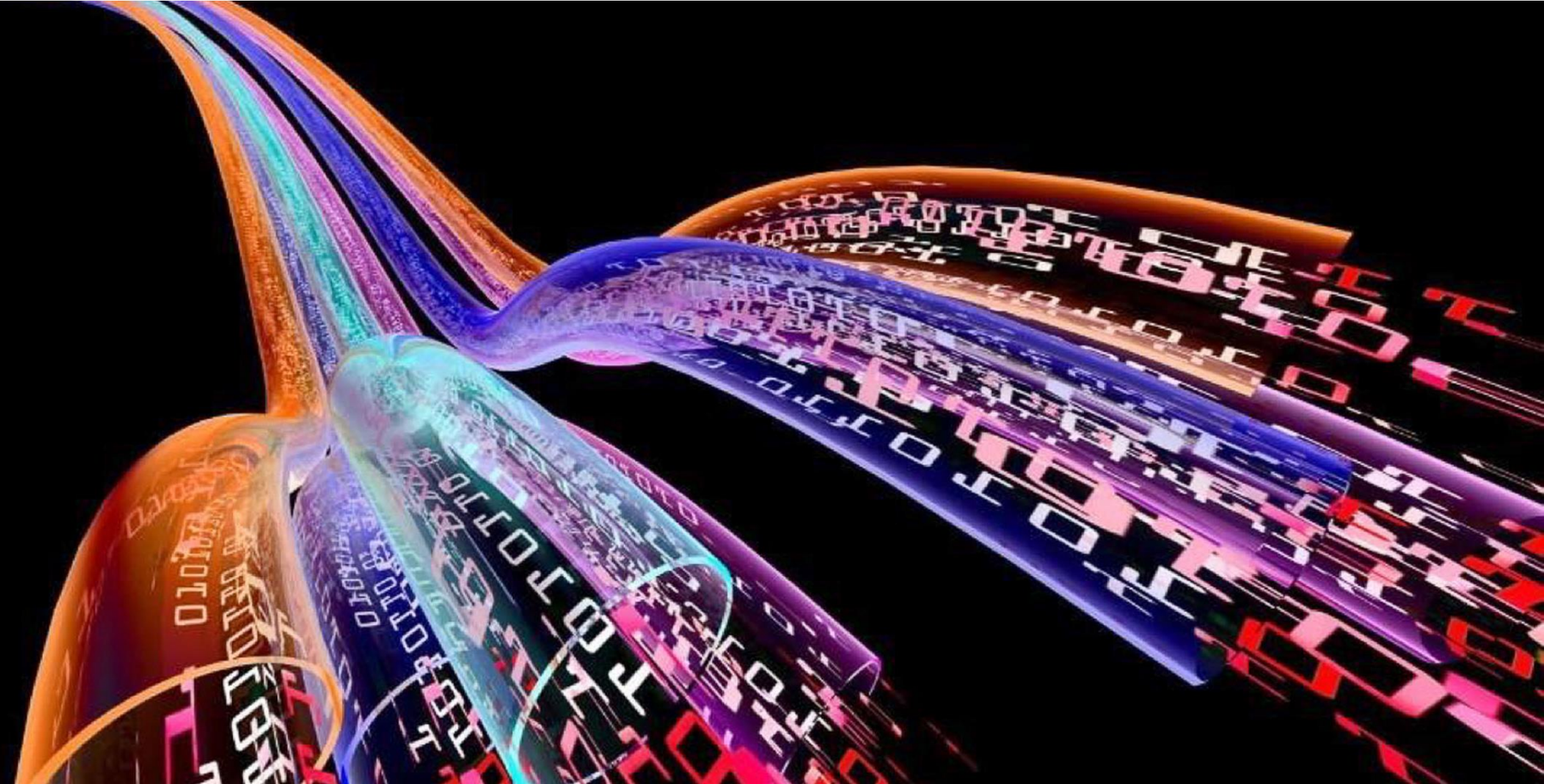
Automation and Jobs



OECD, April 29, 2016
Dr Jacques Bughin, Director,
McKinsey Global Institute

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