
DATA
SCIENCE


PROCESS
MODEL

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S P E C I A L I S T F O R

C L O U D S E R V I C E S
I N T E R N E T A P P L I C A T I O N S
B I G D A T A

F R O M B E R L I N

We create data solutions.

From idea to cable.

BORN

2008

DATA SCIENCE

2011

2013

2015

~100

Employees in Berlin & Vienna

Data Science

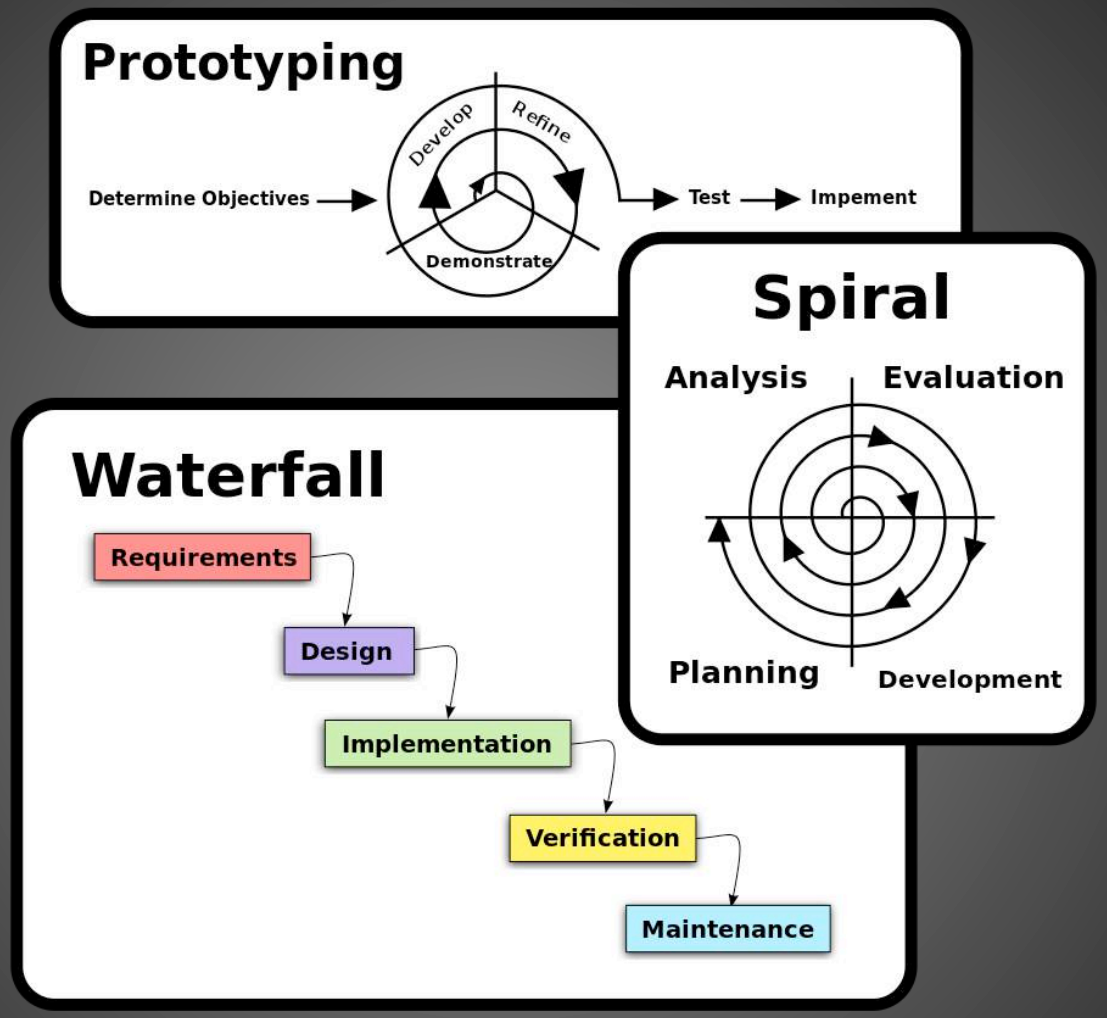
Custom Big Data Analytics, Machine Learning & Co.

Workshops & Trainings
Support in creating own Data Science Teams

= Full-Service

„We need a perfect interplay of human & machine intelligence“

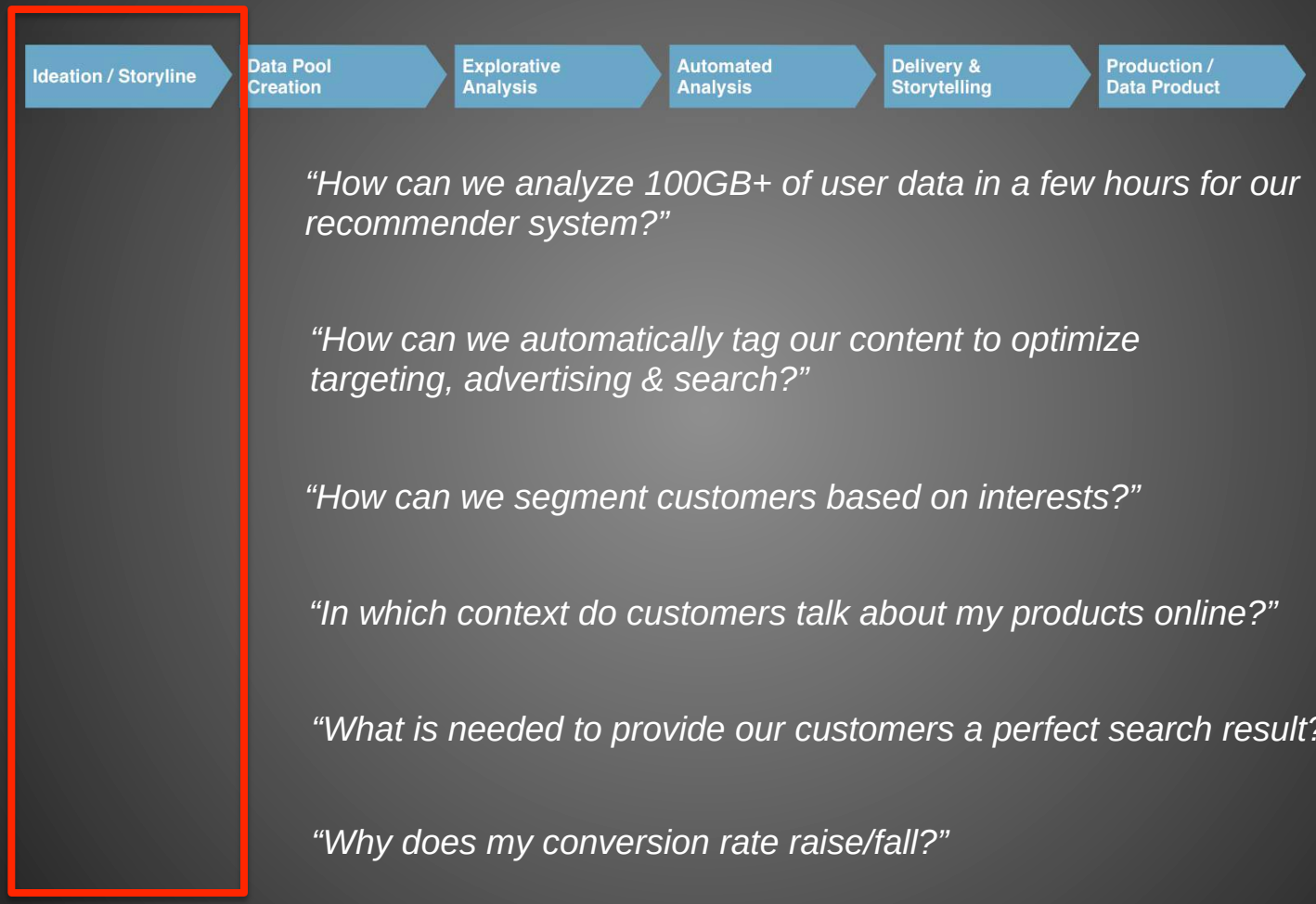
Process?



http://en.wikipedia.org/wiki/Software_development_process#mediaviewer/File:Three_software_development_patterns_mashed_together.svg

Data Science Process Model: Stages

Data Science Process Model



"How can we analyze 100GB+ of user data in a few hours for our recommender system?"

"How can we automatically tag our content to optimize targeting, advertising & search?"

