

# Big Data for labour market interventions



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Opportunities and risks of machine learning

# What's new?



*Today's business needs information that is:*

1. Real-time
2. Location-precise
3. Individual-specific
4. Robust

# What is Big Data?



WANTEDANALYTICS  
a CEB Company

For the Talent  
Marketplace

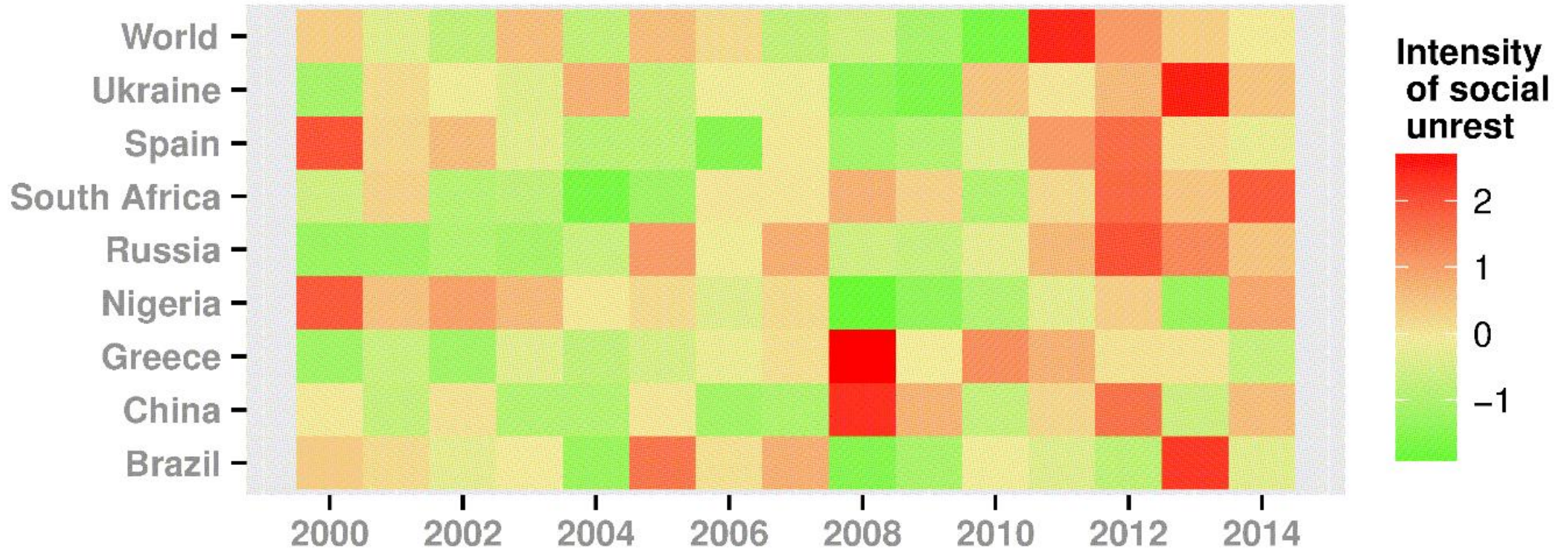


# How is it being used?



- Combine different data sources:
  - Official data, open source, social media and proprietary data
- Multi-dimensional analysis of data:
  - Combine individual characteristics with aggregate information (regional, national)
  - Analyse multi-faceted social outcomes (e.g. social network dynamics, mobility patterns)
- Use sophisticated statistical tools to detect relationships:
  - “Machine learning”: detect statistical relations automatically
  - Clustering to detect similarities between groups (consumers, employees, firms, etc.)