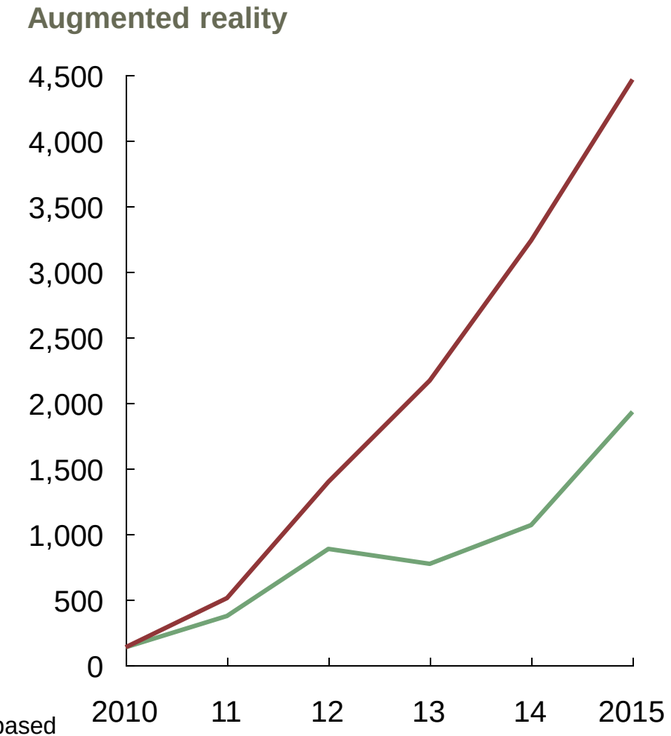
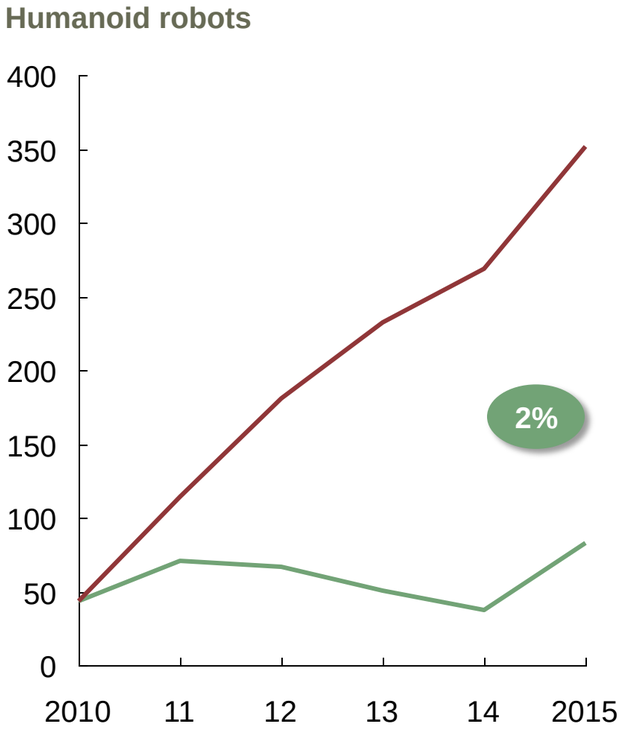
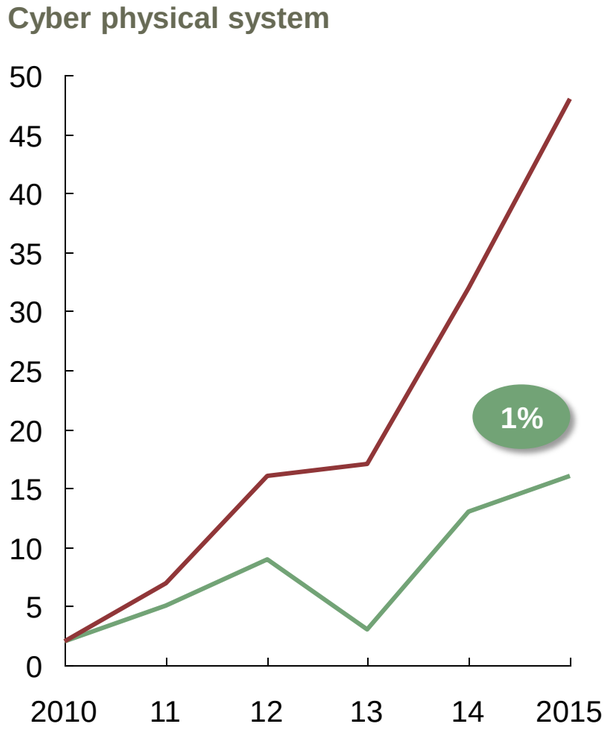
A.I. kicks in