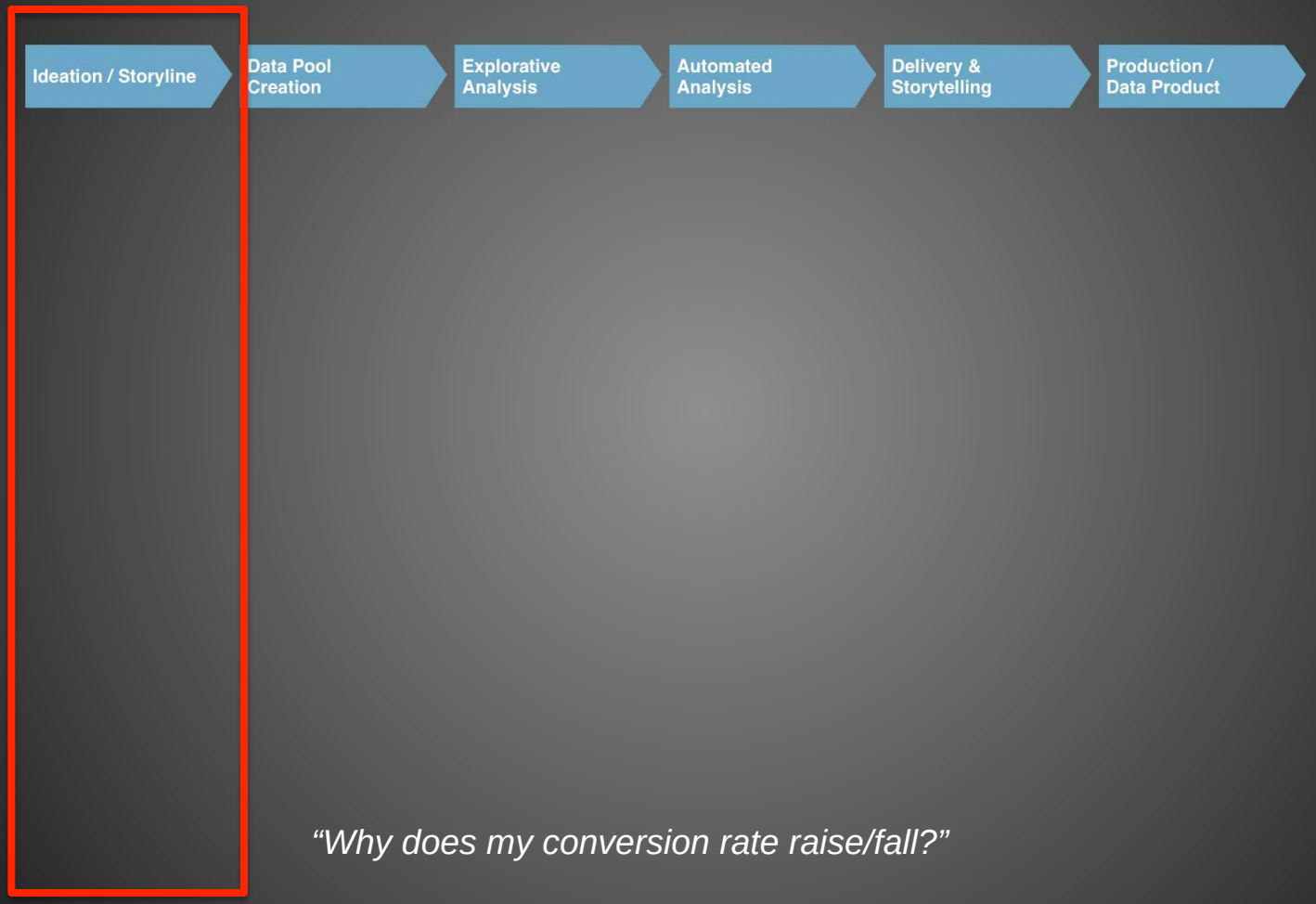
"How can we segment customers based on interests?"

"In which context do customers talk about my products online?"

"What is needed to provide our customers a perfect search result?"

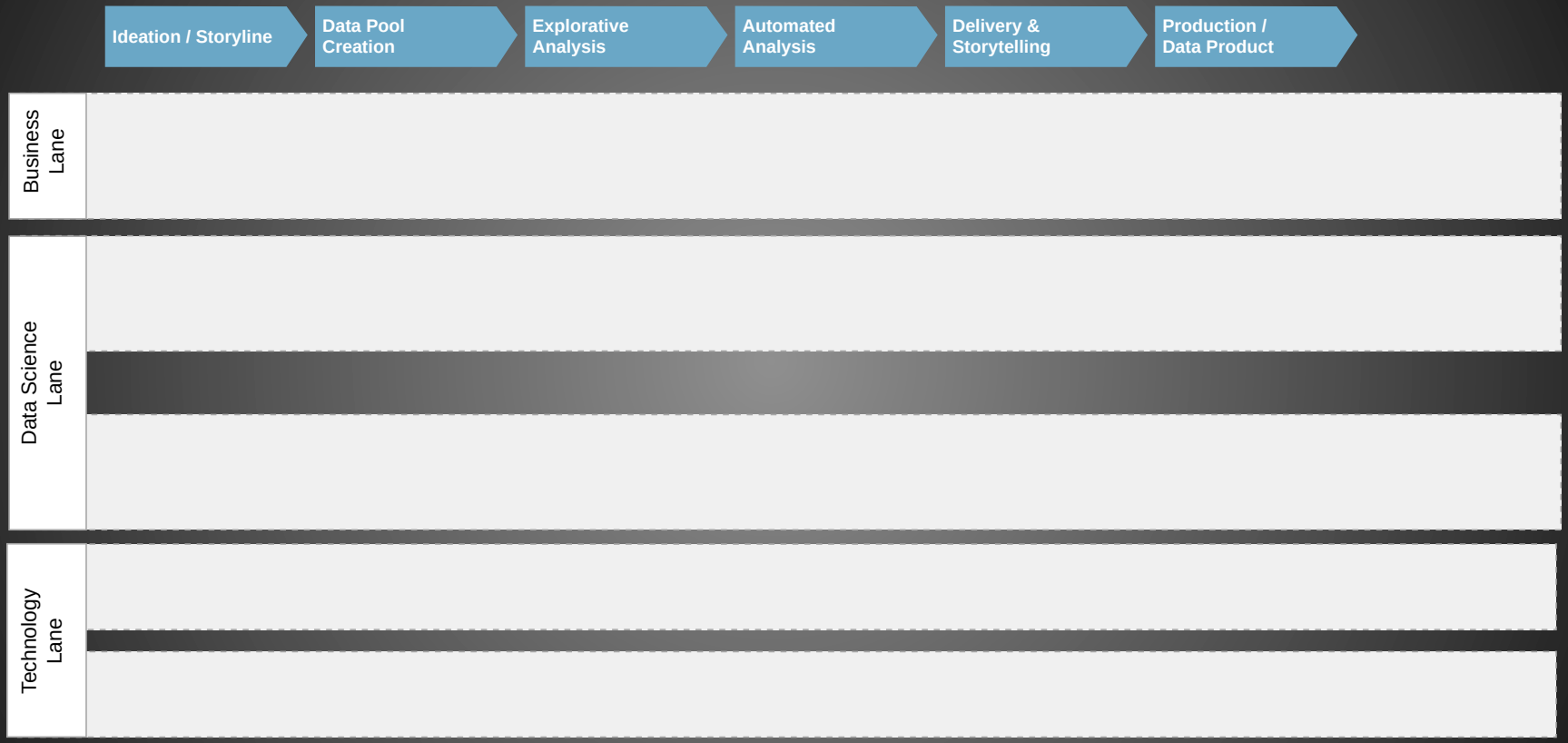
"Why does my conversion rate raise/fall?"

