



Exponential Actuary™

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SAS GI Conference 2018

KEY TAKEAWAYS



Demands on Actuaries and opportunities for Actuaries are increasing as the business landscape transforms



How professionals do their work is fundamentally changing and will continue to change



Change is happening at an increasing rate, led by Exponential Technologies

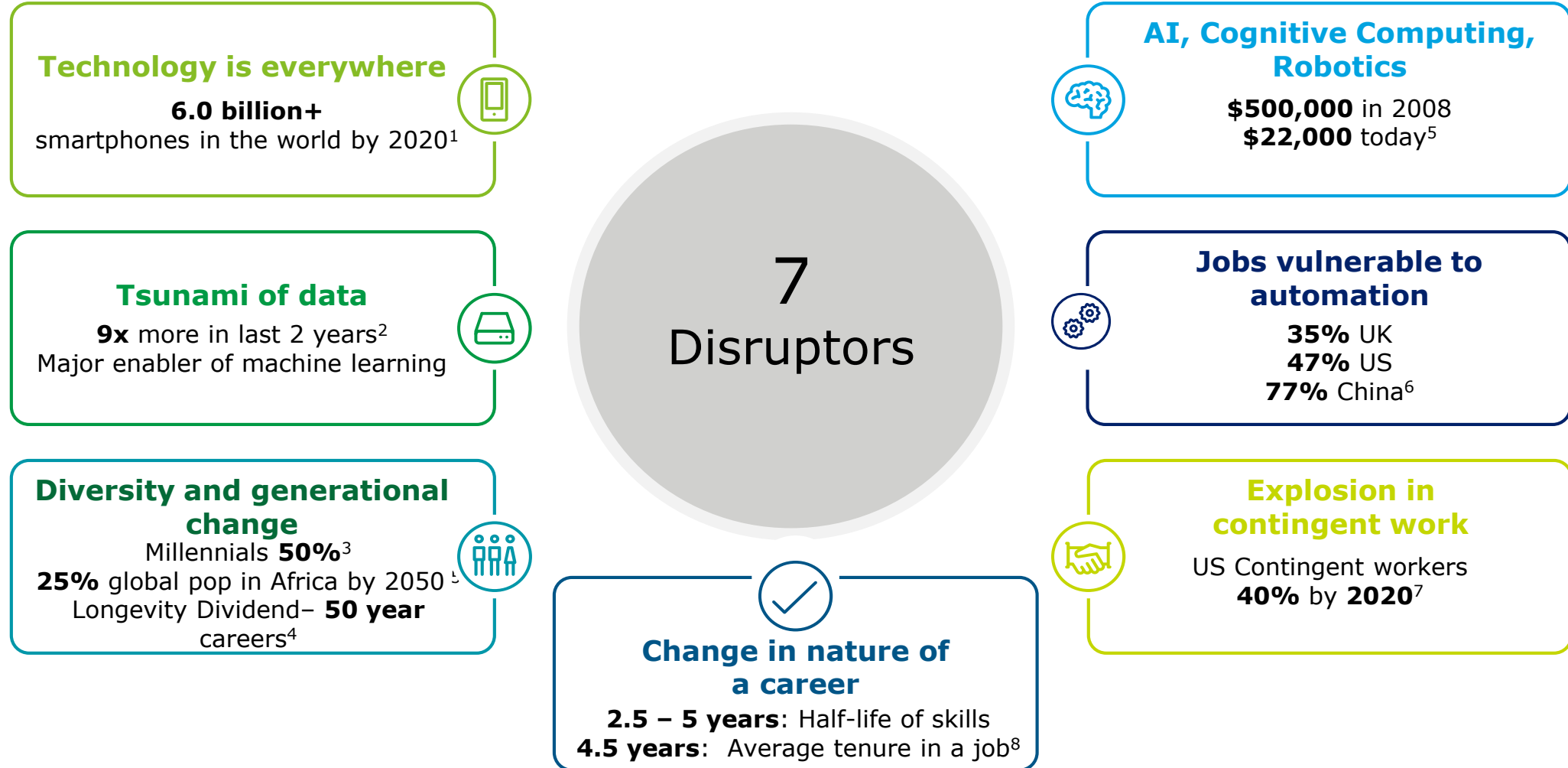


The future of work will be fundamentally different from today



Technical skills and enduring skills will be valuable despite this change

WE ARE LIVING IN A TIME OF UNPRECEDENTED CHANGE AND OPPORTUNITY



