



सत्यमेव जयते

Ministry of Finance  
Government of India



## AI and Big Data: The Challenges Ahead for Procurement

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*SMART Procurement : Application of ICT and other Tools*  
New Delhi, February 8, 2018

How distant is the  
distant future?



Post-Examiner

## Artificial Intelligence could spell the end of the human race

BY PAUL CROKE · JUNE 9, 2015 · NO COMMENTS



The future?  
Better  
postponed?

# MailOnline

Don't panic! \$249 'BabelFish' Pilot earphones can translate foreign languages in real-time



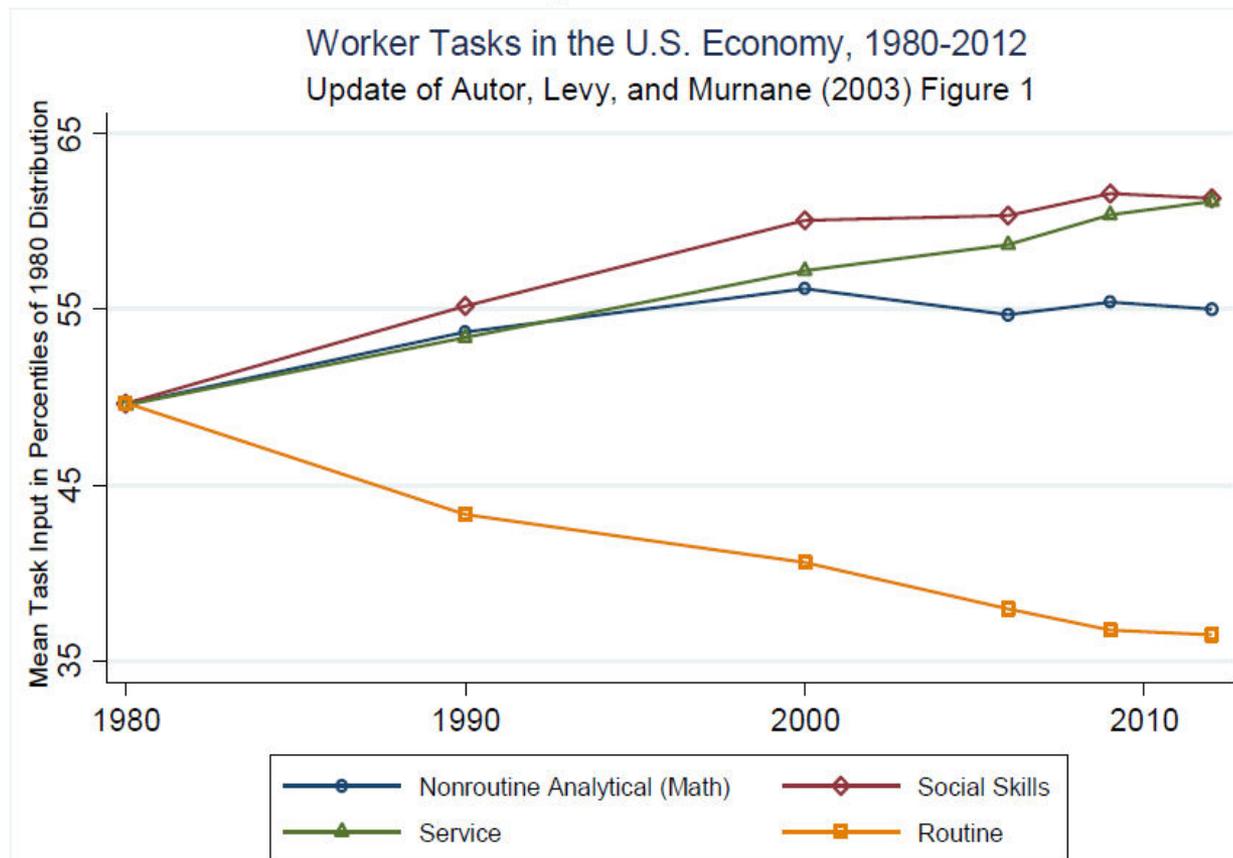
The future?  
Now



# The future procurer

The trend

Figure 3



**THE GROWING IMPORTANCE OF SOCIAL SKILLS IN THE LABOR MARKET**

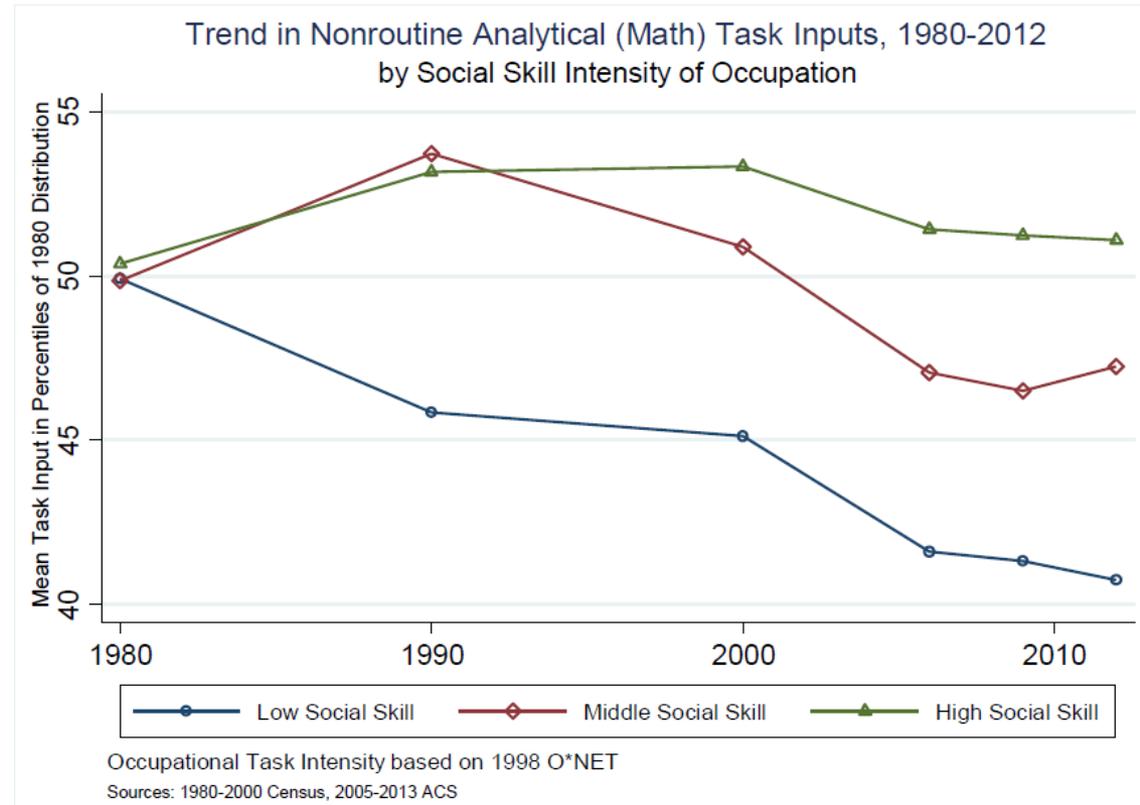
David J. Deming

## The Race against the Machine

- “In a much discussed paper, Frey and Osborne (2013) estimate that **47 percent of total U.S. employment is at high risk of automation over the next one to two decades**, suggesting that even highly skilled workers may eventually lose the “Race Against the Machine”.
- In this paper, I show that **high-paying, difficult-to-automate jobs increasingly require social skills**. Nearly all job growth since 1980 has been in occupations that are relatively **social skill-intensive**. Jobs that require high levels of analytical and mathematical reasoning but low levels of social interaction have fared especially poorly.
- Why are social skills so important in the modern labor market? The reason is that **computers are still very poor at simulating human interaction. Reading the minds of others and reacting is an unconscious process, and skill in social settings has evolved in humans over thousands of years**. Human interaction in the workplace involves team production, with workers playing off of each other’s strengths and adapting flexibly to changing circumstances.
- **I relate the growing importance of social skills to advances in information and communication technology (ICT)** that have shifted the organization of work toward flexible and self-managed team structures, job rotation and worker multitasking.”