Data Science Process Model

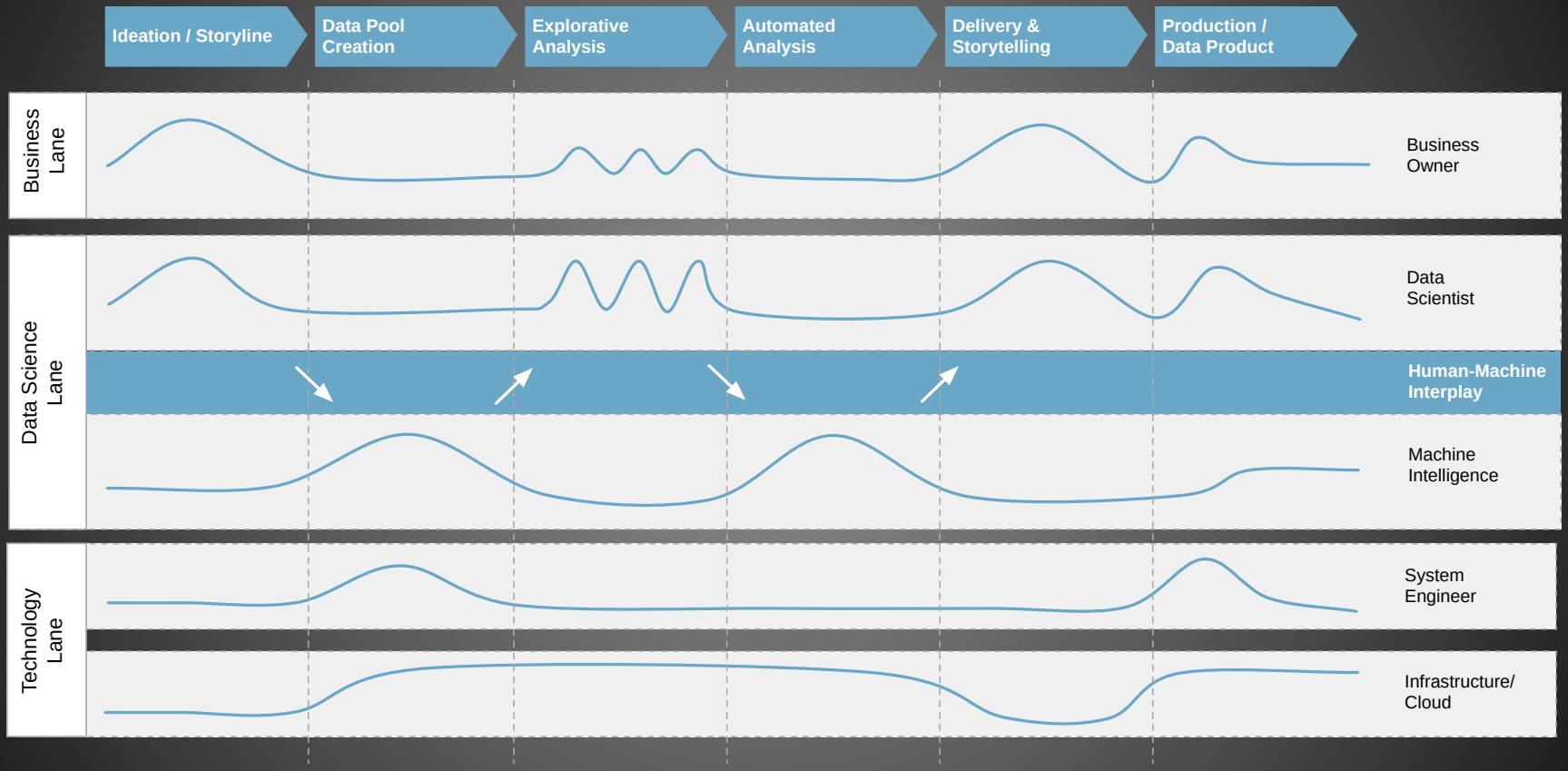


“Why does my conversion rate raise/fall?”

Data Science Process Model: Stages & Lanes



Data Science Process Model



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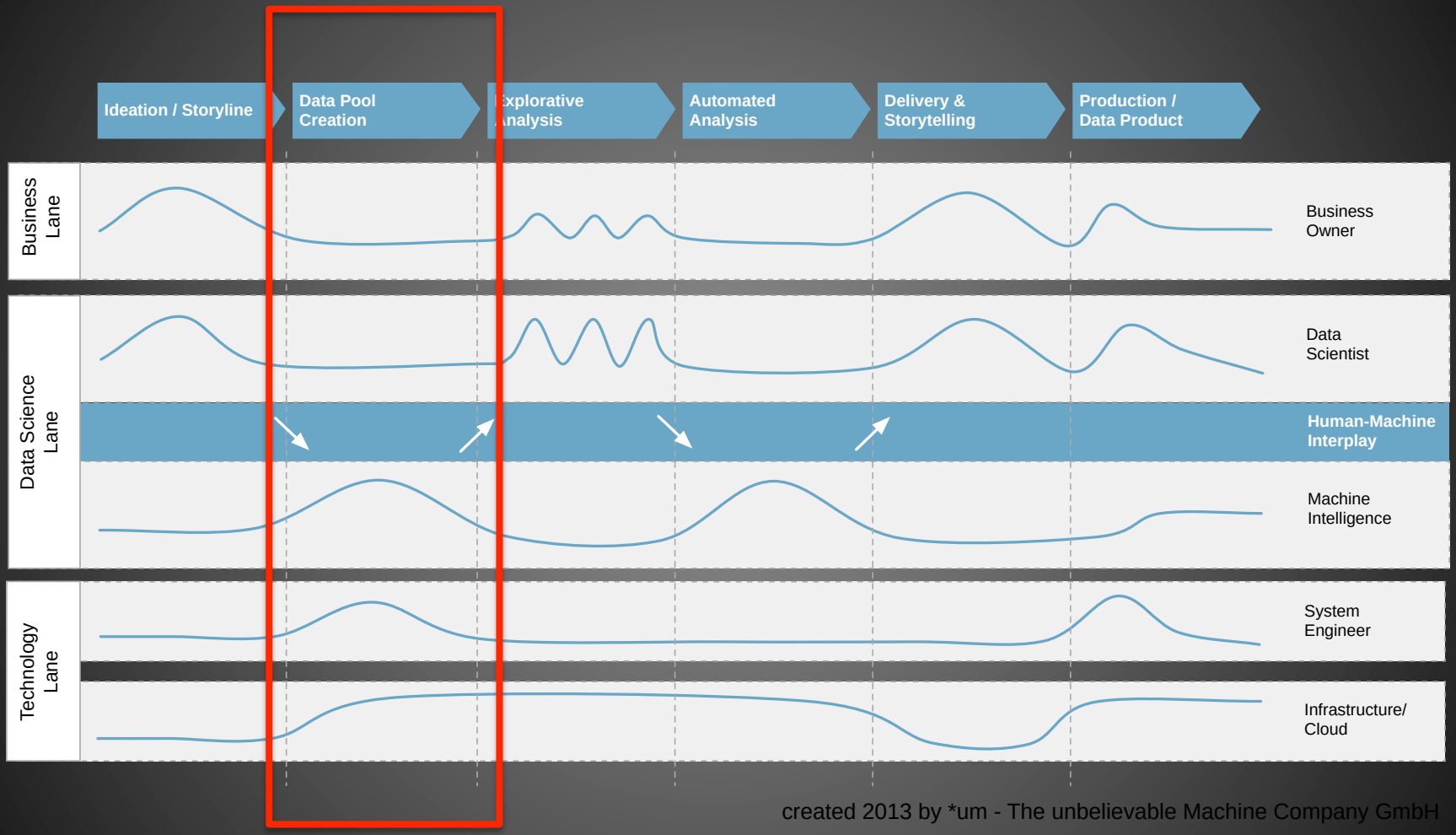
Data Science Process Model



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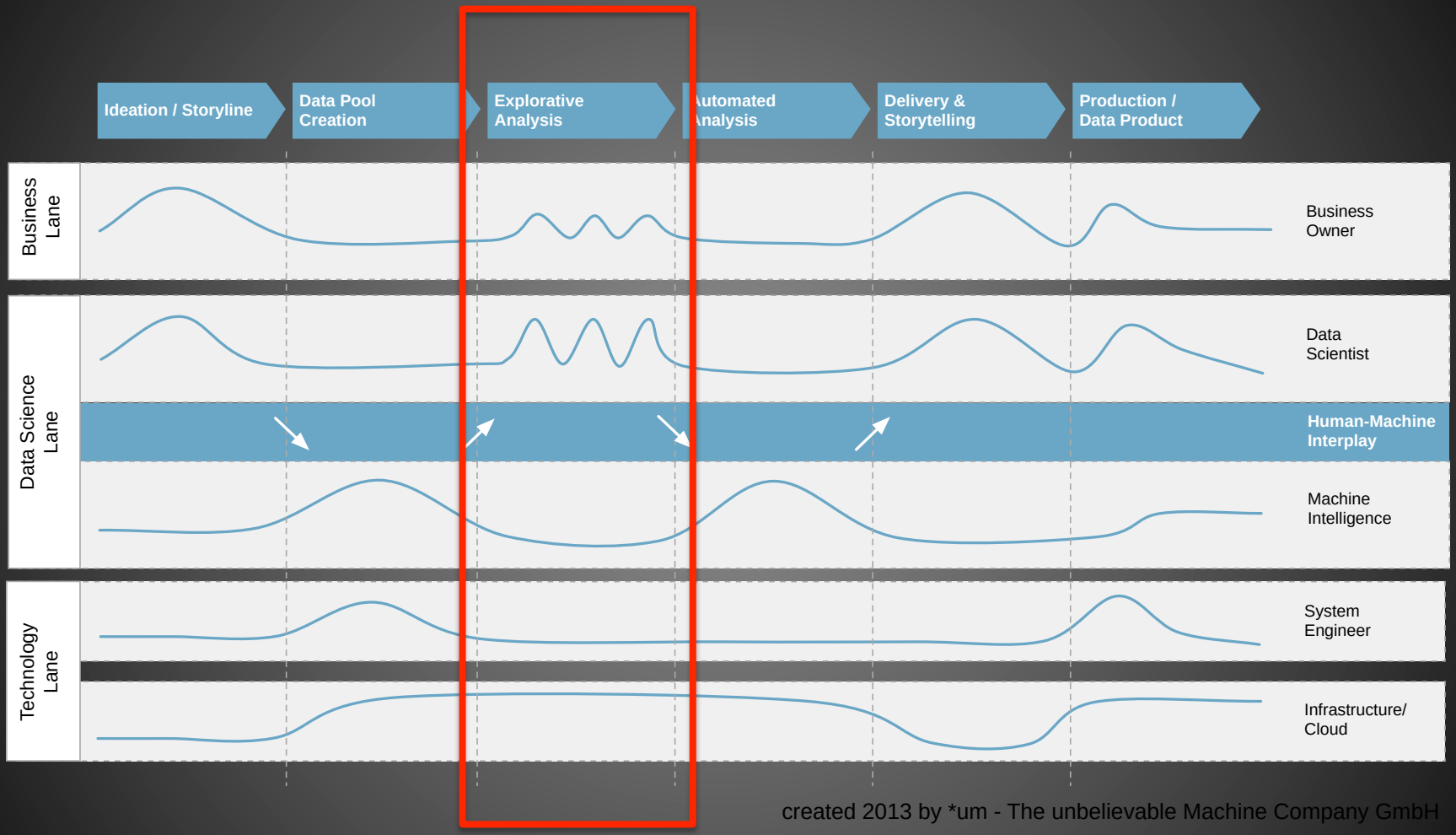
log files