1 <https://www.cnn.com/2017/01/17/6-billion-smartphones-will-be-in-circulation-in-2020-ifs-report.html>

2 <https://www-01.ibm.com/software/data/bigdata/what-is-big-data.html>

3 Annual Global Millennial Study, <https://www2.deloitte.com/uk/en/pages/about-deloitte-uk/articles/millennial-survey.html>

4 <https://www.newscientist.com/article/mg23130810-800-the-100-year-life-how-should-we-fund-our-lengthening-lives/>

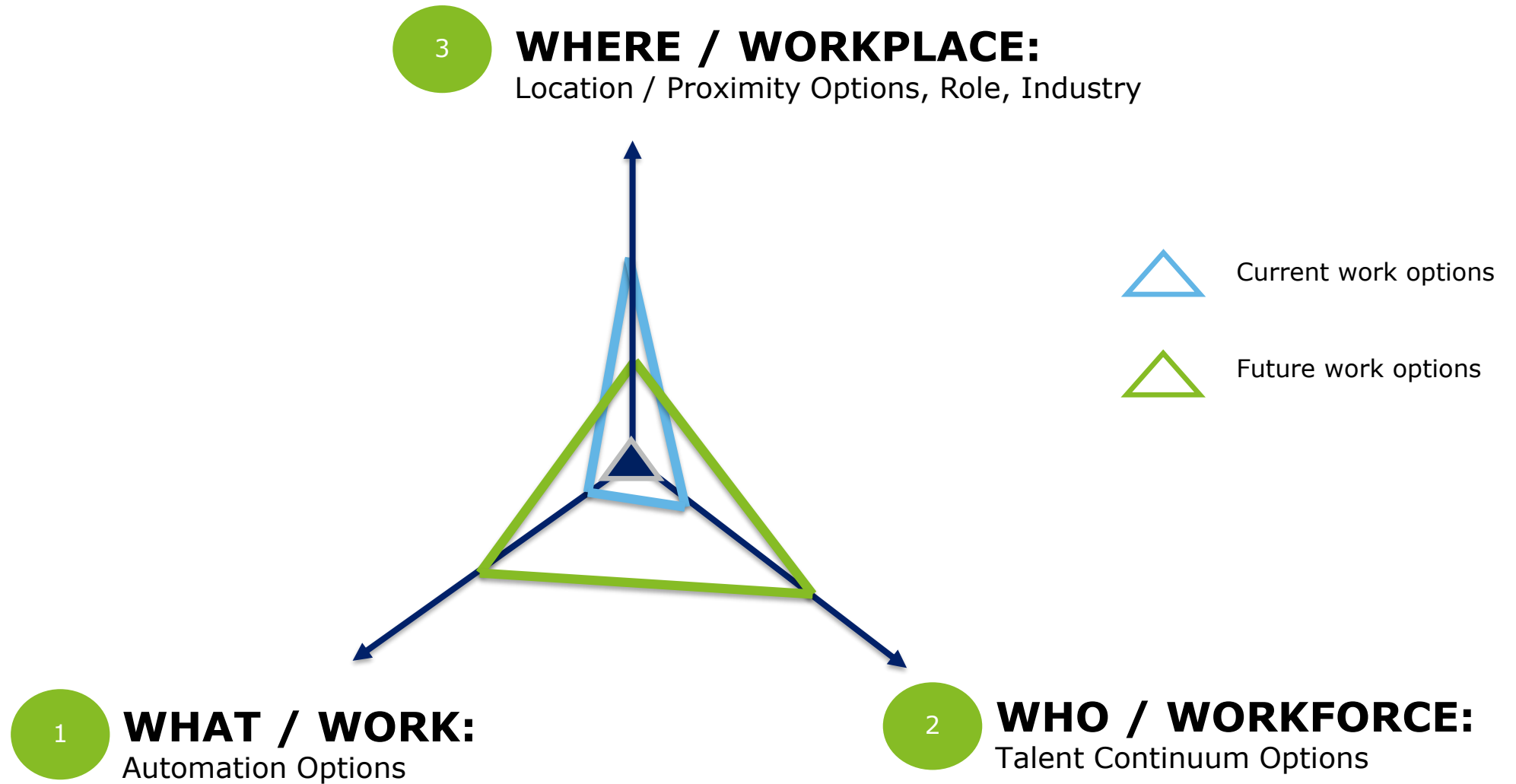
5 https://www2.deloitte.com/content/dam/Deloitte/il/Documents/human-capital/Thriving_in_times_of_digital_disruption.pdf

