



# HOW BIG IS BIG DATA FOR AN INSURER LIKE AXA? CHALLENGES & OPPORTUNITIES

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**Philippe Marie-Jeanne**  
**Group CDO & Head of the Data Innovation Lab**

**[Philippe.mariejeanne@axa.com](mailto:Philippe.mariejeanne@axa.com)**

A photograph of Henri de Castries, CEO of AXA, speaking at a podium. He is wearing a grey suit, a white shirt, and a blue patterned tie. He has a microphone clipped to his lapel and is gesturing with his hands. The background is a purple screen with the text "Henri de CASTRIES" and "Directeur Général" visible.

*"Big Data is an economical and technological revolution...*

*...being defensive is a waste of time as it is unavoidable and lethal"*

*- Henri de Castries  
AXA CEO*

# Main Big Data **business initiatives** and **solutions**



Connected Devices



Predictive Behavior



Risk Management  
Advanced Analytics

## Acquisition



## Customer value



## Claims cost control



## UW & Pricing



## Breaking new insurance grounds



# The Data Innovation Lab as a transformation engine within AXA

AN INTERNATIONAL TALENT POOL

SPECIFIC METHODOLOGIES

A TEAM OF  
**50+**  
PEOPLE



DATA SCIENTISTS, DATA ENGINEERS, DATA MANAGERS, PROTOTYPERS

**3**  
SITES

PARIS  
(FRANCE)



SINGAPORE  
(CURRENTLY BEING SET UP)

BANGALORE  
(CURRENTLY BEING SET UP)

**77**

PROJECTS  
OPPORTUNITIES

**30**



DATA SCIENCE PROJECTS  
POC (PROOFS OF CONCEPT)  
AND PILOTS COMPLETED

**4**

DOMAINS

MORE THAN **100,000**  
GO OF DATA COLLECTED

OVER **1000**  
OF DATA FEATURES  
COLLECTED IN THE DATA LAKE



DATA!

