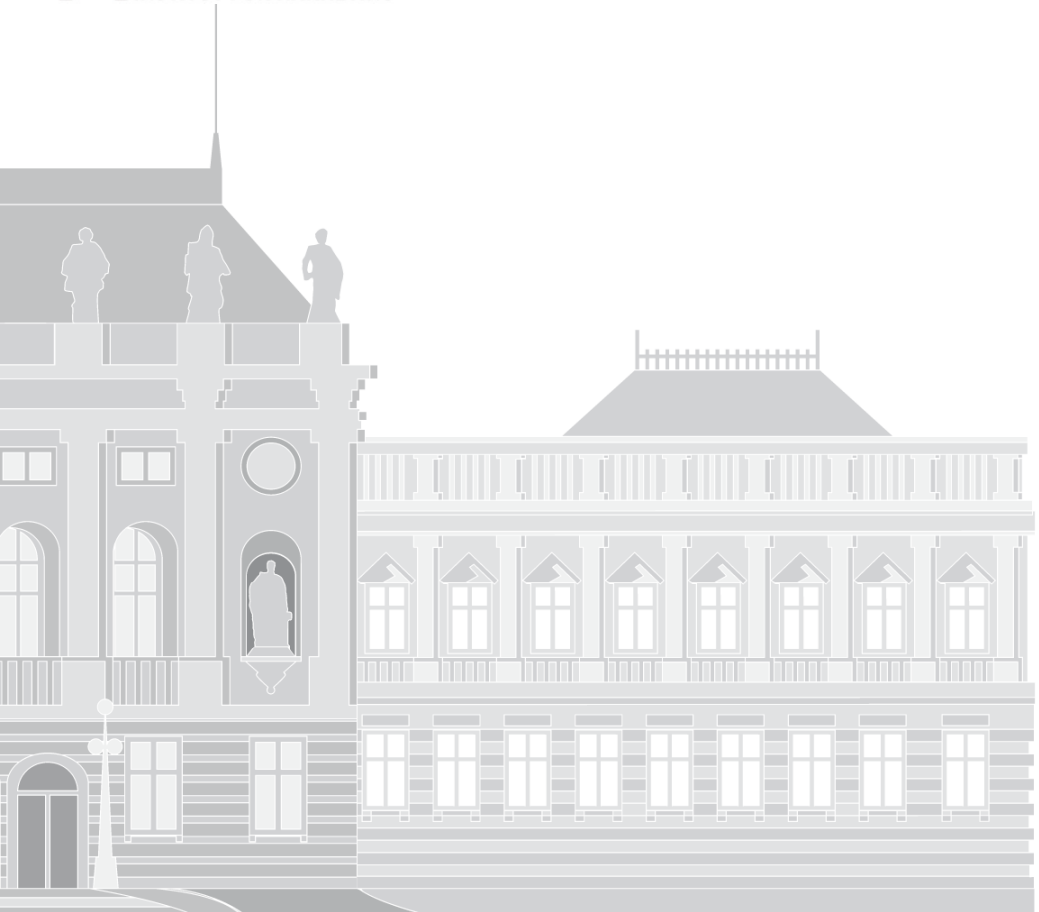

thank you very much

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