6 http://www.oxfordmartin.ox.ac.uk/downloads/reports/Citi_GPS_Technology_Work_2.pdf

7 Intuit 2020 Report: Twenty Trends that will Shape the next Decade https://http-download.intuit.com/http.intuit/CMO/intuit/futureofsmallbusiness/intuit_2020_report.pdf

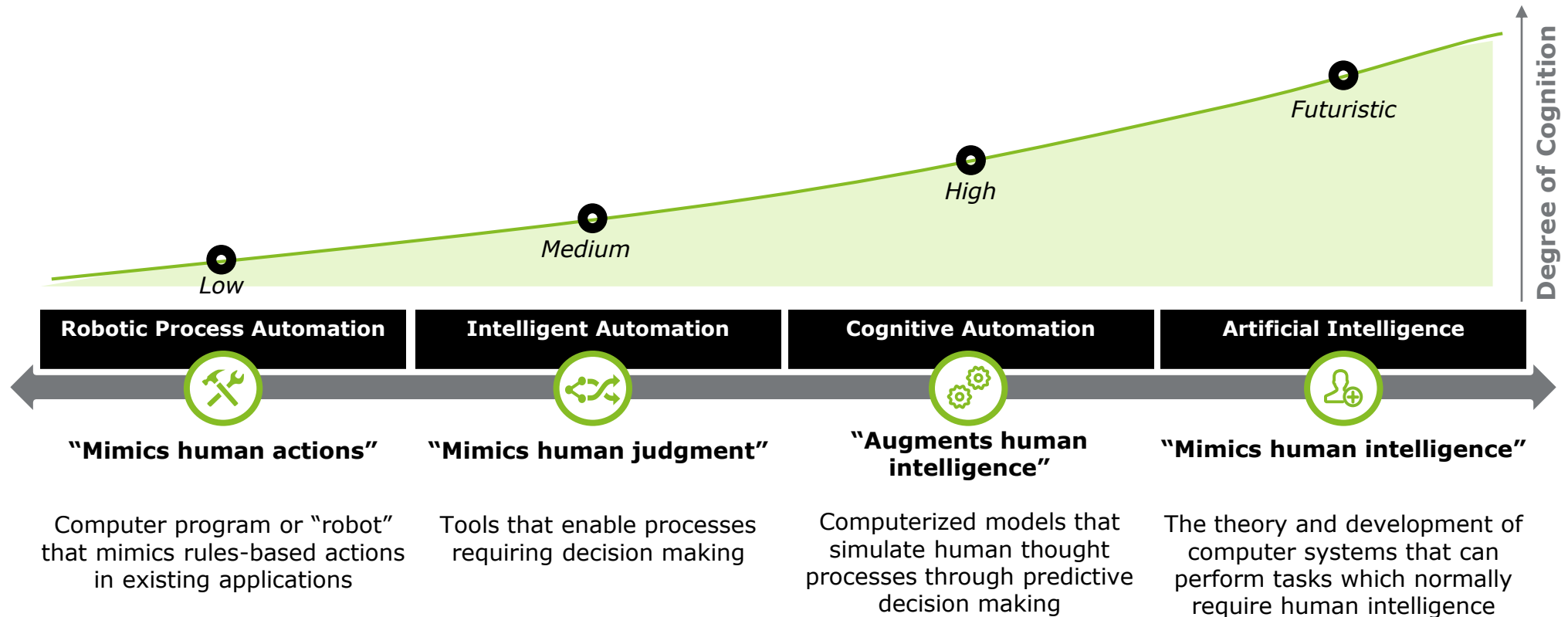
8 <https://www2.deloitte.com/content/dam/Deloitte/global/Documents/HumanCapital/dttl-hc-english-opentalentconomy.pdf>