# Example: Social unrest



# Example: Communication

People connect through language

Text analysis for predictions

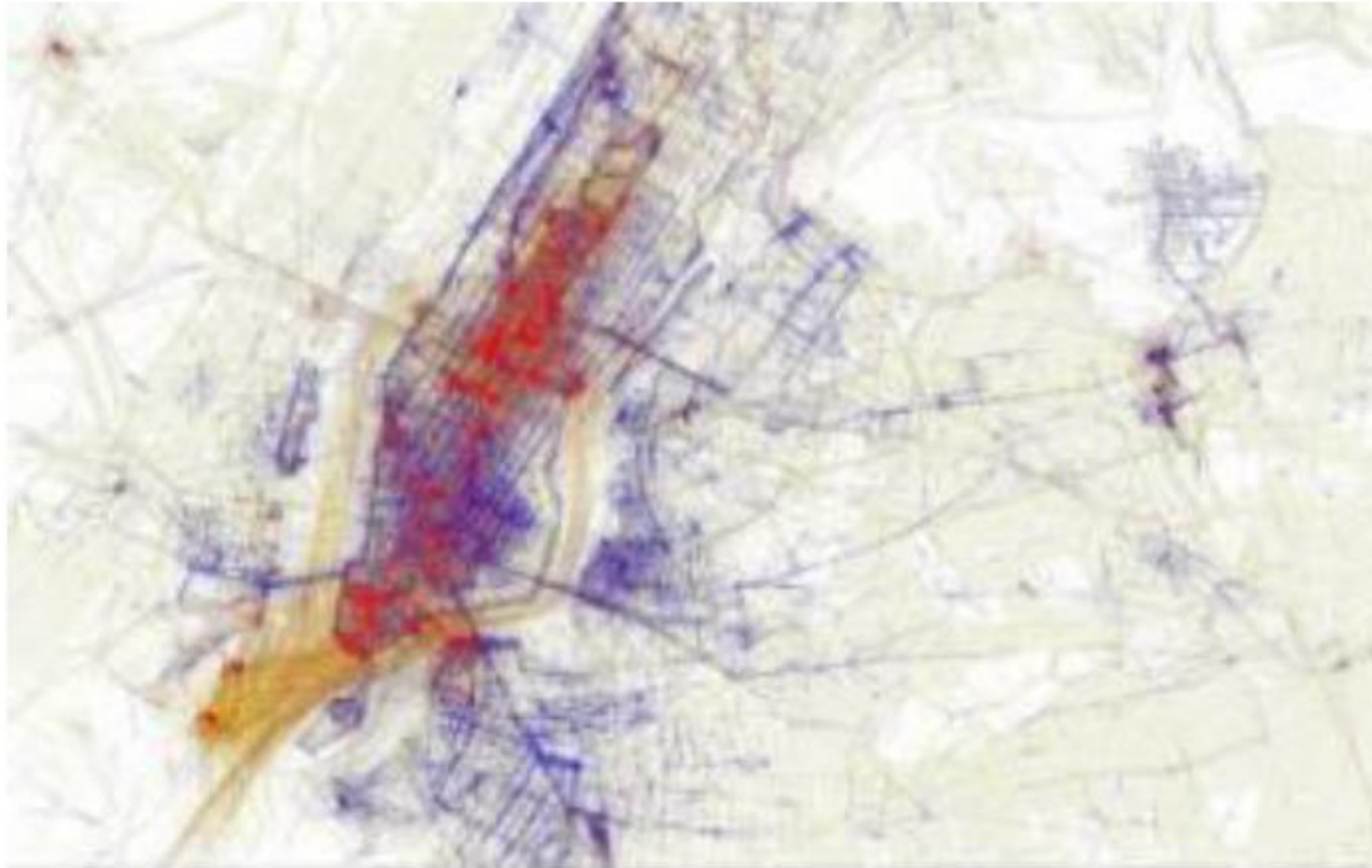
Most (social media) information only available as text

People's communication contains information about expected future(s)