Note: Approximated patents on a worldwide basis based on European patent office and scaled by relative search teams

SOURCE: IOT analytics; McKinsey analysis

Three messages

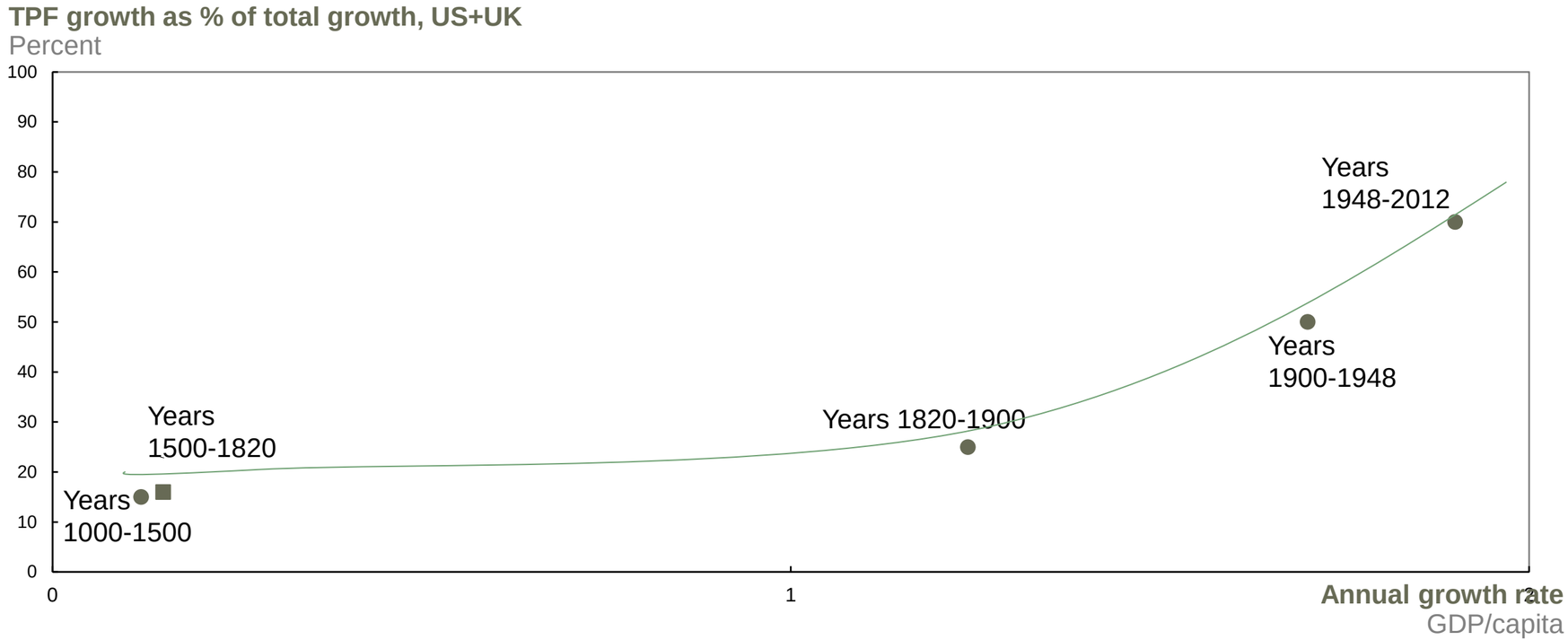
1. Total productivity growth **causes our prosperity: tech-based innovation is a mean to boost productivity**

2. The past has proven the **Luddites wrong** that productivity boost could not be shared

3. Currently, we have **a debate of conjectures, not based on framing the issues right, --the key question is more about redefining the future of work than complain about its disappearance**

