IBM SolutionsConnect 2013
Turning Opportunity into Outcomes.

# Content analytics in healthcare

Sjoerd Alkema
**Capgemini**

**Content in Motion**
Smarter Content. New Insights. Better Outcomes.

# Introduction: Sjoerd Alkema

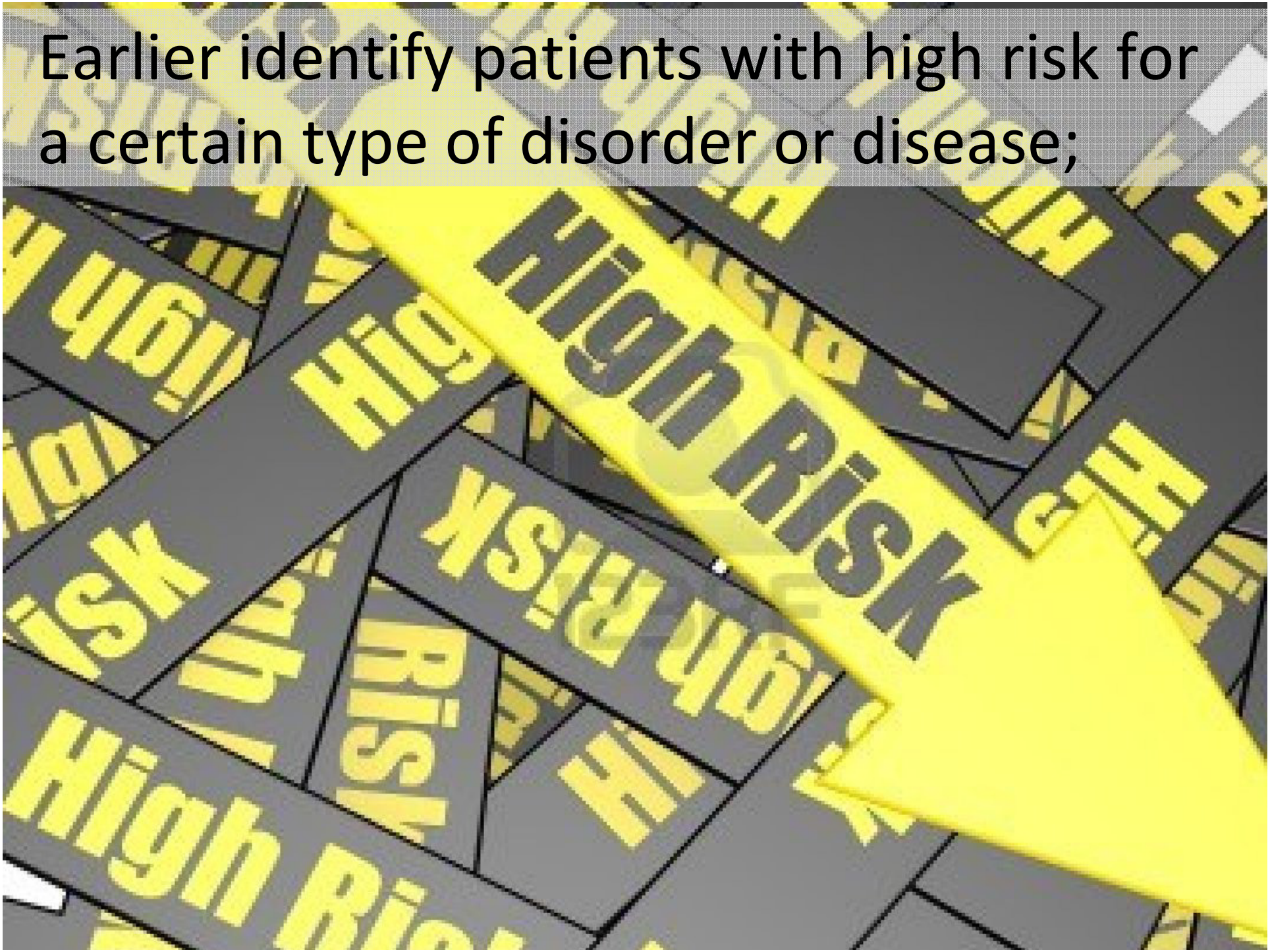
- Capgemini Enterprise Content Management strategy lead and expert
- 10 years experience in the field

- Contact me:
  - @sjoerdalkema
  - sjoerd.alkema@capgemini.com
  - Capgemini expert connect:
    - http://www.capgemini.com/experts/enterprise-content-management/sjoerd-alkema

# Imagine if we could..

# Identify hidden relations between diagnoses and other (at first view) separate diseases: comorbidity;

Earlier identify patients with high risk for a certain type of disorder or disease;