Social dominance

Figure 6



**THE GROWING IMPORTANCE OF SOCIAL SKILLS IN THE LABOR MARKET**  
David J. Deming

Where is the  
Procurer?



Source: David Deming, Harvard University

## THE GROWING IMPORTANCE OF SOCIAL SKILLS IN THE LABOR MARKET

David J. Deming

## Procurers

The table below ranks 772 occupations according to their probability of computerisation (from least- to most-computerisable).

- 146. **0.03** Purchasing Managers
- 272. **0.29** Wholesale and Retail Buyers\*
- 458. **0.77** Purchasing Agents\*\*
- 715. **0.98** Procurement Clerks

\*Except Farm Products

\*\*Except Wholesale, Retail, and Farm Products

**THE FUTURE OF EMPLOYMENT: HOW SUSCEPTIBLE ARE JOBS TO  
COMPUTERISATION?**

**Carl Benedikt Frey and Michael A. Osborne**

## Conclusion?

Standardized procurement is NOT here to stay: **let it go**;

Complex procurement WILL stay: **let it grow**;

How? More competences, more accountability, more discretion, **more data**, less waste, more resources (and away from lowest price).

PS: more centralization with more ICT? Not necessarily. See South Korea that centralizes information and not tenders, with SME-friendly policies.

# Big Data or No Data?

New world:  
good or bad?  
**Governance**  
matters  
for **data** impact



What could go wrong?

## MIGHT NOTHING CHANGE? FROZEN DATA

- Data might be available but no “handyman”: the role of **competence**
- Does data availability improve society or does society improve data availability? Data are often hidden (Bandiera, Prat and Valletti, AER) or incomplete (see many many database)
- What might make data release and availability **more palatable**? See later.

## MIGHT THINGS GET WORSE? BURNING DATA

- Sure! Imagine a **journalist** getting a hold of data that show that procurer A bought an item at a lower price than procurer B. How many will blame procurer B?
- **Civil society**? Analysis of the use of the word «corruption» in social networks points to partisan use of it, not investigative or analytical.
- What might prevent the wrong use of data?
- Competence **and selectivity** in data user?

The «integrity»  
issue with data

Bandiera, Valletti, Prat on **waste**:

**Data** are key for waste in procurement

**HOW MUCH PUBLIC MONEY IS WASTED, AND WHY? EVIDENCE FROM A  
CHANGE IN PROCUREMENT LAW**

**Oriana Bandiera, Andrea Prat, Tommaso Valletti,  
American Economic Review**

«Integrity»  
and...

Bandiera, Valletti, Prat on **waste**:

«X% of waste is due to corruption (1-X)% to inefficiencies».

Data in  
procurement  
identify  
«**thieves**»  
only?

Bandiera, Valletti, Prat:

«17% of waste is due to corruption, 83% to  
inefficiency».

Integrity? Framing effect

# Data

Data are tales.

Tales are narrative, stories, fables: Powerful!

Negativity Bias exist: it is easier to remember bad things  
(see Trip Advisor)

Confirmation Bias exist: I look for I what I want to find

Lack of **Trust** through Bandwagon effects exist

## Trust, the vicious circle

One datum on corruption might entail belief that system is corrupt

Lack of Trust in Procurement

More rules, more risk-aversion, less innovation, **less data, less accountability, more waste, less resources.**

**No trust**

Alternative  
Governance?  
Risk-  
Management?  
Trust

- **If** procurement system is based on **trust** and accountability: why not data management?
- Why not exalt best practices through tales based on data?
- Why not engage the Public Administration even more than civil society? More competent!
- If benchmarking, why not benchmarking with respect to one's own (past) data and not with respect to others (cfr. OECD-WB Maps)? More precisely accountable, less stressful, more rewarding, more incentives!

**Would this allow for greater openness and data availability?**

Trust, the  
virtuous  
circle

One (dozen) data on competence and  
excellence might entail belief that system is  
competent



Trust



Discretion with accountability through **data**,  
better spend management, innovation,  
resources, careers for complex procurement  
with no incentive to quit



Trust and no corruption