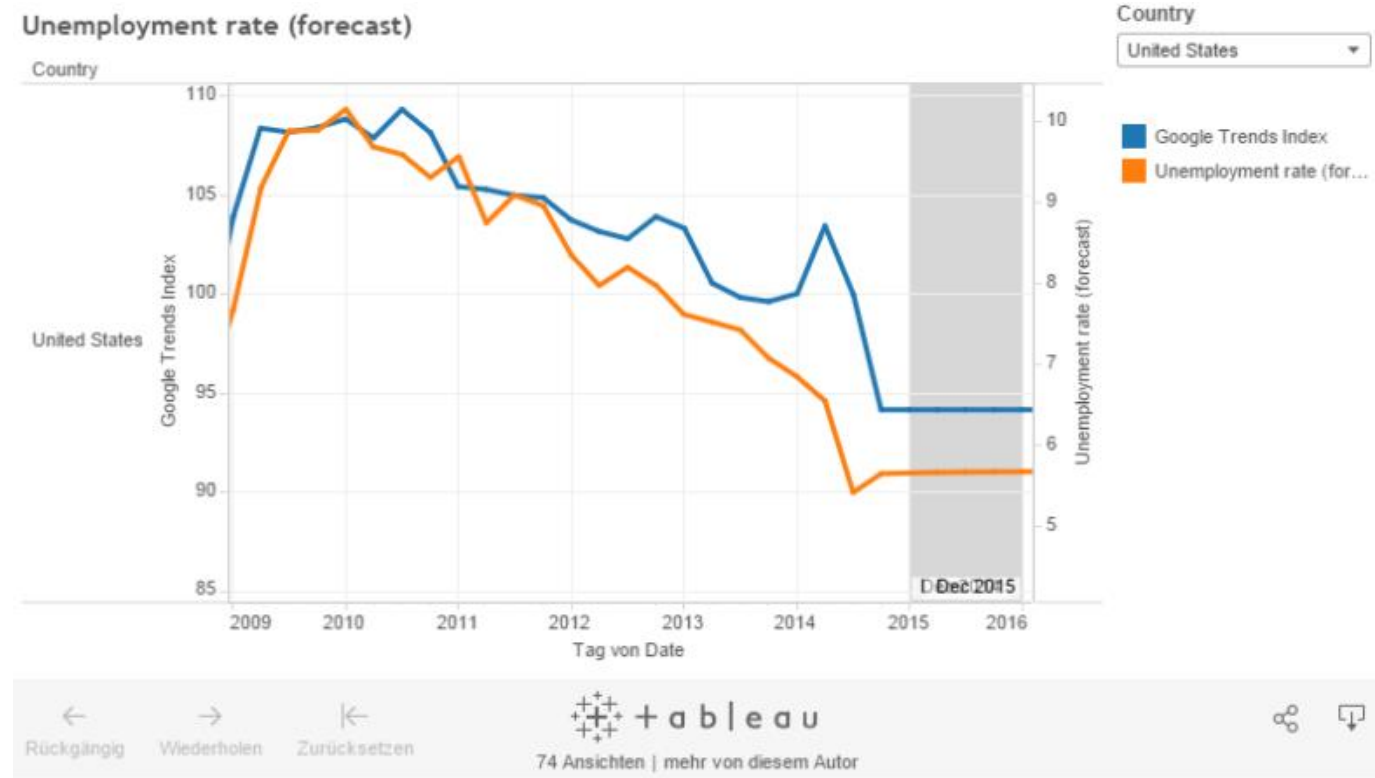
# What can policy makers learn from it?

