Is communication important for applied analytics?

Scott Spencer | Columbia University

Becoming a group, introductions

Name

Experience

Idea or thing of interest

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Scott Spencer

Columbia University

Faculty, Lecturer, Alumnus

Teaching and Research

Communicating uncertainty
Writing monograph and literature review on quantitative persuasion amid uncertainty.

Doctor of Jurisprudence
Honors in research and writing
Focus — analysis

Developing generative models
Building Bayesian, generative models to enable decision-making in complex fields such as sports performance.

Master of Science
Sports Management
Focus — data science analytics
Won, SABR analytics competition

Consultant, Data Scientist

Bachelor of Science
Chemical Engineering
Focus — numerical methods, statistical process control

Professional sports
Major-league baseball research and development for player performance and manager decision-making
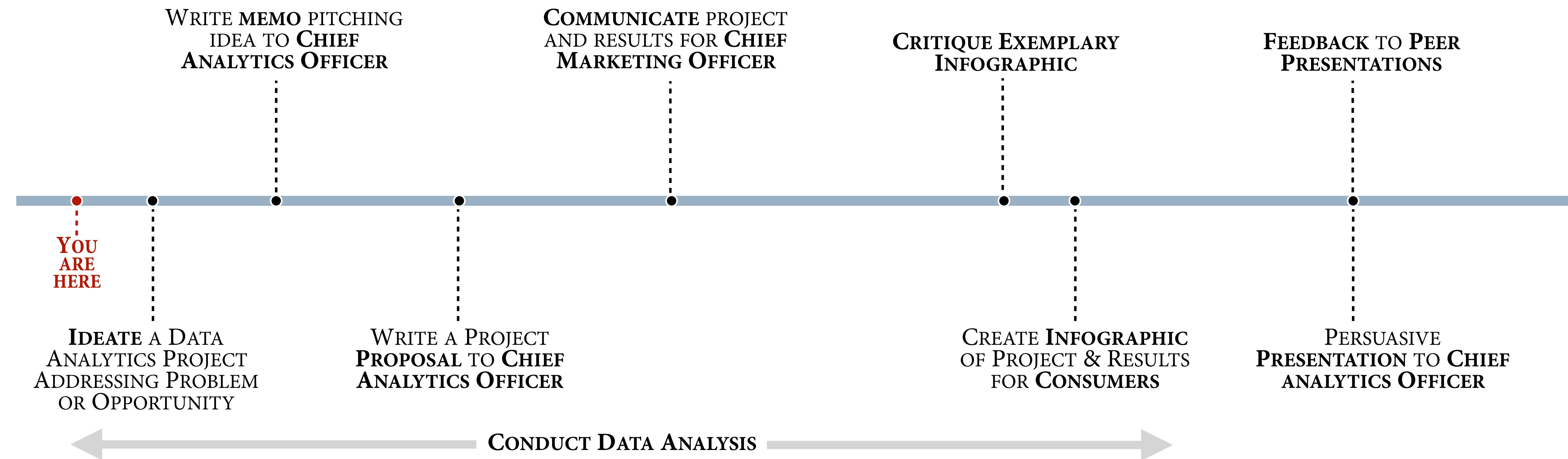
Data for good
Bayesian, generative modeling the geospatial and temporal impact of sea level rise on property values

A course objective, we want to maximize:

$$p\left(\text{persuasion} \;\middle|\; \begin{array}{c} \text{objectives} \\ \text{audience} \\ \text{data} \\ \text{analysis} \\ \text{storytelling} \end{array} \right)$$