“Pushing the frontier” is the main driver of prosperity

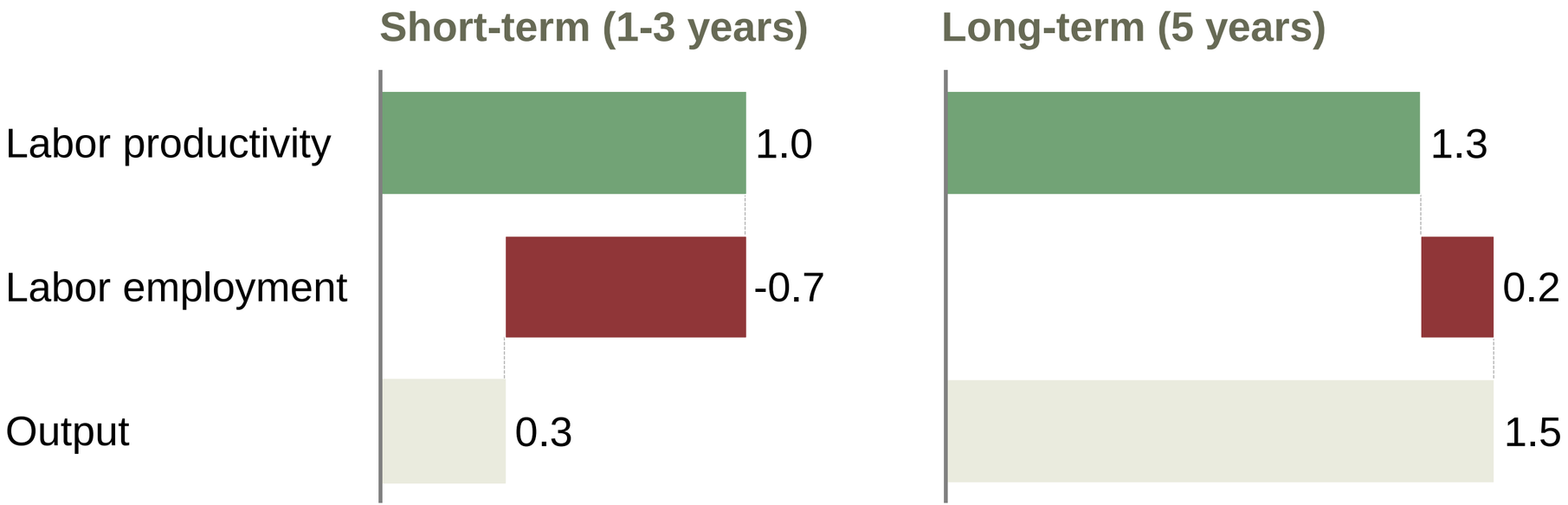
Percent



SOURCE: Maddison; OECD; Jones; McKinsey analysis

Luddites can be short-sided

Robot automation effect on manufacturing, Percent



SOURCE: AIM project; Kromann, Skaksen and Soresen, 2011, 2015, CEBR tech projects; McKinsey analysis taking the average of three labor demand specifications

Five framing variables

Adoption rates?
38% yet to automate

Traditional or new alternative jobs
+10 points share of alternative jobs in total jobs

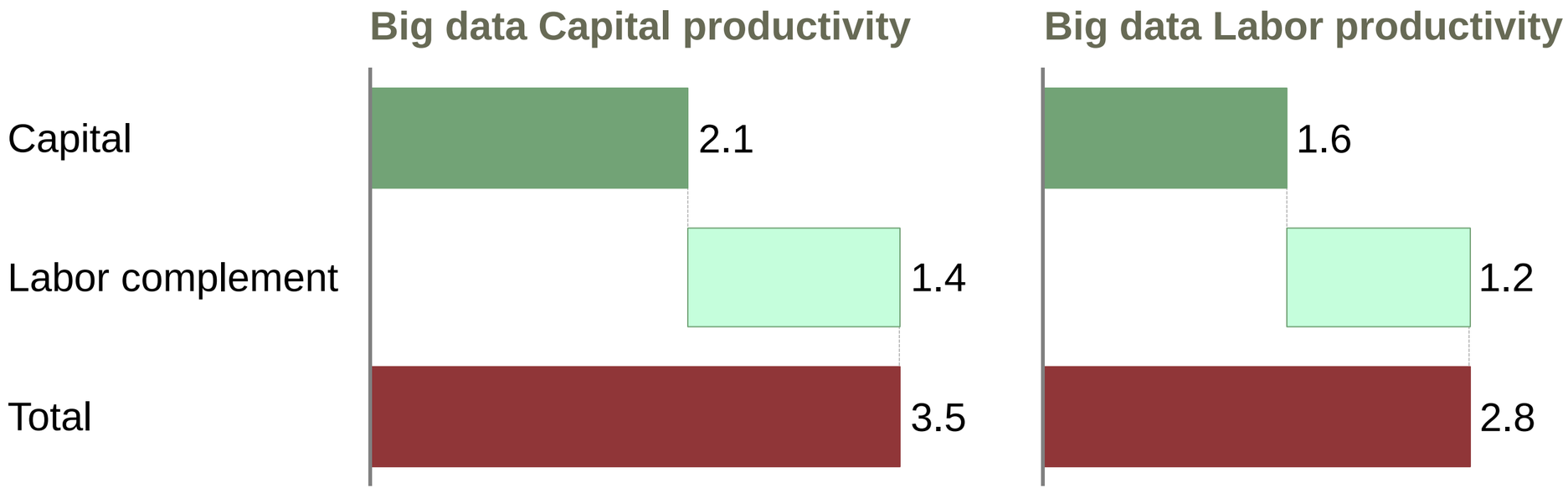
Complement or substitute?
40% of big data productivity arises from complement