~ 100 GB

~ 2 Monate

Sample: 200 K

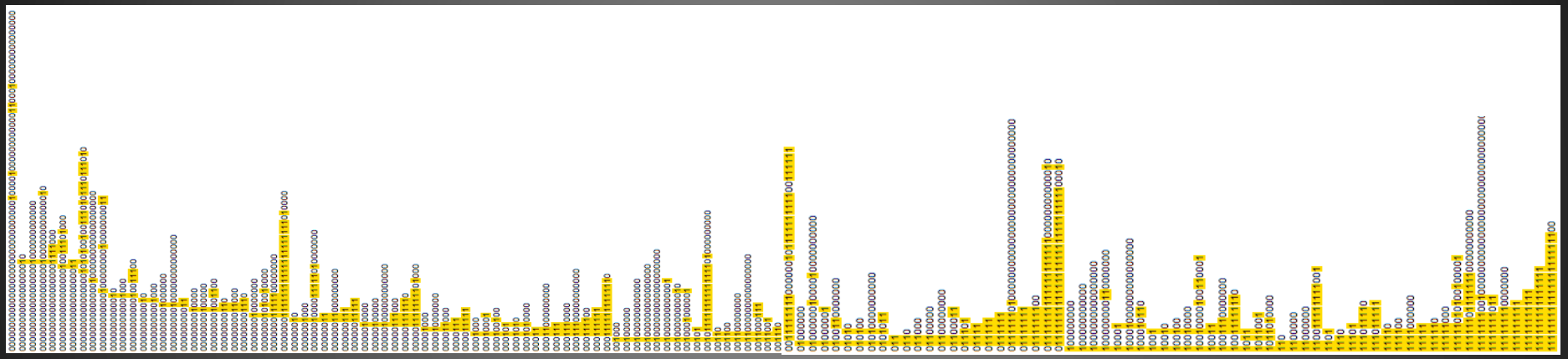
Data Science Process Model



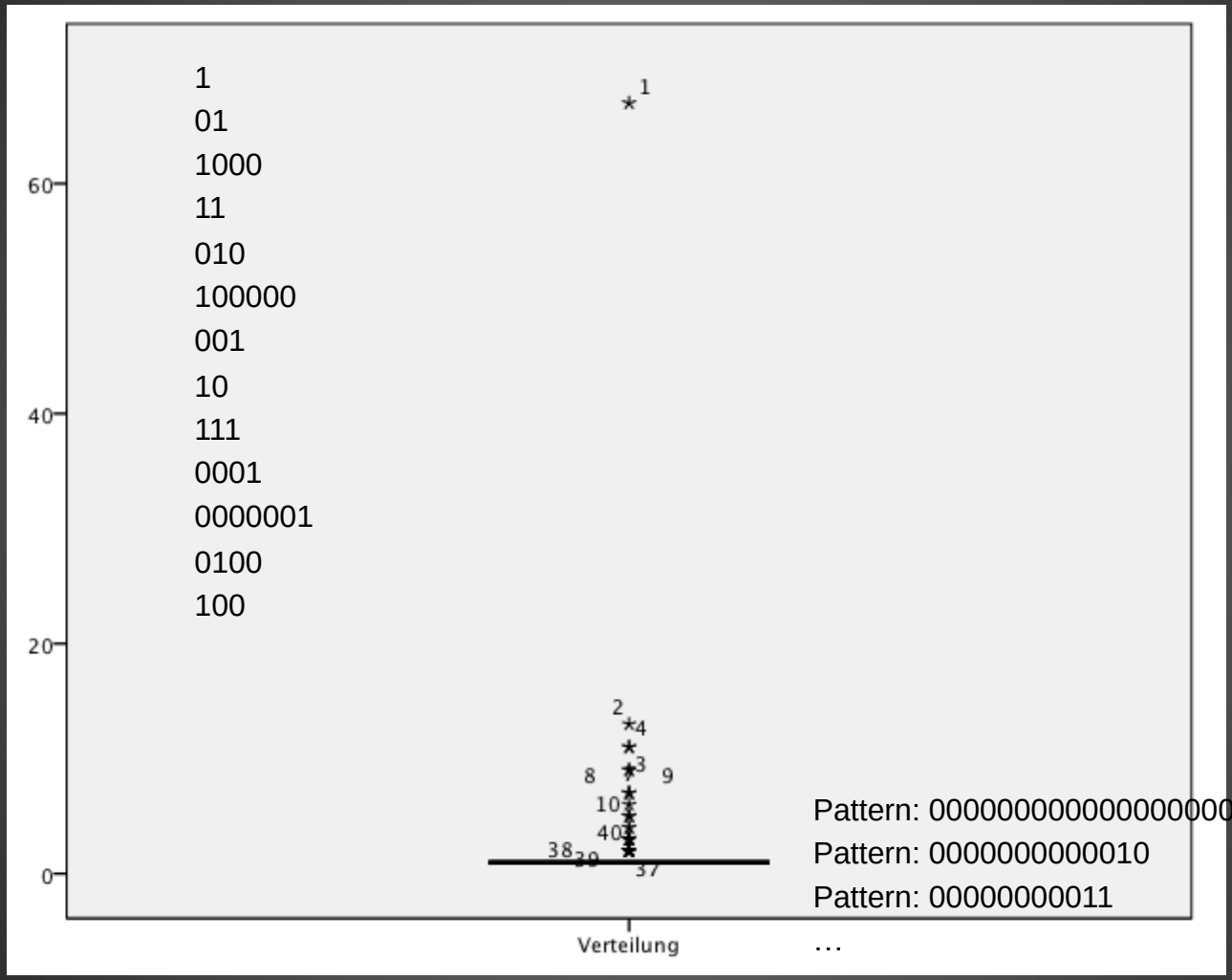
Conversion Rate Based On ..

80.18xxxx - - [19/Nov/2014:15:55:21 +0100] "GET /hd_de/checkout/onepage/success/ HTTP/1.1" 200 10341 "https://adomain/hd_de/checkout/onepage/" "Mozilla/5.0 (iPad; CPU OS 7_0_4 like Mac OS X) AppleWebKit/537.51.1 (KHTML, like Gecko) Version/7.0 Mobile/11B554a Safari/9537.53" 1635552 https