FUTURE OF WORK FRAMEWORK: THE (1) WHAT, (2) WHO, AND (3) WHERE



FUTURE OF WORK FRAMEWORK: (1) THE WHAT

The automation continuum ranges from enabling strategies that improve business processes to sophisticated technologies with cognitive elements



As the appetite for automation grows, the interplay of emerging technologies will lead to fundamental changes in how actuaries operate and deliver services to stakeholders

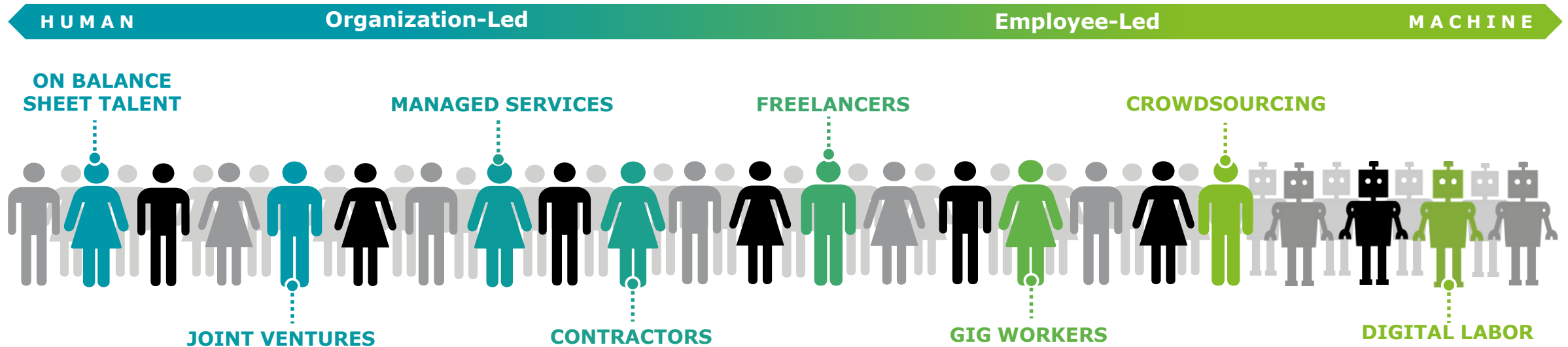
FUTURE OF WORK FRAMEWORK: (2) THE WHO

Explore options within a growing open talent continuum that offer on-demand capabilities to organizations and greater flexibility to individuals

DRIVERS OF CHANGE



OPEN TALENT CONTINUUM



FUTURE OF WORK FRAMEWORK: (2) THE WHO

What

Who

Where

New roles are created and new skillset is required

Research performed by Deloitte Consulting indicates that wage increases are primarily going to two types of jobs.