New divide?
Weak negative correlation wage and automatability

Jobs or task?
20% of jobs have 80% of embedded tasks that can be automatisable

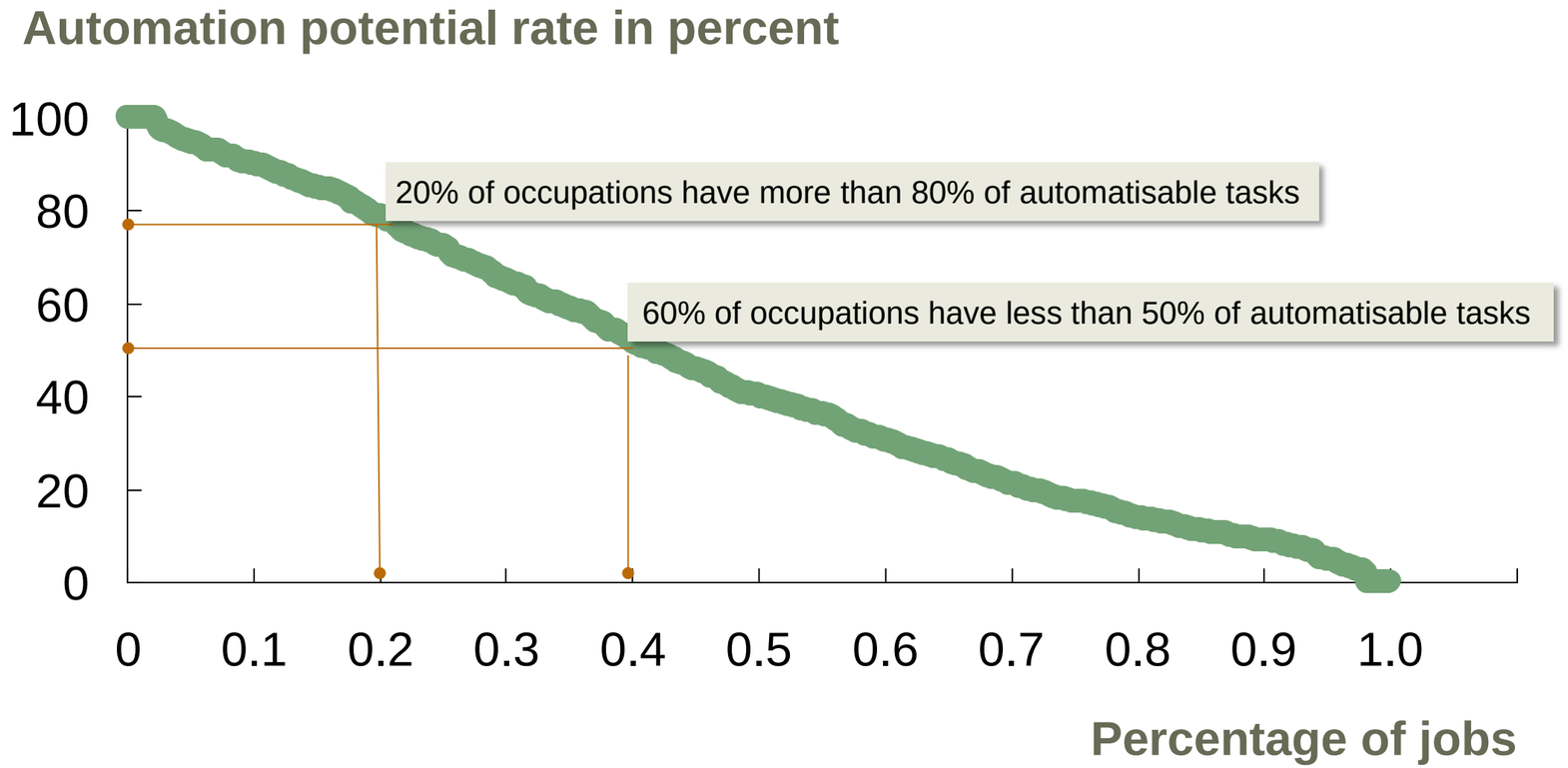
Big data complements

percent



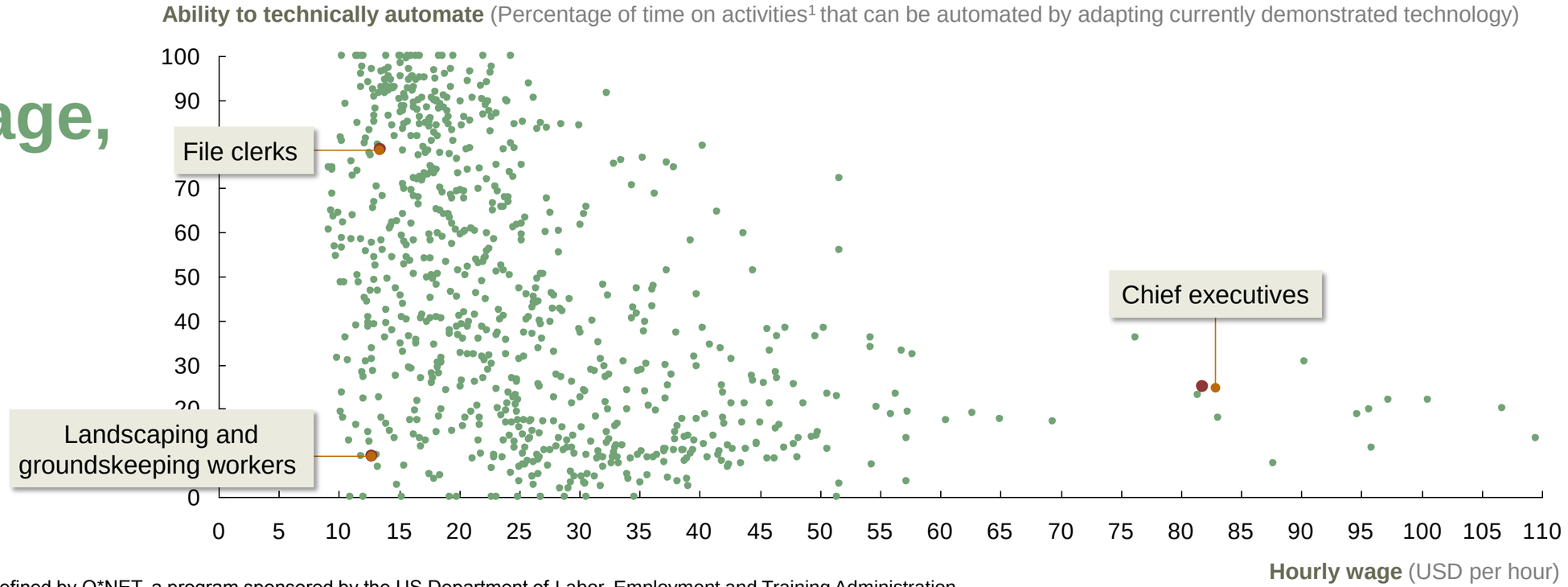
SOURCE: Jacques Bughin, “Big data, big bang”, Journal of Big Data, Springer (2016); Jacques Bughin, “Getting a better read on performance”, McKinsey Quarterly (2016)

20% of US jobs have 80% of automatisable tasks



SOURCE: O*Net 2014 database; McKinsey analysis

Automation is not low-wage, low-skill occupations



1 Our analysis used “detailed work activities”, as defined by O*NET, a program sponsored by the US Department of Labor, Employment and Training Administration
2 Using a linear model, we fine the correlation between wages and automatability in the US economy to be significant (p-value <0.01), but with a high degree of variability (r2 = 0.19)

SOURCE: O*Net 2014 database; McKinsey analysis

Five priorities

1. How can we ensure adequate research?
2. Are we doing enough to boost creativity, before entering the job market (read-education), and within the job?
3. Are we building the type of employment flexibility needed for this new world?
1. Are we ensuring the best complementary between jobs and the machine?
5. Are we leading the charge?

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