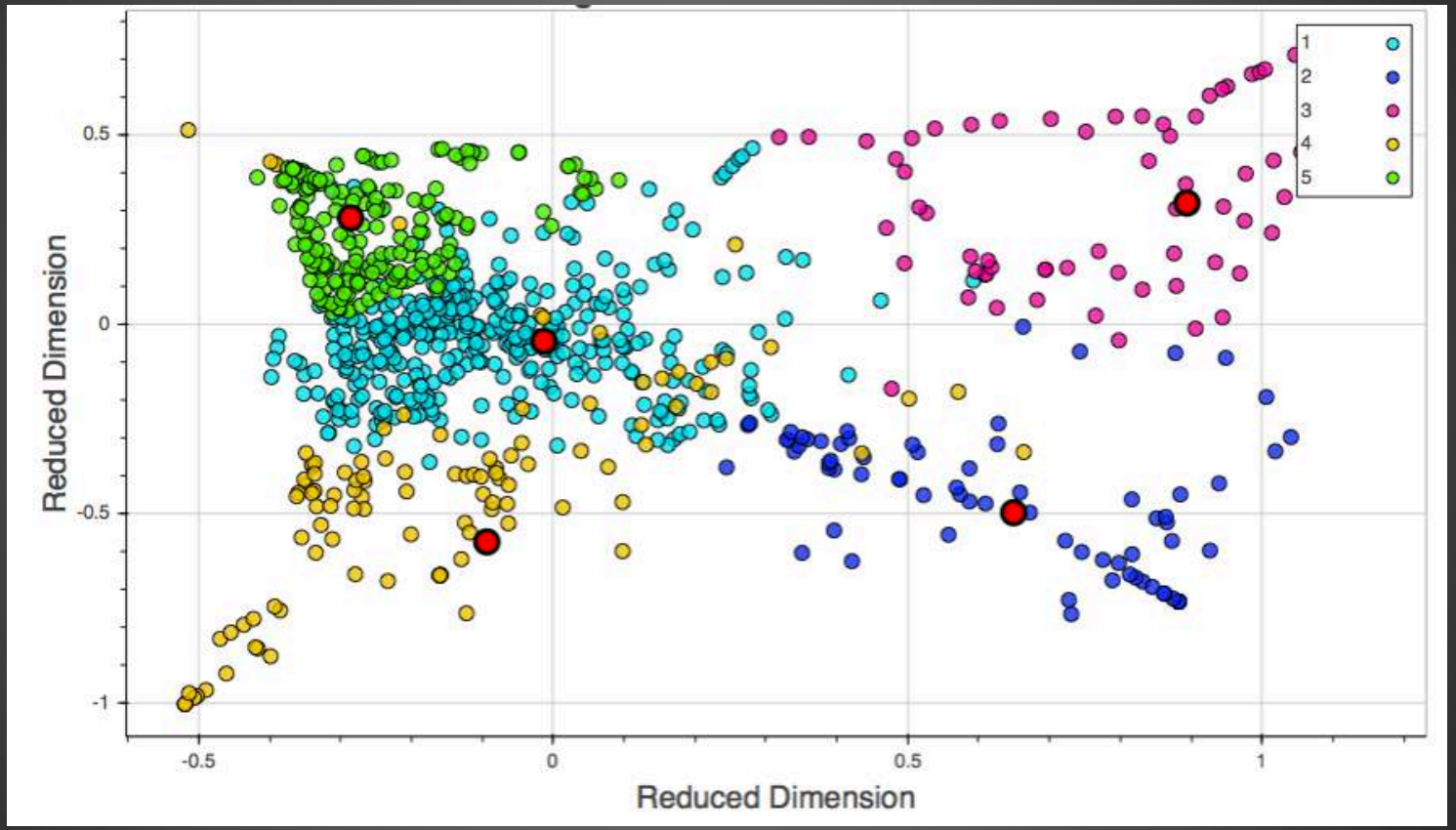
Exploration



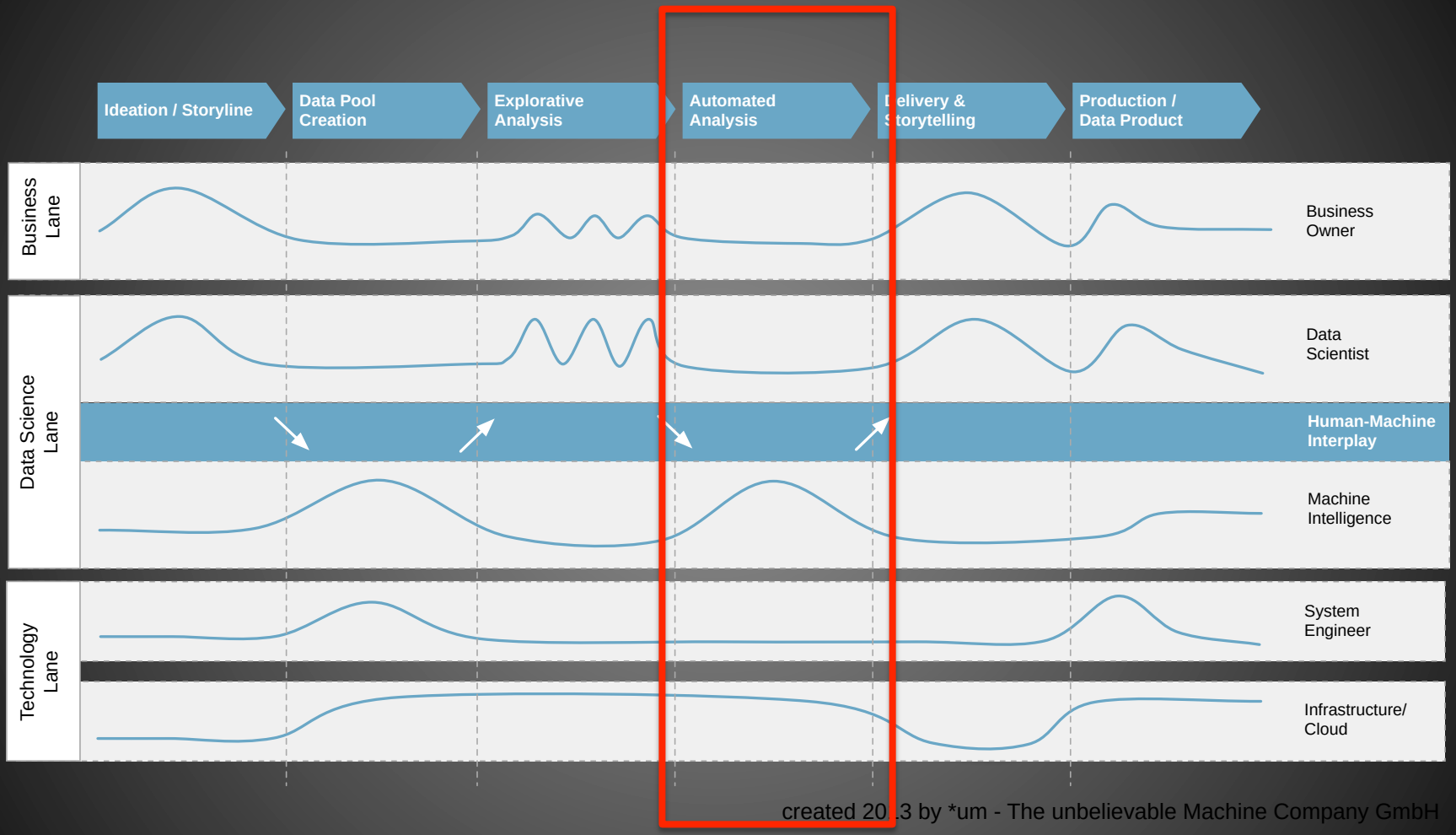
Exploration



Exploration

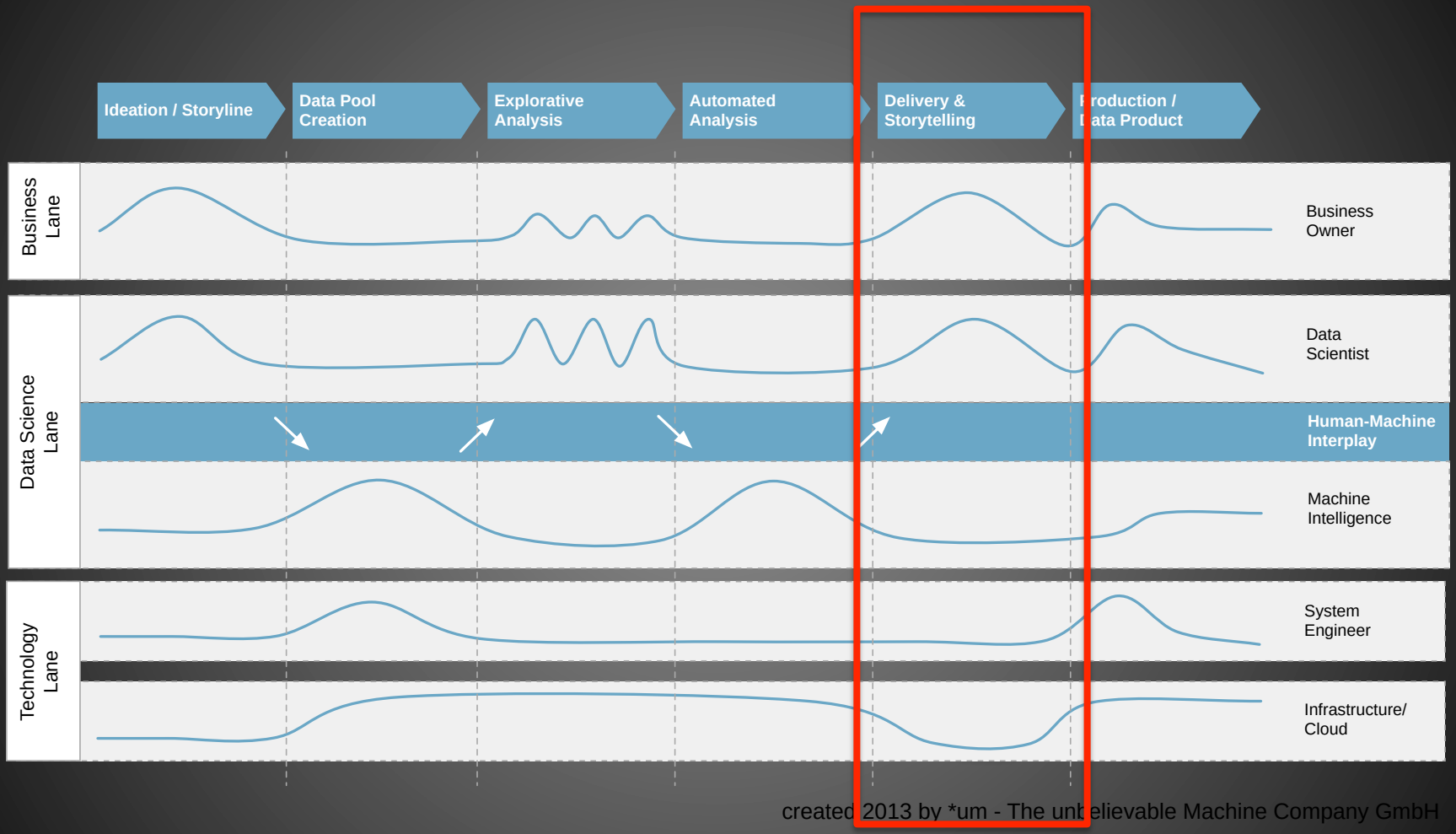


Data Science Process Model