Support in making better informed decisions on diagnoses and treatment;

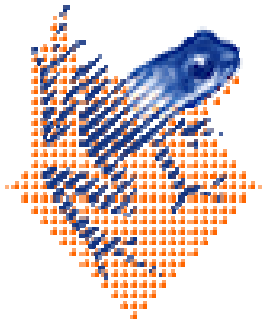
# We can…

Capgemini
CONSULTING.TECHNOLOGY.OUTSOURCING

IBM

Combining technology, (text) analytics expertise and business knowledge to **add value** in healthcare

First stop:



umcg

# The world is changing

# ECM is changing: dealing with big content

Organizations are on a goldmine of content: but how to still get to the gold?
Content analytics
Photo by Rantes - Creative Commons Attribution-NonCommercial-ShareAlike License http://www.flickr.com/photos/41836833@N06
Created W

# Increase knowledge worker productivity by 20%

# Improve service to customers – analyze their data

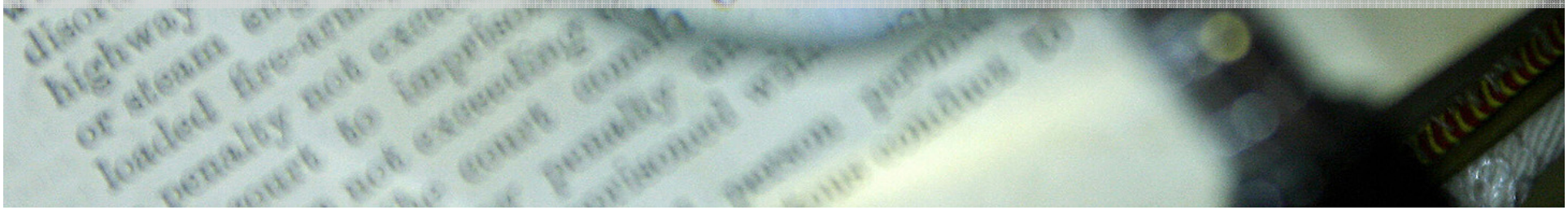
# Reduce the time to market by 30%

# Reveal hidden insights

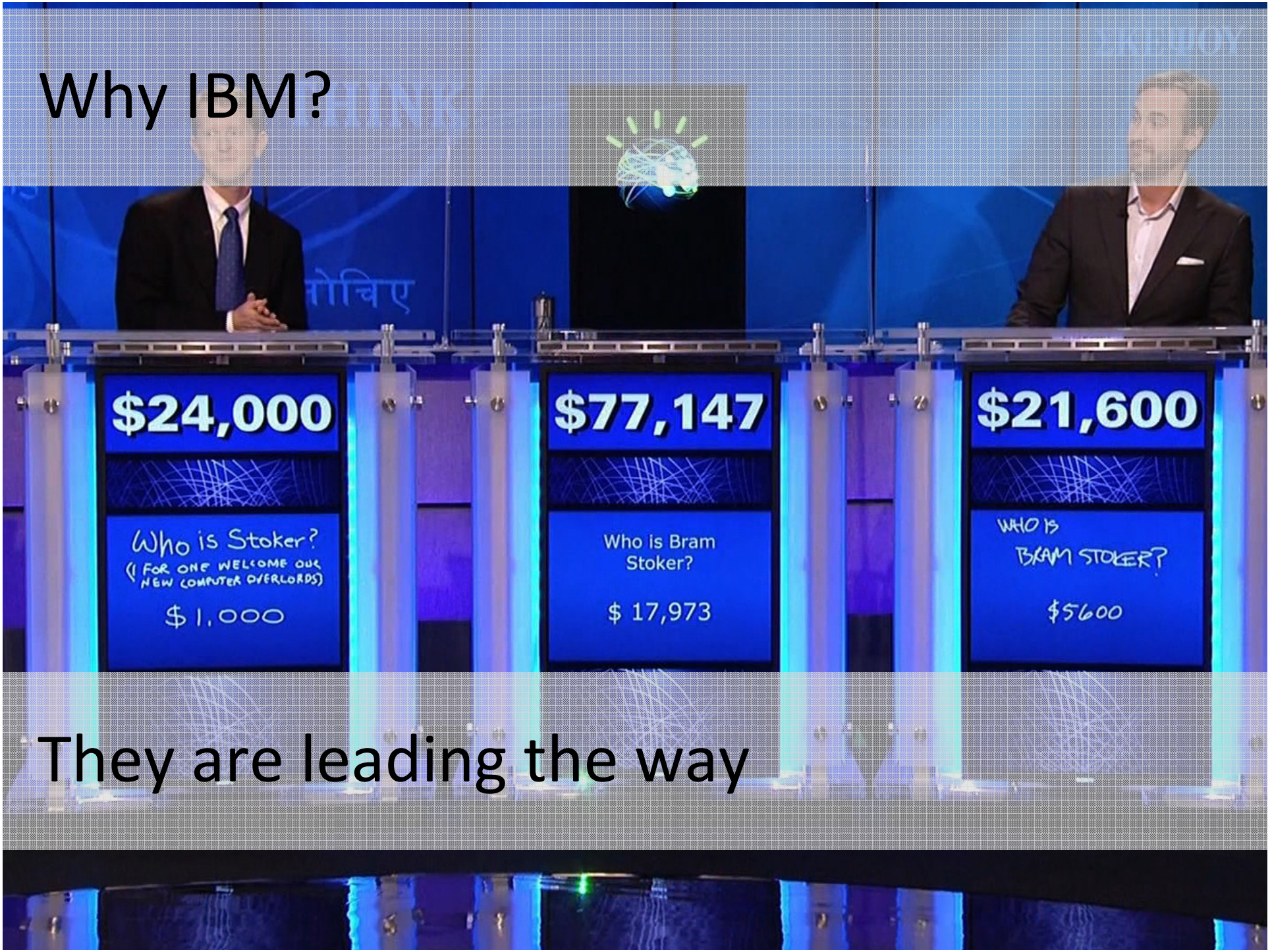
# Save up to 60% on cost of content storage