Technical Roles

- Skills are (currently) scarce

Hybrid Roles

- Combine math, statistics, critical thinking, and industry expertise

FUTURE OF WORK FRAMEWORK: (2) THE WHO

New roles are created and new skillset is required

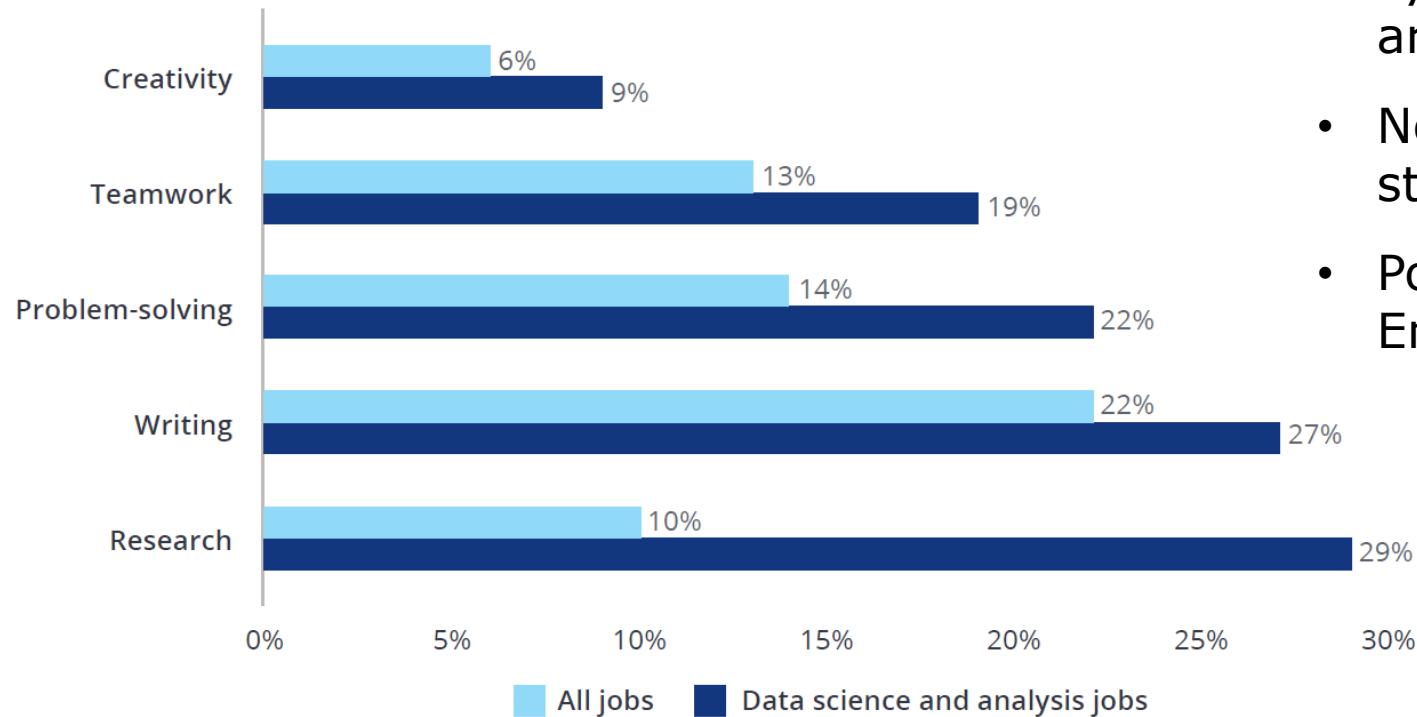
Hybrid Roles



Enduring Skills

Figure 2. Data jobs require more soft skills

Percentage of posts requesting soft skills



- Types of expertise for which employers are looking in data analysis positions.
- Not only from coursework in math or statistics.
- Potentially emerge from a background in English, history, art, or business.

Source: Matt Sigelman, "By the numbers: The job market for data science and analytics," Burning Glass Technologies, February 10, 2017.