Conceptual project timeline

WRITE MEMO PITCHING IDEA TO **CHIEF ANALYTICS OFFICER**

COMMUNICATE PROJECT AND RESULTS FOR **CHIEF MARKETING OFFICER**

CRITIQUE EXEMPLARY INFOGRAPHIC

FEEDBACK TO **PEER PRESENTATIONS**

YOU ARE HERE

IDEATE A DATA ANALYTICS PROJECT ADDRESSING PROBLEM OR OPPORTUNITY

WRITE A PROJECT **PROPOSAL** TO **CHIEF ANALYTICS OFFICER**

CREATE **INFOGRAPHIC** OF PROJECT & RESULTS FOR **CONSUMERS**

PERSUASIVE **PRESENTATION** TO **CHIEF ANALYTICS OFFICER**

CONDUCT DATA ANALYSIS

Building your persuasive portfolio, **in this course**

As YOUR ULTIMATE PERSUASIVE TOOL, your portfolio is the single most important design exercise of your academic and professional career.
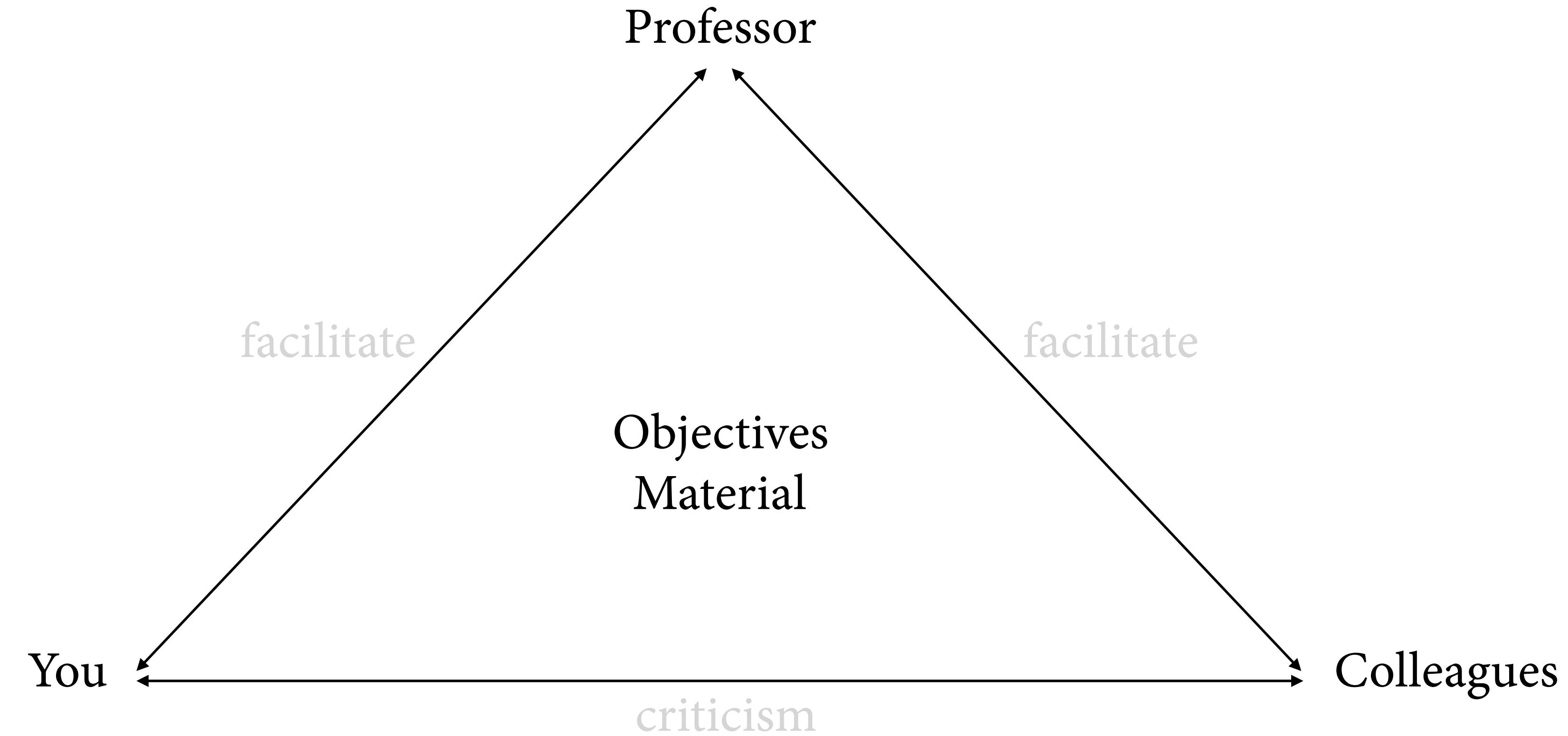
— Margaret Fletcher, 2017. *Constructing the Persuasive Portfolio*

Active learning, this course is your springboard

AN **ACTIVE LEARNER** asks questions, considers alternatives, questions assumptions, and even questions the trustworthiness of the author or speaker. An active learner tries to generalize specific examples, and devise specific examples for generalities.

An active learner doesn't passively sponge up information — that doesn't work! — but uses the readings and lecturer's argument as a springboard for critical thought and deep understanding.

Active learning, as a group

Professor

facilitate   facilitate

Objectives
Material

You ←   → Colleagues

criticism

Criticism

The analysis of the merits and weaknesses of a work supported by well-developed theories.