A TEAM OF SELECTED EXPERTS

PLATFORMS & TOOLS

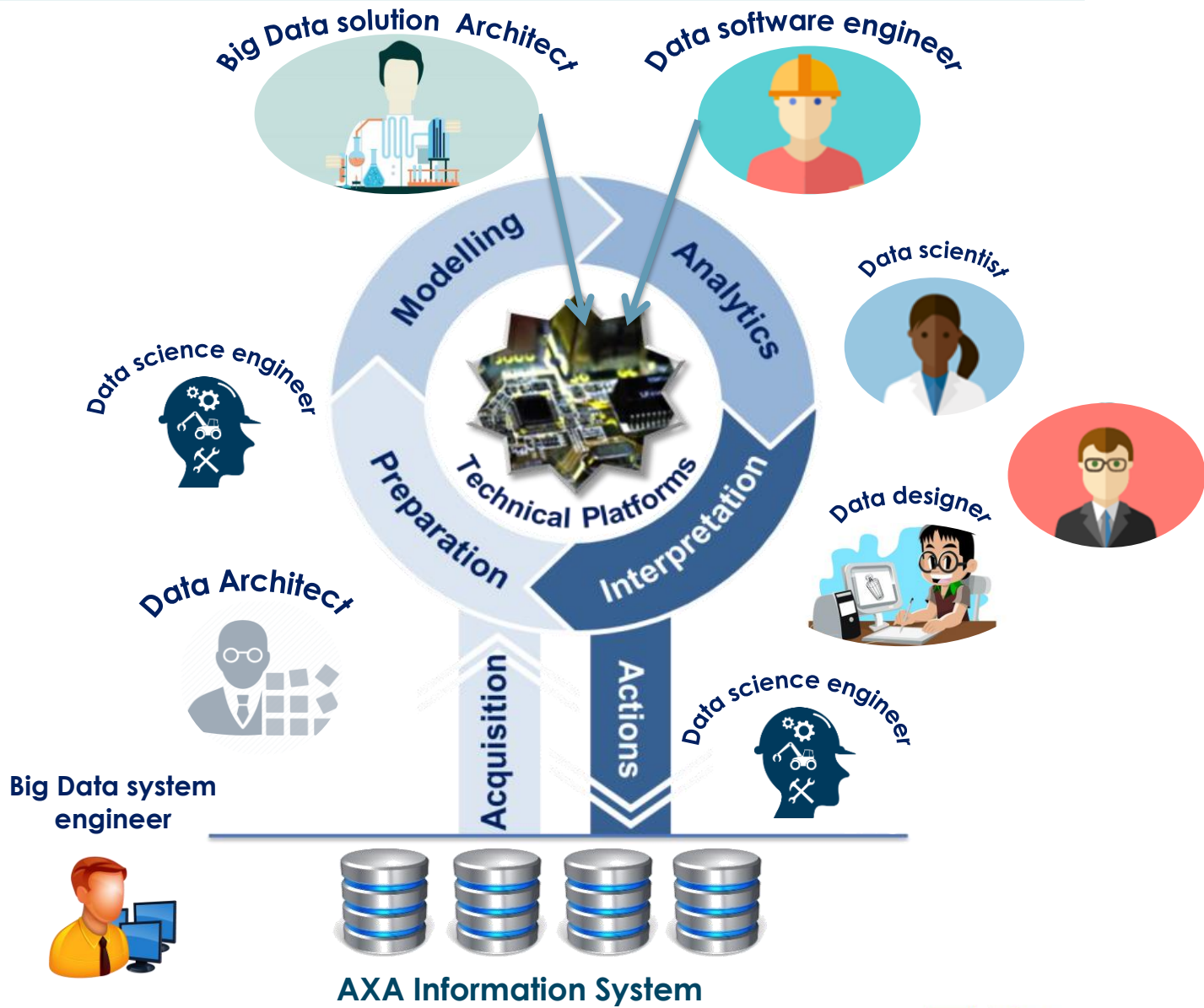
# The emergence of data science team



Project manager



Legal officer



# Is privacy (and ethic) becoming a luxury good? (from London Strata 2015)

## Compliance

### AXA.COM Commitment to transparency



**Why data privacy matters for AXA?  
AXA's Data Privacy Declaration**

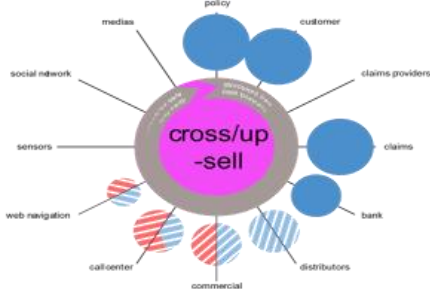


**Safeguard personal data  
Use of Personal Data  
Dialogue and Transparency**

**AXA's Data Privacy Advisory Panel**

## Compliance is at the core of our incubation process

### Data Privacy Framework



**Binding Corporate Rules**

**Data processing agreement**

**Data retention and life cycle management –GDPR compliance**

**Data residency policy**

**Anonymization process**



**PRIVACY BY DESIGN**

**Encryption  
IT architecture**

**Security test**

**Privacy impact assessment**

# Is privacy (and ethic) becoming a luxury good?

## Ethic



Contextualization  
and transparency

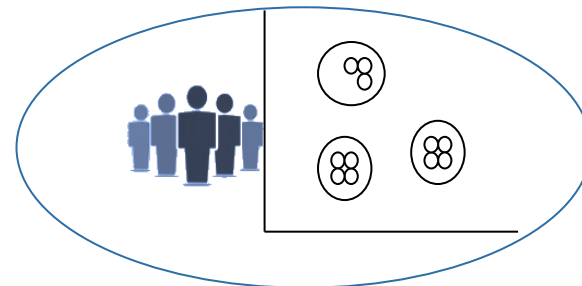


Privacy & inference  
Intrusive approach



Exclusion & non  
explicit  
Discrimination

End of  
Mutualisation ?

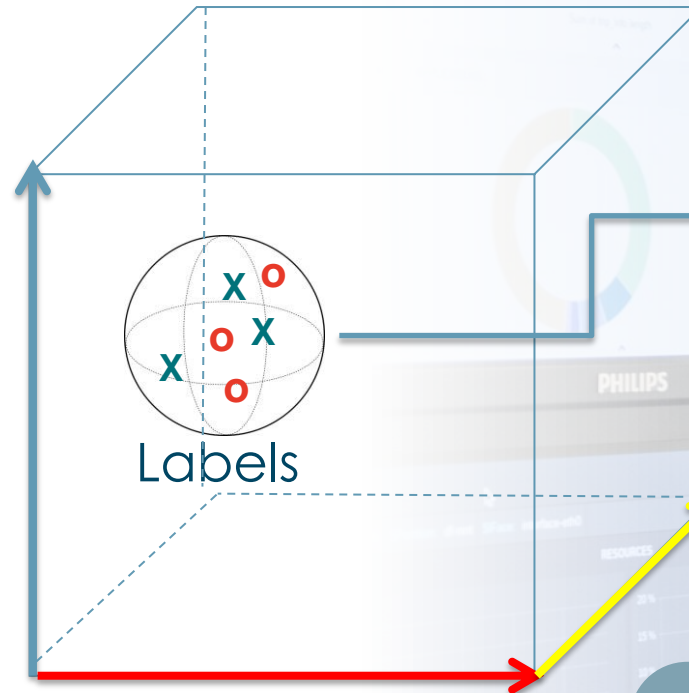


# Learning in the data cube\*

## > An industry perspective

n observations

Biased  
Redundancy  
Growing volume  
Real-time  
Low Meta data  
management Maturity