FUTURE OF WORK FRAMEWORK: (3) THE WHERE

What

Who

Where

Explore opportunities to rethink the structures, practices, and technologies needed to empower connection between individuals who are collocated or dispersed remotely

Primary factors:



**Desire by the workforce
(E.g. Millennial preferences)**



Enabled by technology

Implications:



Collocated

Physical Proximity



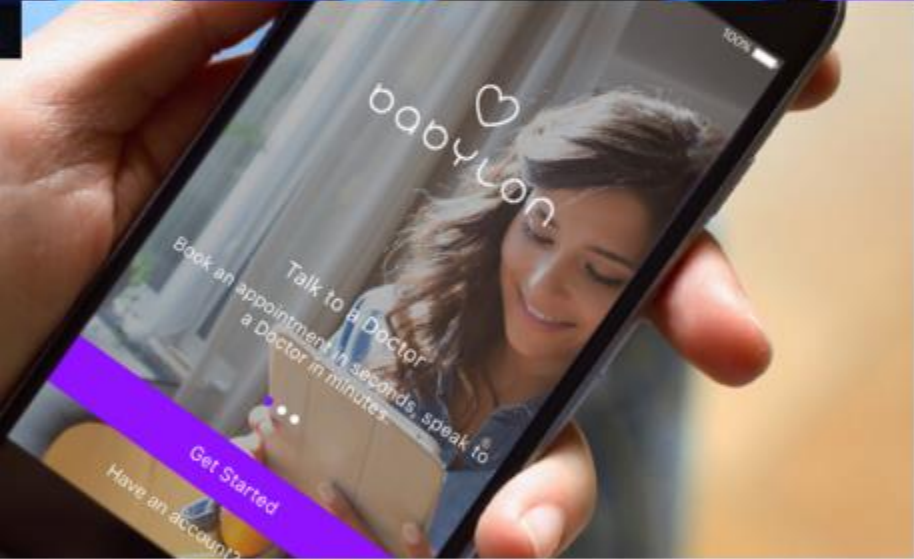
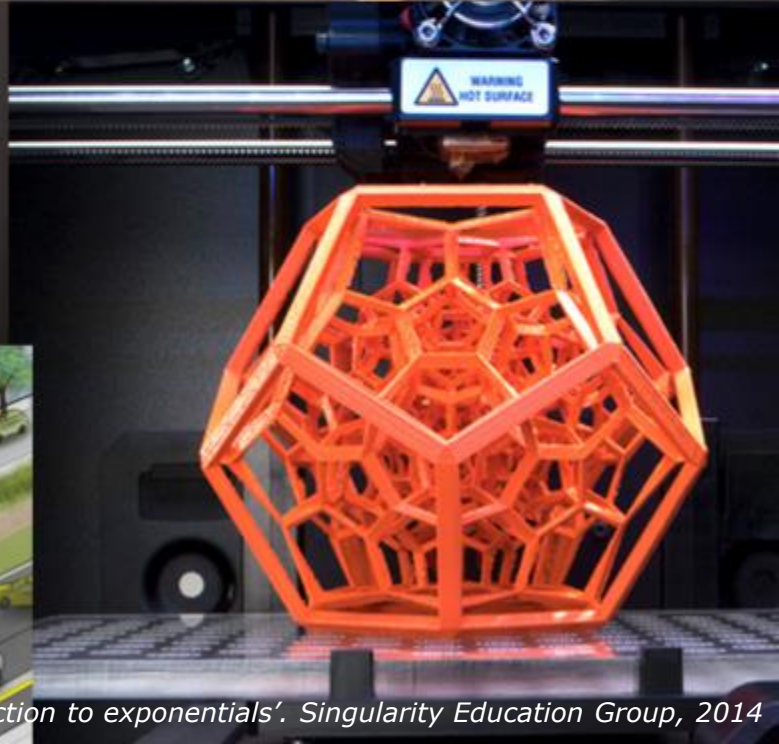
Dispersed

