



# Vitenskapskomiteen for mat og miljø

Norwegian Scientific Committee for Food and Environment

## Watson to Sherlock

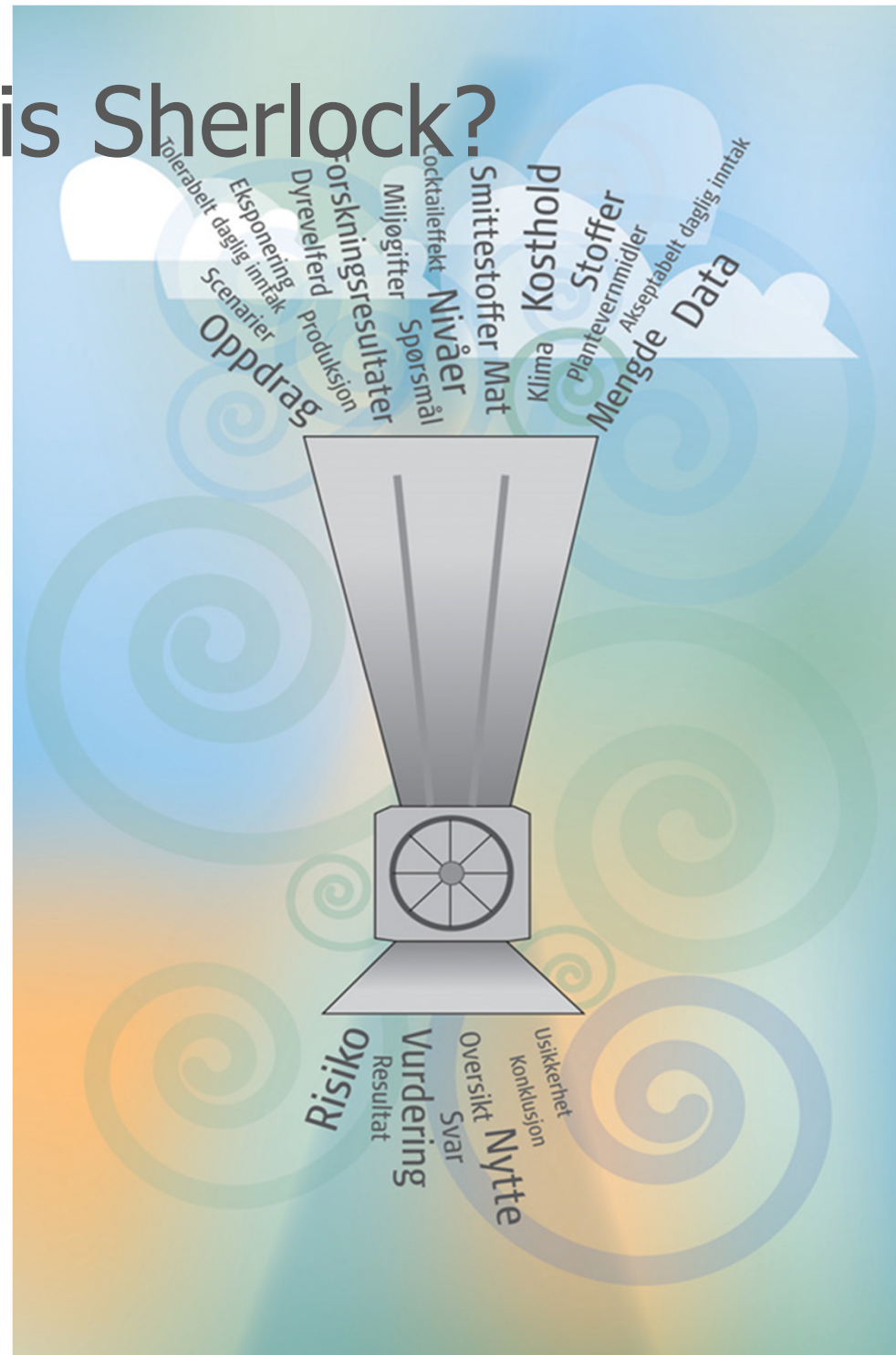
Danica Grahek-Ogden

68<sup>th</sup> AF meeting

Sofia 6.june 2018

# October 2017... who is Sherlock?

- Well... we are!
  - looking for answers to complex questions
  - going through huge amounts of information to find a golden nugget of knowledge
- but what if we can digitalise and make that process quicker?
- and what if Sherlock does that job for us?



# June 2018 – where are we now?

- 22<sup>nd</sup> May - meeting at DTU in Copenhagen
  - Danica Grahek-Ogden, VKM, Oslo; Jostein Starrfelt, VKM, Oslo; Ana Garcia, EFSA (teleconference); Kirsten Heckenbach, BVL; Bjarne Kjær Ersbøll, Professor, DTU Compute; Finn Aarup Nielsen, Senior lecturer, DTU Compute; Max Hansen, DTU FOOD; Gitte Alsing Petersen, DTU FOOD; Mikael Mandrup Egebjerg, DTU FOOD; Flemming Bager, DTU FOOD
- sum up the experiences
- establish where we are
- recommend the way forward

# Presentations

## What is achievable with machine learning in text mining and what is the time line?

Watson to Sherlock - text mining using machine learning  
DTU 22/5-2018  
Bjarne Kjær Ersbøll ~(:> bker@dtu.dk



$$f(x+\Delta x) = \sum_{i=0}^{\infty} \frac{(\Delta x)^i}{i!} f^{(i)}(x)$$



Automated approaches to literature screening - 3

Jostein Starrfelt  
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Watson to Sherlock meeting  
22.05.2018

Automated approaches to literature screening - 3



# Machine learning techniques — how do they work?



## Finn Årup Nielsen

### Cognitive Systems, DTU Compute

## 22 May 2018



### Extensive literature survey

## Watson to Sherlock – text mining using machine learning

### Where is the BVL (Germany) at present?

# Conclusions

- different approaches to the challenge
- outside the scope of the pilot project in EFSA to include in the tool the automation of literature searches.
- DTU and VKM have shown some possibilities in conducting literature search
- BVL has presented sources and tools used in text mining and early detection of risks
- **combined, these tools and ideas are opening up for possibilities to be explored and giving us a platform for future project(s)**

# Way forward

- group that will start working on project ideas established
  - Flemming Bager (coordinating the input from Denmark)
  - Danica Grahek-Ogden (coordinating the input from Norway)
- Funding opportunities identified (need to be explored in more detail)
  - EC
  - WIDESPREAD (H2020-WIDESPREAD-2018-2020)
  - 2018 CEF Telecom Call - Public Open Data (CEF-TC-2018-5)
- **Involvement of other countries and institutions is strongly encouraged (coordinated by the AF member from the respective country)**