Yes, and …

Criticizing, the helpful way

When reviewing someone else's work, **center yourself on the purpose you both agree upon**, such as clarity, accuracy, or correctness. Structure the review.

Provide a global assessment, to place further comments in proper perspective. Point out weaknesses, to prompt improvements, but also strengths, to encourage the authors' willingness to revise the document and learn.

Your criticism should be in the form of applying the language and concepts we study.

Doumont, Jean-Luc

*Motivation,* **questioning the readings**
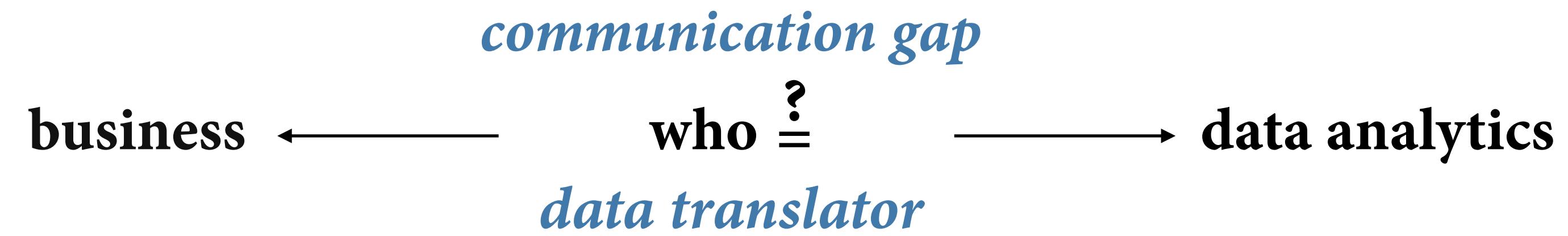
Companies need data translators

MIT Sloan Management Review's audience: "37% of MIT SMR readers work in top management, while 72% confirm that MIT SMR generates a conversation with friends or colleagues."

The three authors are professors and consultants focusing on sports management.

Brady, Chris. Co-authors.

communication gap

business   ⟵————   who $\overset{?}{=}$ ————⟶   data analytics

data translator

Brady, Chris

Data Science & the Art of Persuasion

"Harvard Business Review readers have power, influence, and potential. They are senior business strategists who have achieved success and continue to strive for more. Independent thinkers who embrace new ideas. Rising stars who are aiming for the top."

Scott is senior editor at Harvard Business Review.

Berinato, Scott

Qualities in an analytics team

project management
data wrangling
data analysis

subject expertise
design
storytelling

Berinato, Scott

What makes humans unique? *Persuasive stories.*

Sapiens. A brief history of humankind.

The truly unique feature of our language is … the ability to transmit information about things that do not exist at all.

Telling effective stories is not easy. The difficulty lies not in telling the story, but in convincing everyone else to believe it…

Harari, Yuval Noah

What are *data* stories?

Andrews, R.J.

Examples, data stories?

Storytelling with data

Her audience: "anyone who needs to communicate something to someone using data."

The author is a consultant focused on visual displays. Her experience arose from human resources in Google where she applied theory learned as a student of Yale's Edward Tufte.