Physical Workplace

Hybrid Workplace

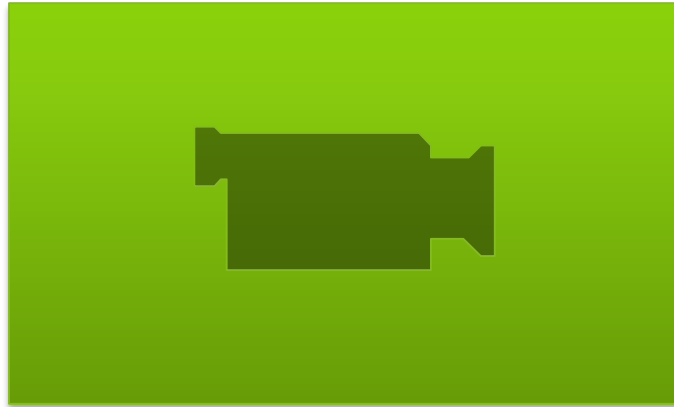
Virtual Workplace

THE FUTURE LOOKS LIKE THIS...



Source: 'Introduction to exponentials'. Singularity Education Group, 2014

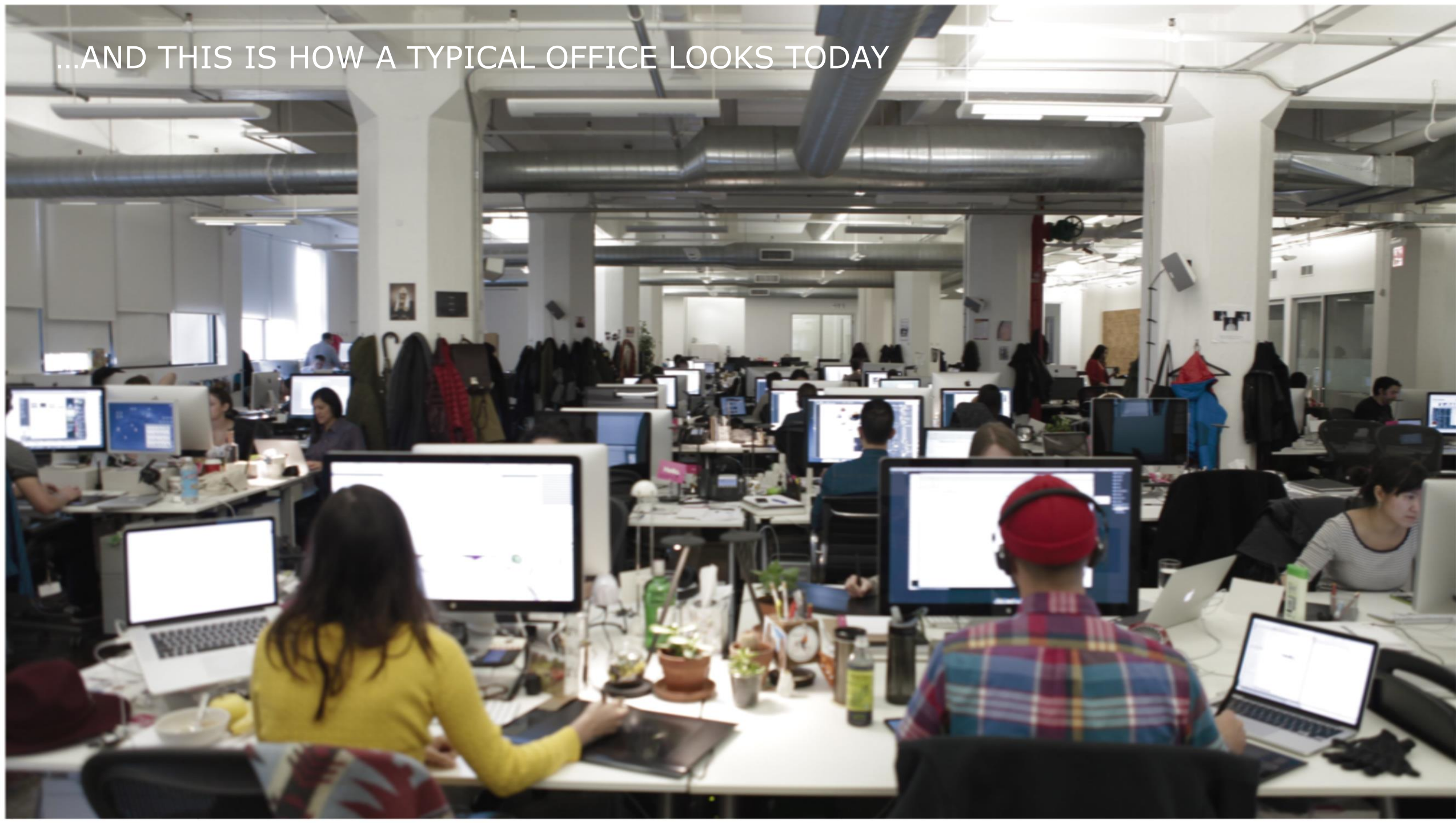
EXPONENTIAL TECHNOLOGIES INTRODUCTION VIDEO