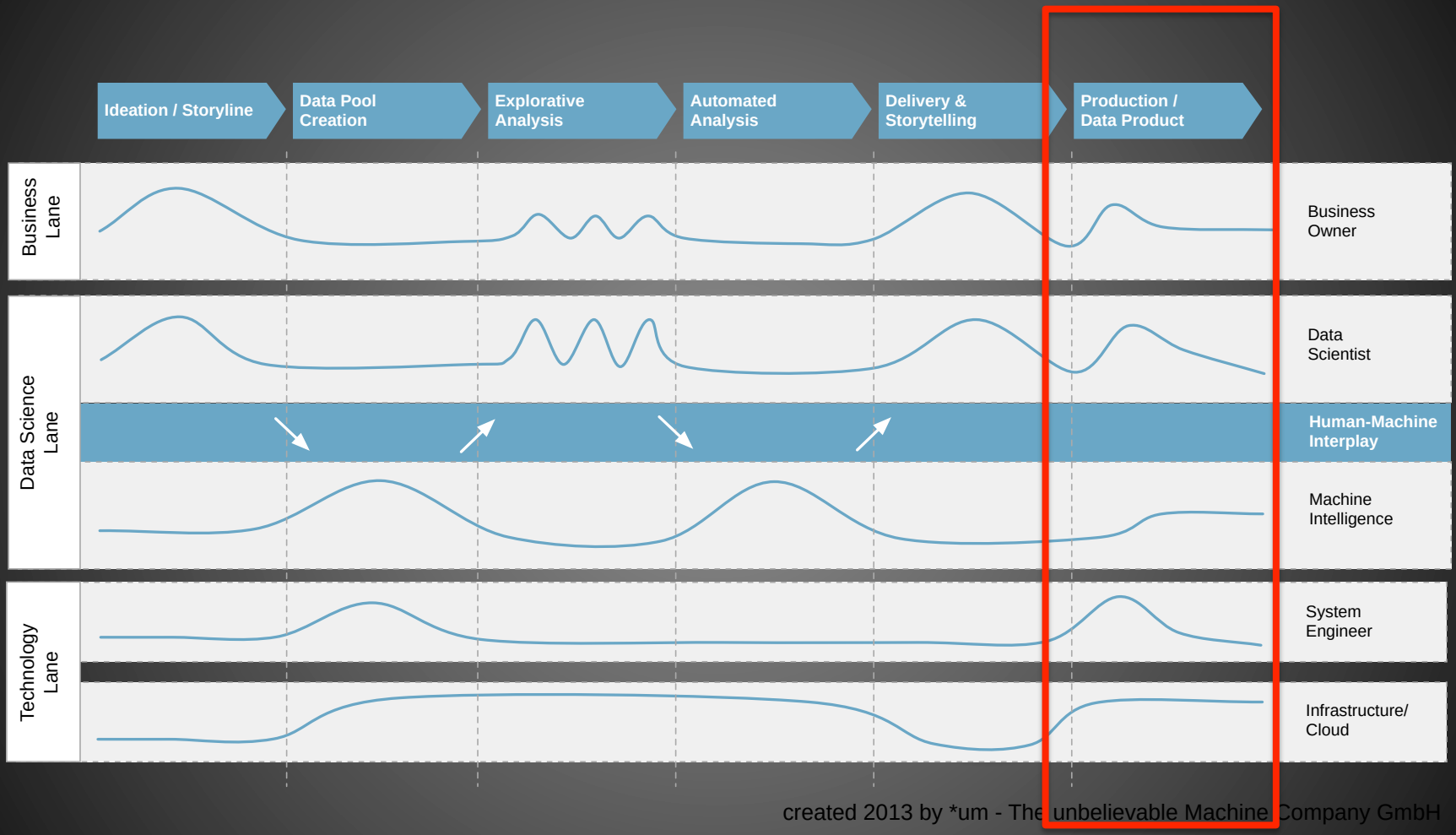


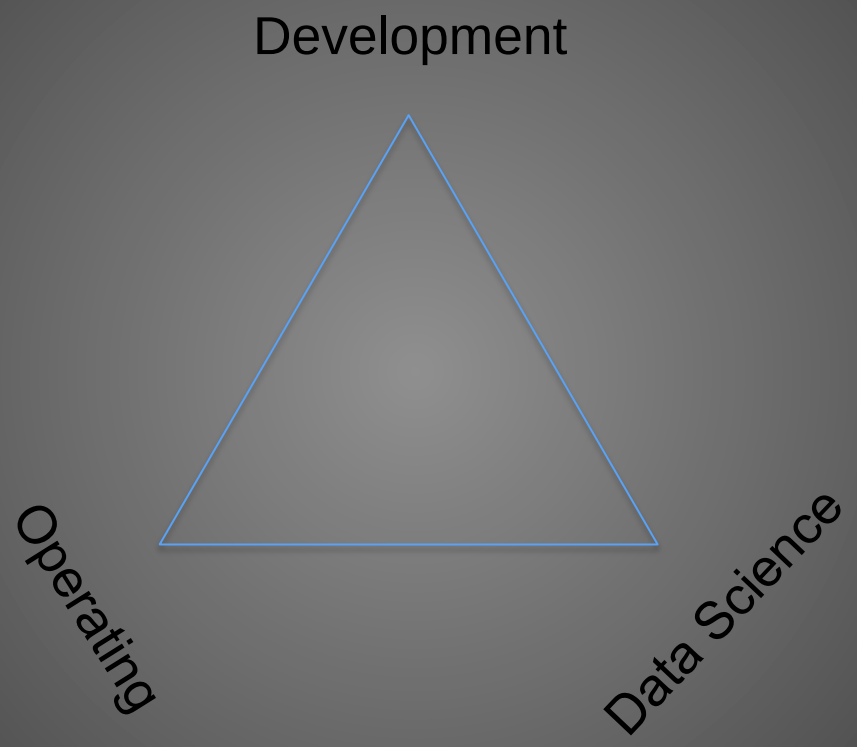
Automation

Data Science Process Model



Data Science Process Model




Development
Operating
Data Science

Thanks!