Knaflic, Cole

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Please approve the hire of 2 FTEs
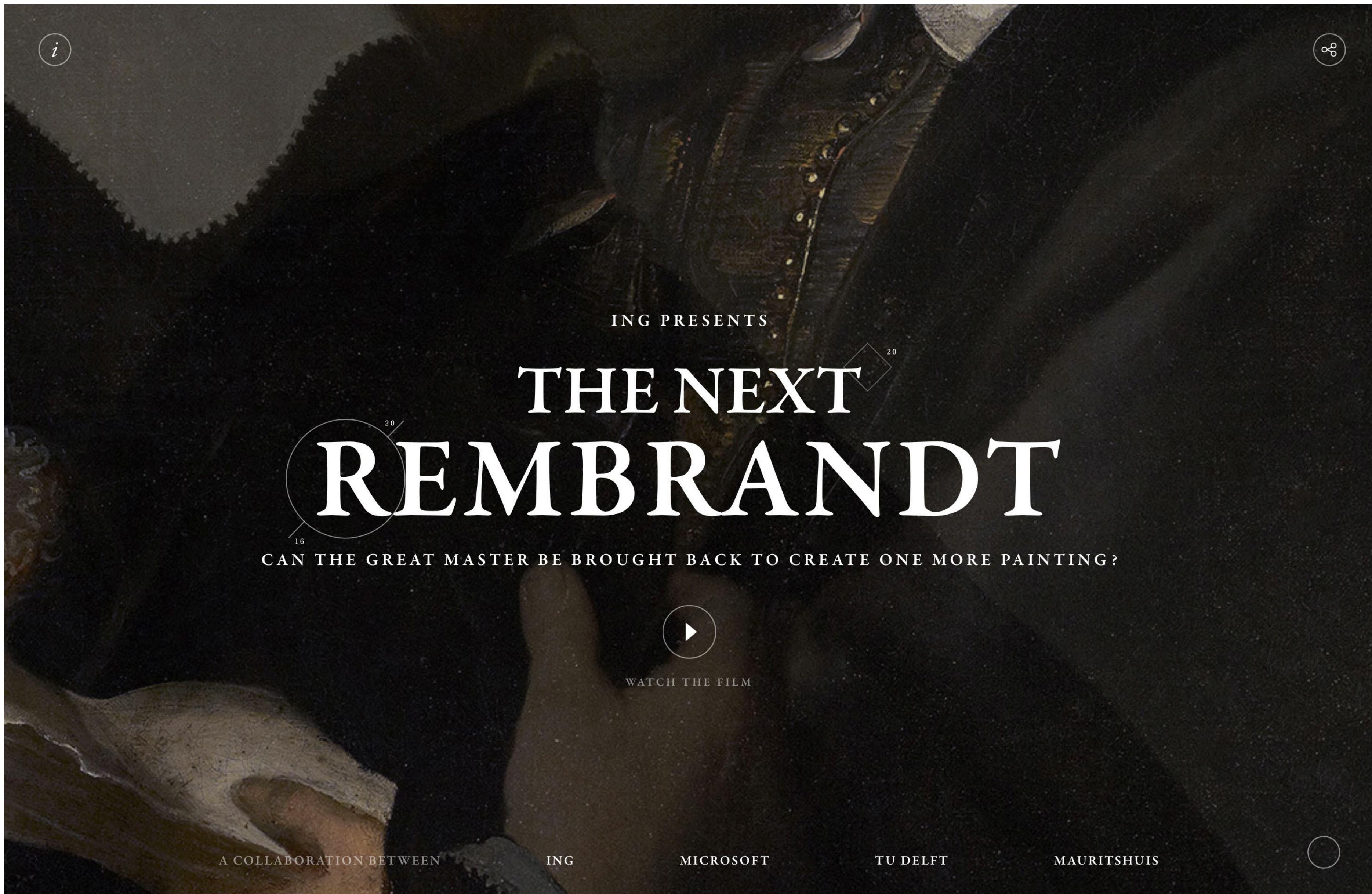
to backfill those who quit in the past year

Ticket volume over time

2 employees quit in May. We nearly kept up with incoming volume in the following two months, but fell behind with the increase in Aug and haven't been able to catch up since.

Number of tickets (y-axis: 0, 50, 100, 150, 200, 250, 300)

Received: 202, 160, 139, 149, 177
Processed: 156, 126, 104, 124, 140

x-axis: Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
2014

Data source: XYZ Dashboard, as of 12/31/2014 | A detailed analysis on tickets processed per person and time to resolve issues was undertaken to inform this request and can be provided if needed.

Knaflic, Cole

Examples, **data stories?**

ING and collaborators

Exercise 1.1(Research possible projects). Research potential projects interesting to you. Identify a problem that an entity faces, or an opportunity they may not have fully explored. Locate publicly available data. Consider for what questions the data are potentially relevant to the problem or opportunity.

References

Andrews, R J. *Info We Trust: How to Inspire the World with Data.* Wiley, 2019.

Berinato, Scott. *"Data Science & the Art of Persuasion."* Harvard Business Review, December 2018, 1–13.

Brady, Chris, Mike Forde, and Simon Chadwick. *"Why Your Company Needs Data Translators."* MIT Sloan Management Review, March 2017, 1–6.

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Harari, Yuval Noah. *Sapiens: A Brief History of Humankind.* London: Harvill Secker, 2014.

Knaflic, Cole Nussbaumer. *Storytelling with Data. A Data Visualization Guide for Business Professionals.* Wiley, 2015.

Ing, Microsoft, Tu Delft, and Mauritshuis. *"The Next Rembrandt."* The Next Rembrandt, April 2016. https://www.nextrembrandt.com.

Watzlawick, Paul, Janet Beavin Bavelas, and Don D Jackson. *Pragmatics of Human Communication: A Study of Interactional Patterns, Pathologies and Paradoxes.* W. W. Norton & Company, 2017.