Biased  
Rare  
Imbalanced  
Noisy

d dimensions

Access to data  
Data quality (format, missing data, noise...)  
Historic duration  
Unstructured data  
Curse of dimensionality (generalization challenge)

k actions

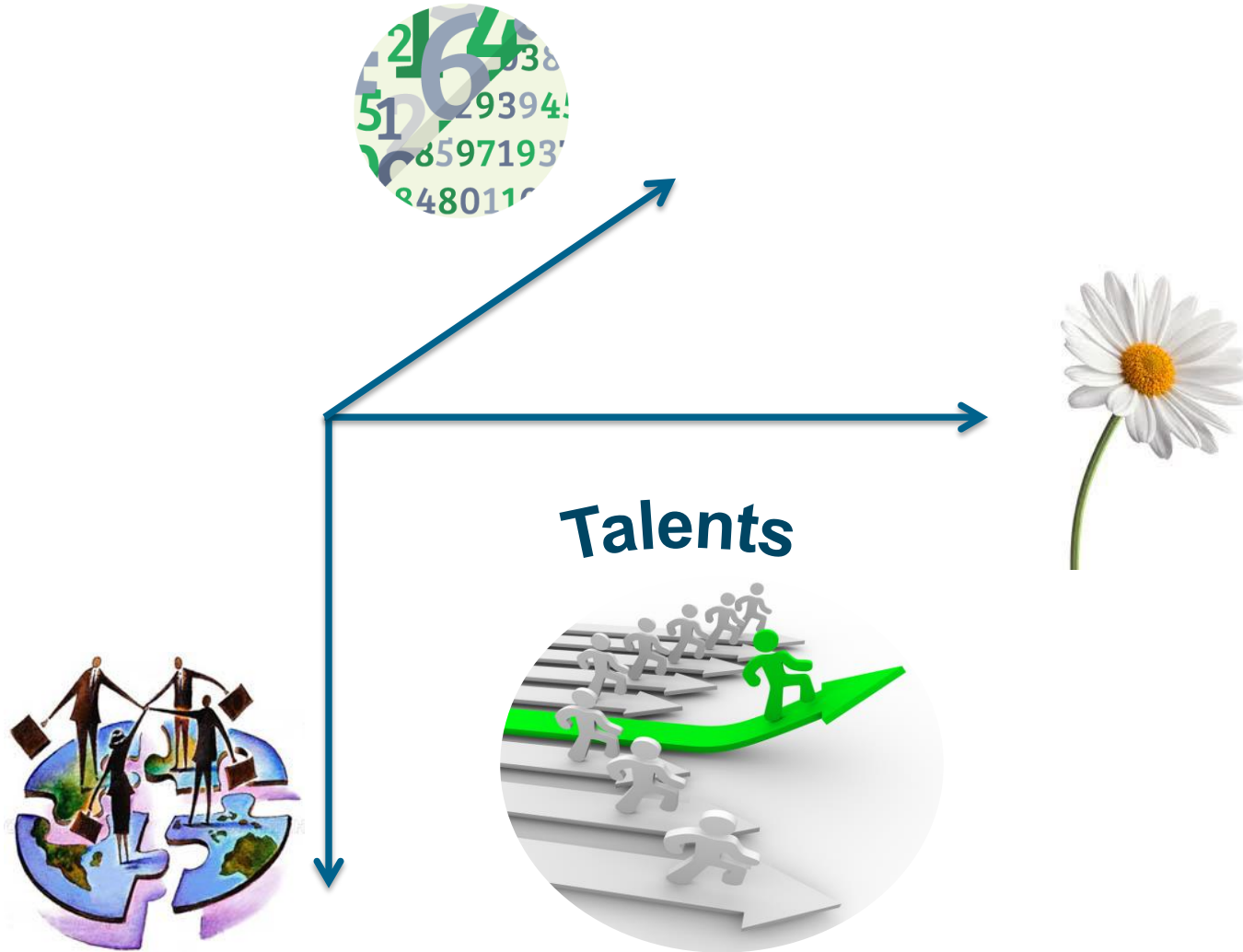
Personalized treatment learning (causal inference)  
Not randomized treatment  
Interpretability  
Reality  
Performance monitoring and causality (e.g. homophily vs influence, true lift)

\* From an idea of F. Bach



# How to really become data driven?

Key challenges to really change the business





# THANK YOU!

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Contacts

[Philippe.mariejeanne@axa.com](mailto:Philippe.mariejeanne@axa.com)