More precise targeting of policies



# What can policy makers learn from it?

## Forecasting and manpower planning tools

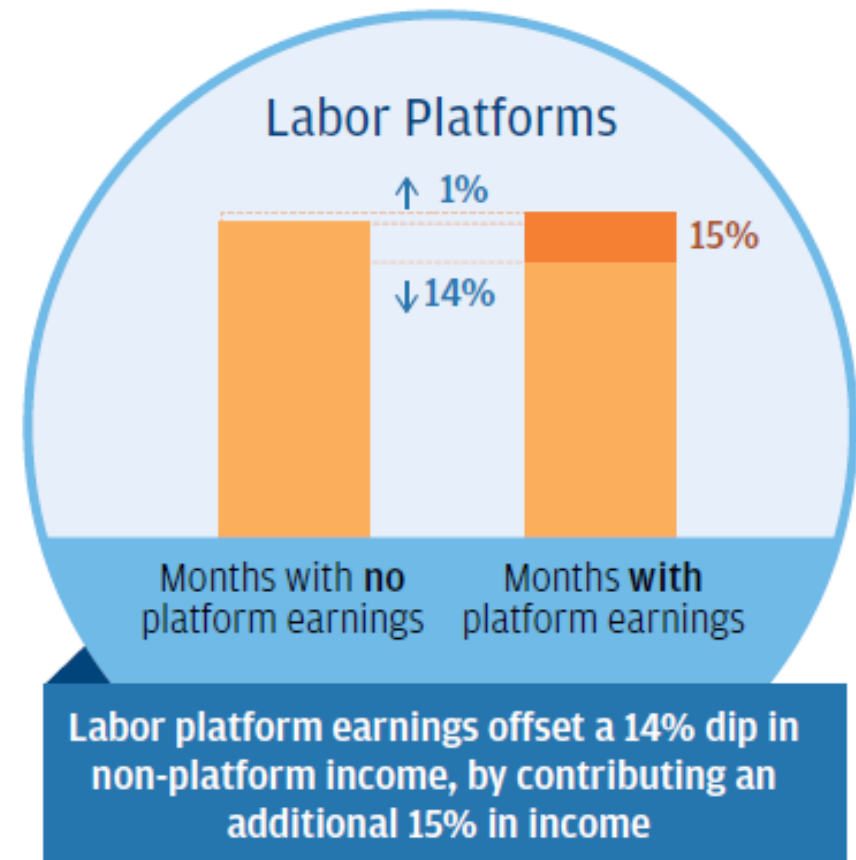
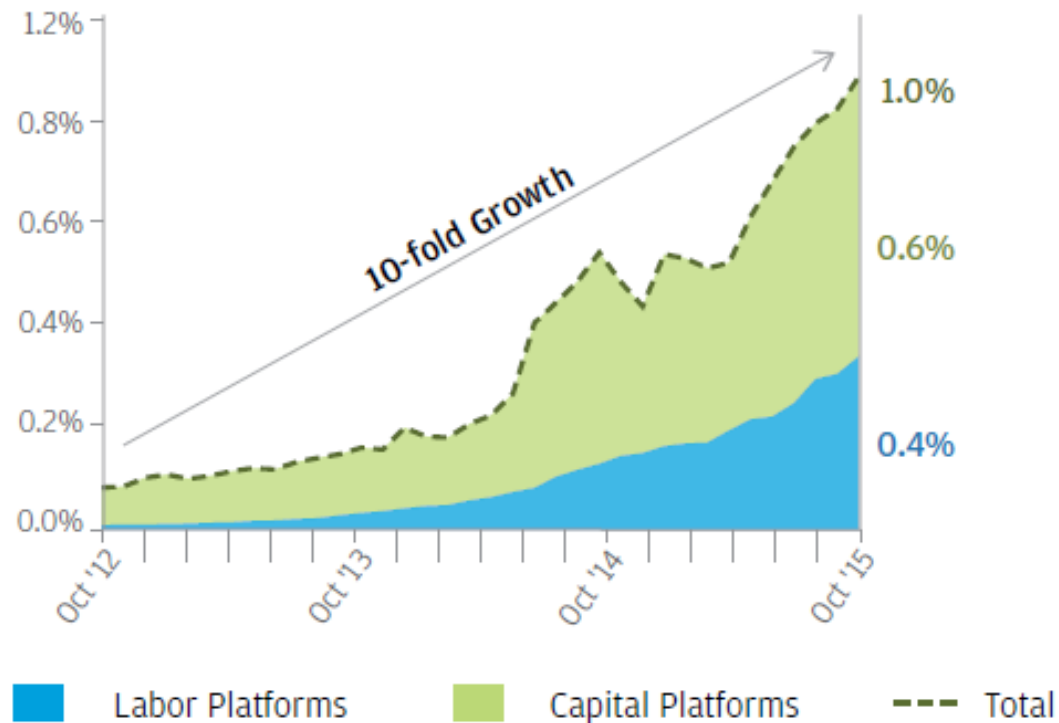