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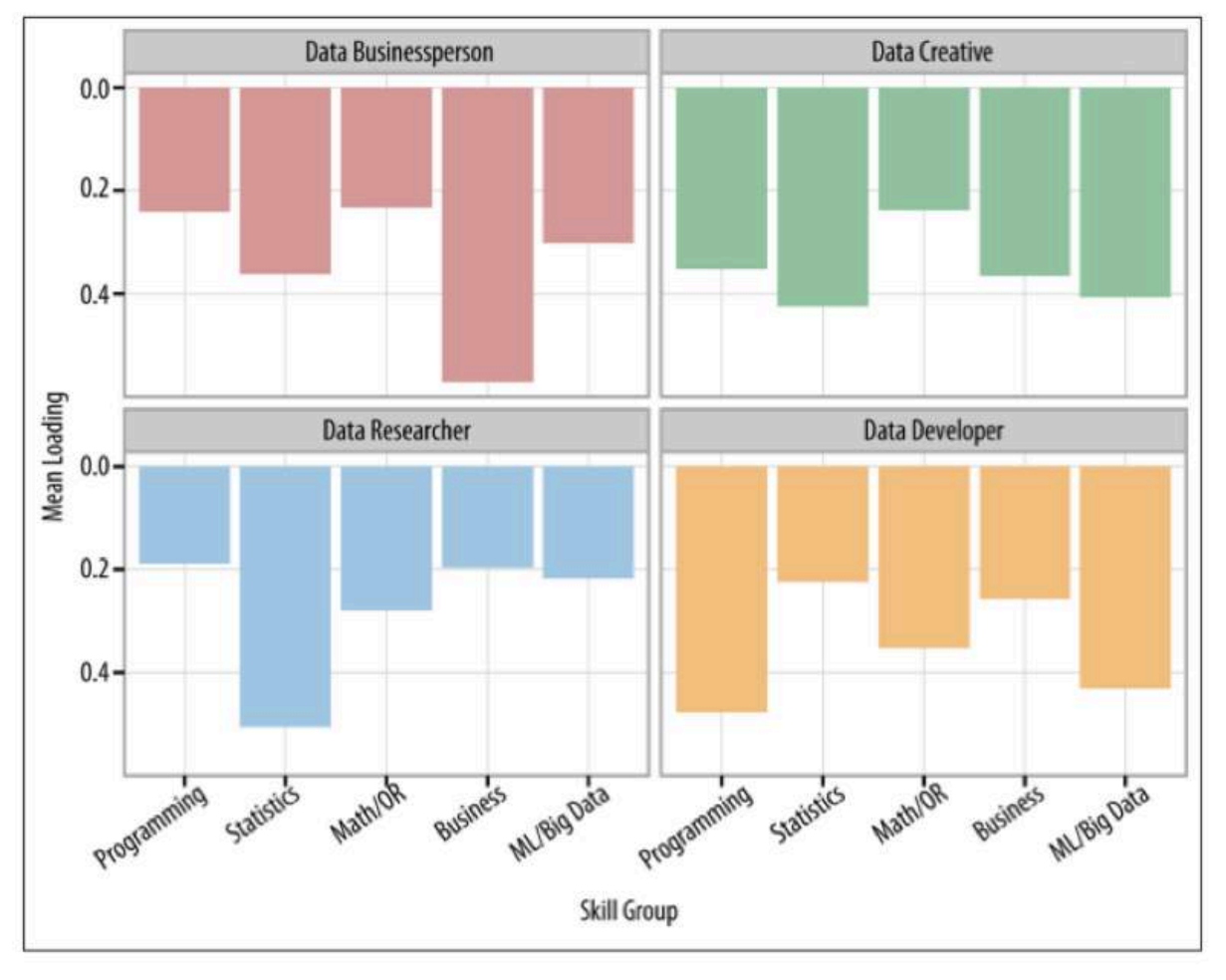
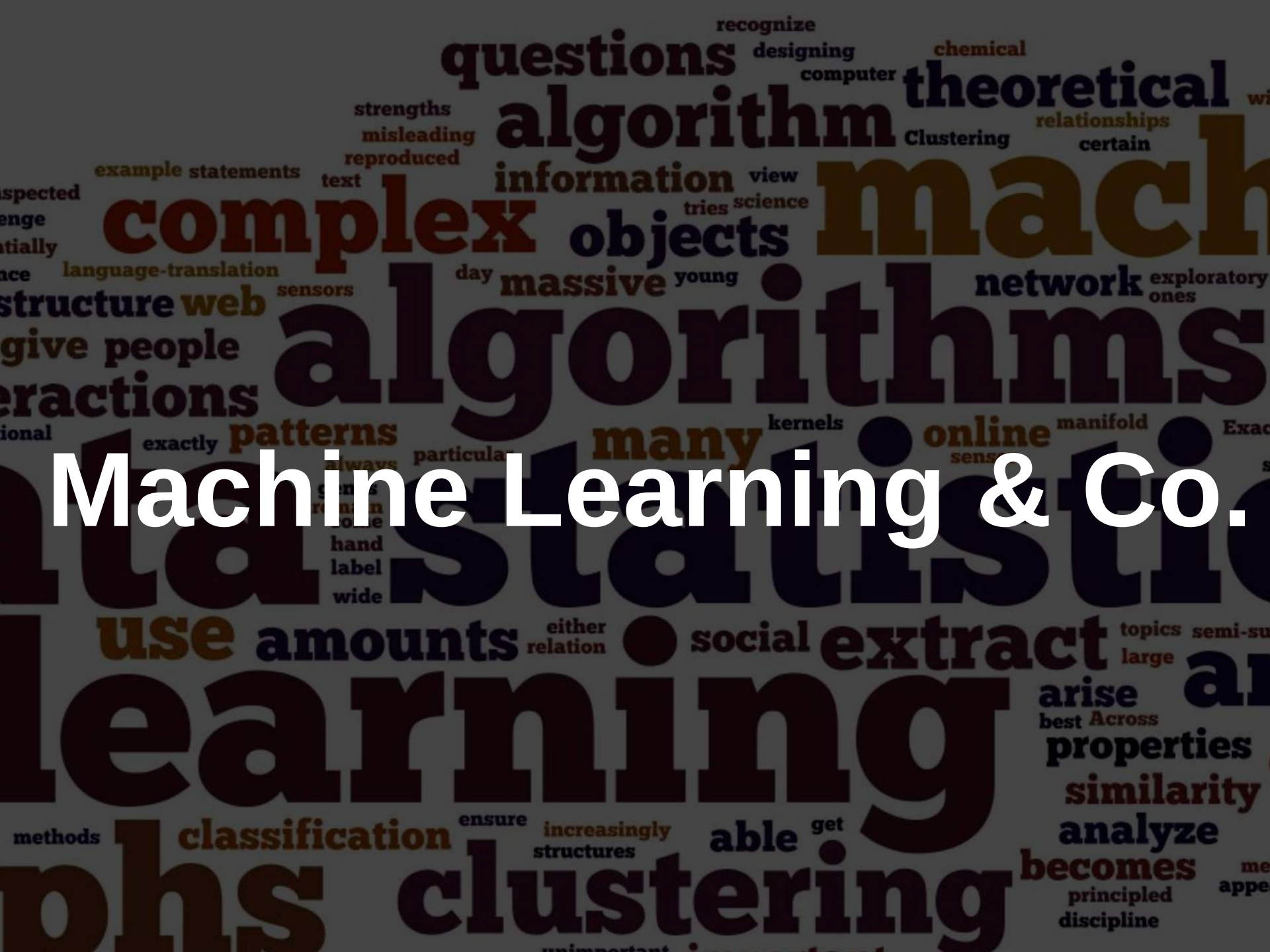
What we also need ..

A Great Team


Data Businessperson
Data Creative
Data Researcher
Data Developer
Mean Loading
0.0
0.2
0.4
Programming
Statistics
Math/OR
Business
ML/Big Data
Skill Group

+ Algorithms


Magic?



Machine Learning & Co.

+ Programming


Python & Co.

Simple spectral analysis

An illustration of the Discrete Fourier Transform

$$X_k = \sum_{n=0}^{N-1} x_n e^{-\frac{2\pi i}{N} kn} \qquad k = 0, \ldots, N-1$$

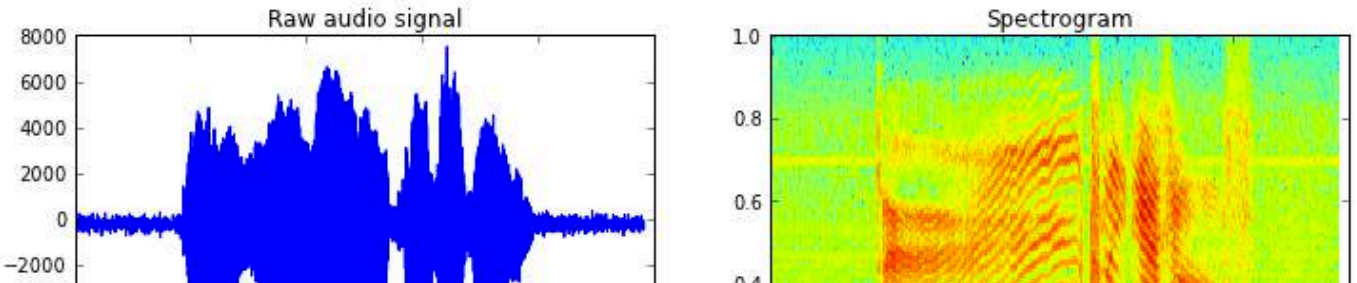
using windowing, to reveal the frequency content of a sound signal.

We begin by loading a datafile using SciPy's audio file support:

In [1]:
```
from scipy.io import wavfile
rate, x = wavfile.read('test_mono.wav')
```

And we can easily view its spectral structure using matplotlib's builtin `specgram` routine:

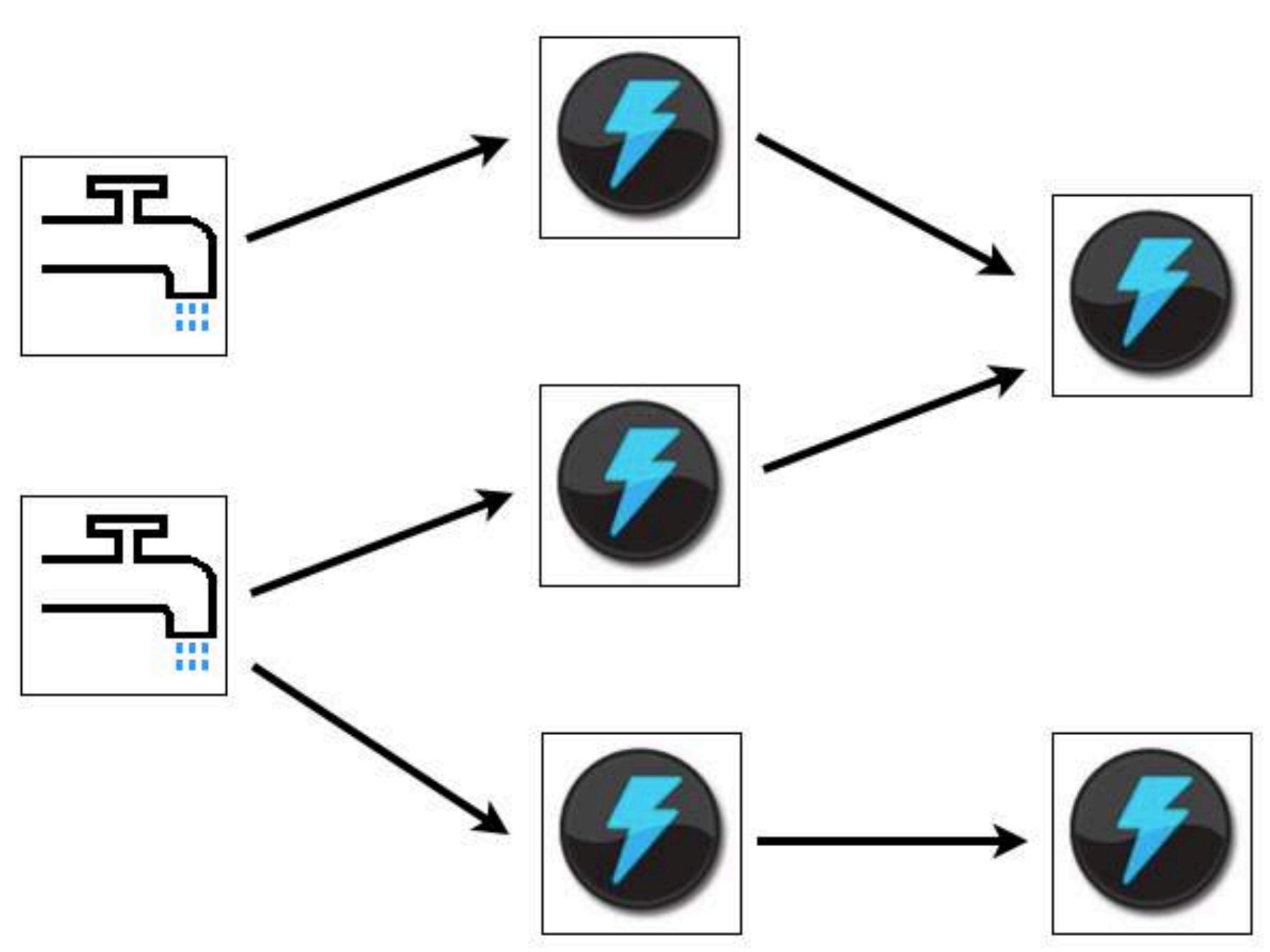
In [2]:
```
fig, (ax1, ax2) = plt.subplots(1, 2, figsize=(12, 4))
ax1.plot(x); ax1.set_title('Raw audio signal')
ax2.specgram(x); ax2.set_title('Spectrogram');
```




Hadoop & Co.