# Content analytics allows us to:

- Determine the value and relevance of content;
- Put our content into context;
- Uncover hidden trends, patterns and insights;



# Why IBM?




They are leading the way

# Client case UMCG

IBM

Capgemini
CONSULTING.TECHNOLOGY.OUTSOURCING

umcg

# The goal of the pilot:

- Establish proof for added value of content analytics by analysing unstructured data of patient sources;
- Look for correlation between head / neck cancer and other disorders or diseases (comorbidity);
- Create a business case for using content analytics in practice;

# Approach of the pilot

- Working iteratively towards the goal;
- Look for comorbidity, but see what we encounter on the way;
- Using text analytics in IBM content analytics studio & miner;
- Time: 8 weeks;

# The data used in the pilot

- 600 patients diagnosed head and neck cancer 1994-2010;
- Gender, age and hash of patient number are known
- 3-5 anonymized documents per patient;
  - Discharge letters;
  - Referral letters;
- Imported dictionaries:
  - DHD (Dutch Hospital Data): official medical terms
  - Diagnose methods, treatments

# Discharge letters

Patient records

doctor, operator, supervisor

comorbidity

Duration of nursing

After care

Problem diagnose

Treatment

Special medicine

History

Reason for referral

## Correlations?

Goal of hospitalization

Operations

Intoxications

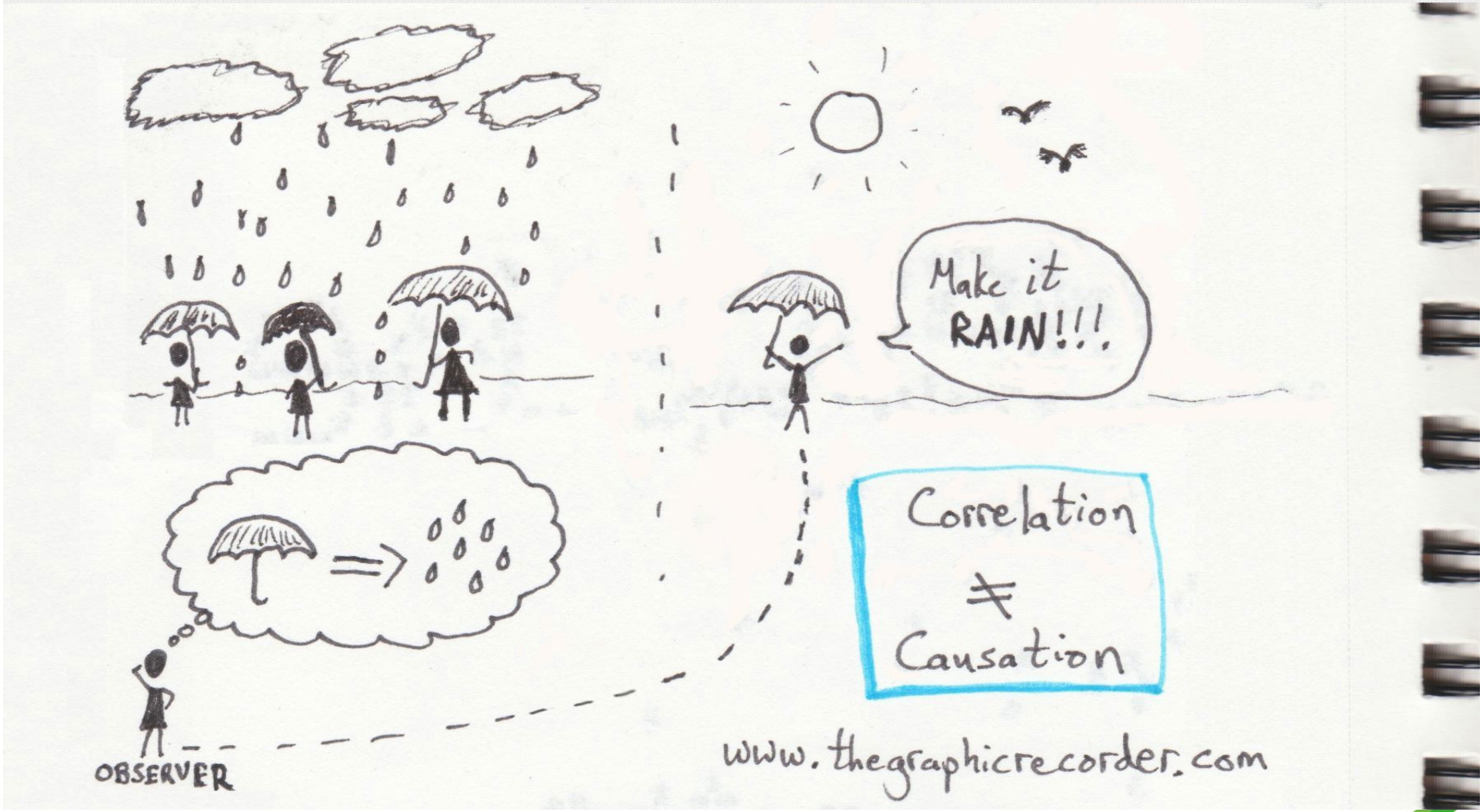
Complications

Problem description

Stadium

Medication at release

# Interpretation of results



# Next steps

- Validate results
- Implement positive business case
- More hospitals to follow
- Productize solution (reuse annotators)
- Offer as a service

- Intelligent care delivery analytics (combine structured and unstructured data, use predictive analytics)

Thank you

# What is happening in the world of ECM

## Get your foundation

To build your intelligent enterprise you need to fix the basics and create your ECM foundation. Being competitive nowadays means better and faster information, and for this, a strong foundation is essential. Key elements in this are: centralized enterprise content management, enterprise wide information access, get your processes digital and implement information governance.