# What are the risks for labour?

Business risks shifted to crowd workers and contingent workforce

Percentage of adults participating in the Online Platform Economy in each month

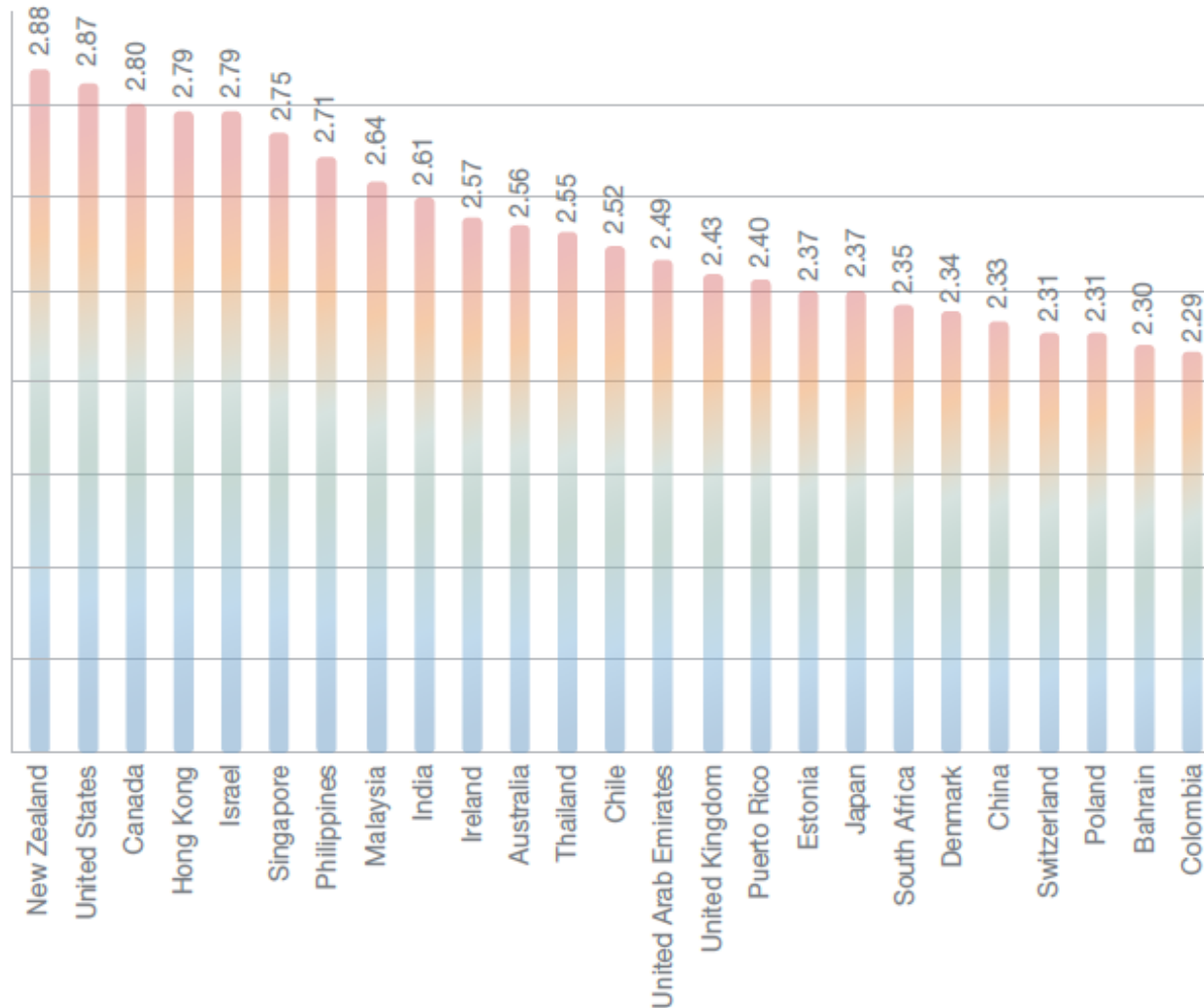


Source: JP Morgan, 2016. Paychecks, paydays and the online platform economy.

# What are the risks for labour?

Business risks are increasingly shifted to labour

HR analytics to optimize production stream



Source: Manpower, 2015. Contingent workforce index.

Temporary contracts and “zero-hour” contracts

Burden of adjustment falls entirely on labour

# What needs to be done?



- Enforcement of labour standards, including for contingent workforce
  - Avoid zones of “non-droit”, especially for temporary workers
  - Business risk must remain with businesses
- Use Big Data more intensively for policy purposes
  - Detect labour market shifts and talent shortages early on
  - Use it also for labour inspection: Where is enforcement particularly needed?
  - Target policies (geographically) for more efficient implementation of labour market policies

# In conclusion



- Big data allows to combine and exploit a wealth of information from different sources; but data ownership remains an issue
- Currently, private users have advantage in making use of this data for HR and business planning strategies; generate significant revenues
- Some of these efforts have created benefits for both employees and companies, others have shifted risks to more vulnerable groups
- Potential benefits in policy making and implementation remain underexploited
- Policy makers need to monitor Big Data HR-strategies to avoid undercutting of labour standards