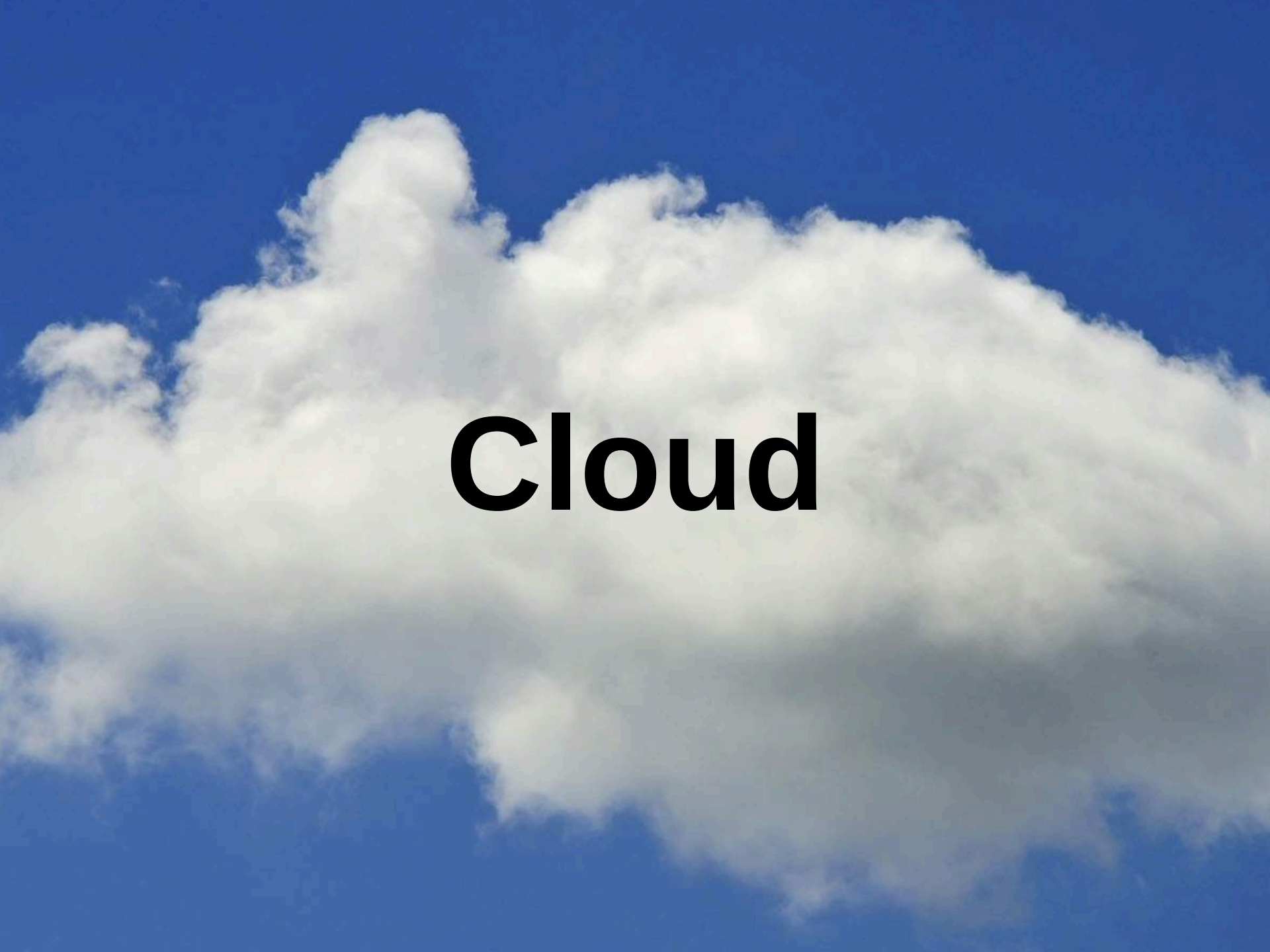
+ Stream processing

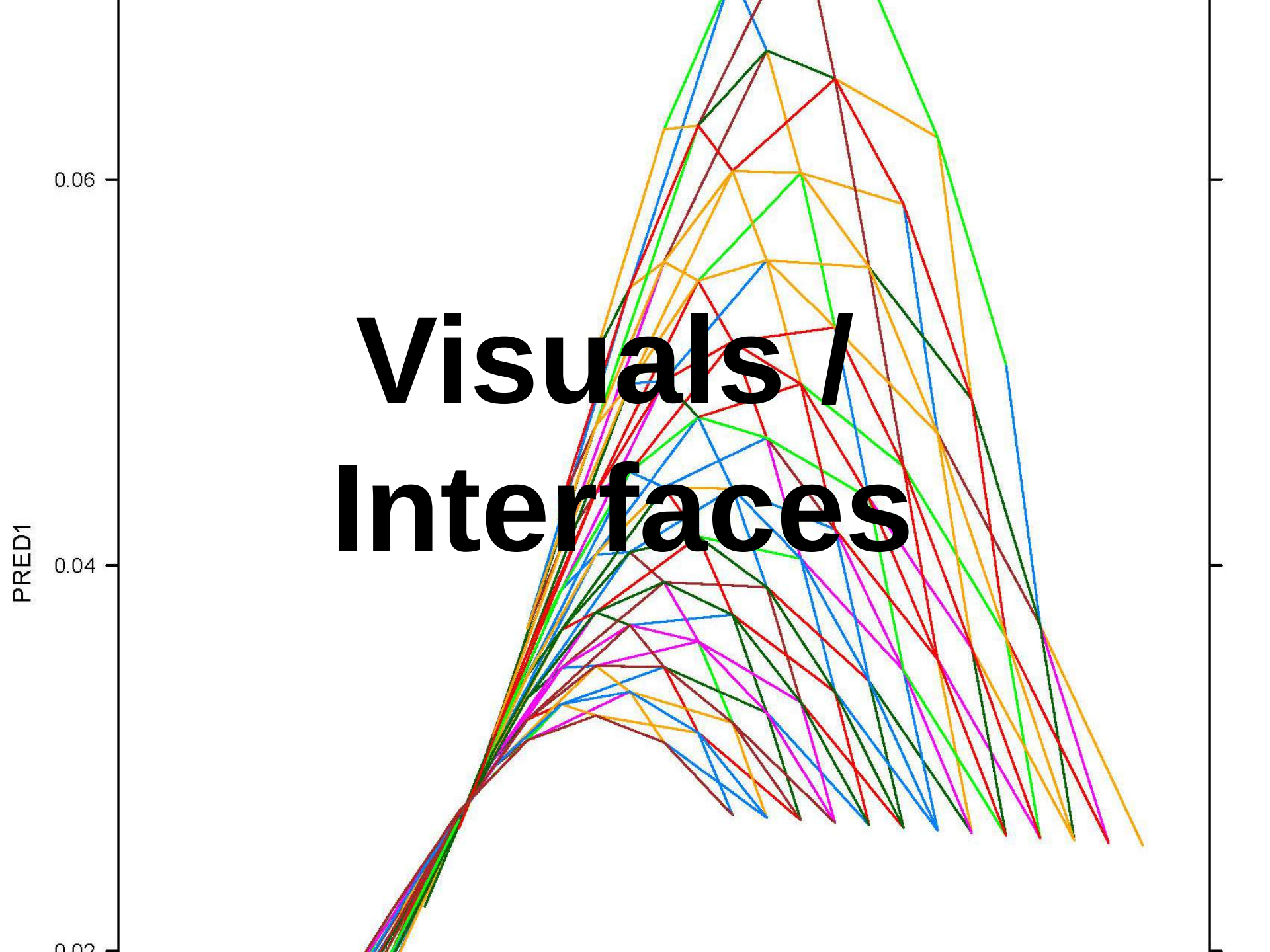

Storm & Co.



+ Infrastructure


Dedicated


Cloud


0.06
0.04
0.02
PRED1
Visuals /
Interfaces

Thanks 2!

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