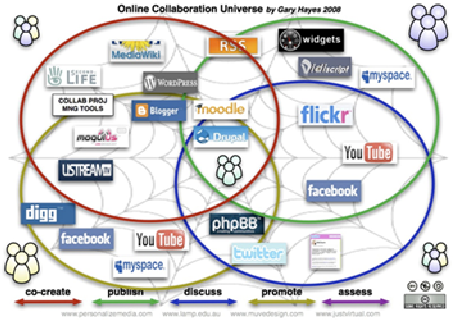
## Analyze and act

Big data, the rise in Volume (amount of data), Velocity (speed of data) and Variety (range of data) leads to new needs and opportunities where data is not only stored but actually used. Around 80% of your organizations content is unstructured. Content analytics can help you get value from this content and create new business insights. See patterns, trends and context and make smarter and faster business decisions.

## Activate your content

ECM has evolved to being a part of the ongoing daily (operational, tactic and strategic) business processes and therefore by nature is more agile. However, a lot of content is just sitting there doing nothing. To stay on top of your content, activate it. By data extraction and automatic classification, Case Management and analytics you will create an agile business environment where the right information is presented to you at the right time.

## Socialize and collaborate




Social media like Facebook and twitter are no longer a hype, but part of everyday life: both personal and businesswise. They can supply organizations with essential information about how their customers think and be of great value. Also for internal processes socializing is used for more and more for efficient collaboration and knowledge management.

## Mobilize your content

Users want to access their business information anytime and anywhere. Content must be presented and processes need to be handled via mobile devices. Mobilizing your content enables the new way of working and will lead to efficiency of your employees and organizational processes.

## Get into the cloud

Accelerate your implementation, reduce the total cost of ownership and risk and get a much faster ROI by making use of cloud or as-a-service models. Basic enterprise content management services like case management and collaboration platforms are already available. Be ready for the next step, ECM as a service.