THIS IS WHAT A FACTORY LOOKS LIKE TODAY



...AND THIS IS HOW A TYPICAL OFFICE LOOKS TODAY



HOW WILL ACTUARIES AND OTHER PROFESSIONALS WORK A FEW YEARS FROM NOW?



WHAT'S THE ACTUARIAL OPPORTUNITY?



CHIEF CHRISTINE

I KNOW ACTUARIAL TRANSFORMATION IS ON THE HORIZON AND CAN BRING GREAT BENEFITS BUT WHERE DO I BEGIN? AND WHAT ROLE WILL TECHNOLOGY PLAY?



DEMANDS

- Data, systems, processes
- Quality control (e.g. errors, consistency)
- Cost reduction, efficiency improvement
- Evolving Regulatory Change (e.g. implementing IFRS 17 by 2021)



DESIRES

- More proactive strategic capacity
- Implement new technologies
- As a catalyst for change and an industry pioneer
- Struggles to know where to start, but wants to lead and share knowledge with team and senior management

THE NEED FOR CHANGE

Insurers have pain points and gaps whose solutions require shifts in technology, talent, and governance in order to better respond to their organization's strategic objectives

DRIVERS

Need for greater degree of **Strategic insight** into the organization

Keeping pace with evolving **Regulatory Change** – e.g. **IFRS 17**

Response to concerns around **Quality** – e.g., observed errors, lack of consistency

Cost Reduction and related strategies to improve efficiency

Availability of **disruptive technologies** that are required for businesses to stay competitive

ISSUES

PAIN POINTS & CAPABILITY GAPS

SPANNING:
PEOPLE
PROCESS
TECHNOLOGY
GOVERNANCE

SOLUTIONS

Systems Strategy

Process Automation

Business Insight

Redeploy Talent

Outsourcing Services

THE ACTUARY OF TODAY

Actuaries ability to provide deep business insight is negated by overwhelming Operational and Stewardship Activities they perform today

Representative Actuarial Pain Points



Many spreadsheets linked together to calculate, capture, and allocate investment income



Company produces **hundreds of product filings** every year



Thousands of unique tools and spreadsheets required for monthly actuarial financial reporting processes



Many people involved in a **6 month** process of updating regulatory memos



Hundreds of Actuarial models all need to be maintained, updated, and launched manually and reconciled



Life Insurance company **doesn't know** how many 90+ year olds they insure



Thousands of hours spent annually **drafting hundreds** of actuarial reports after analysis has been completed

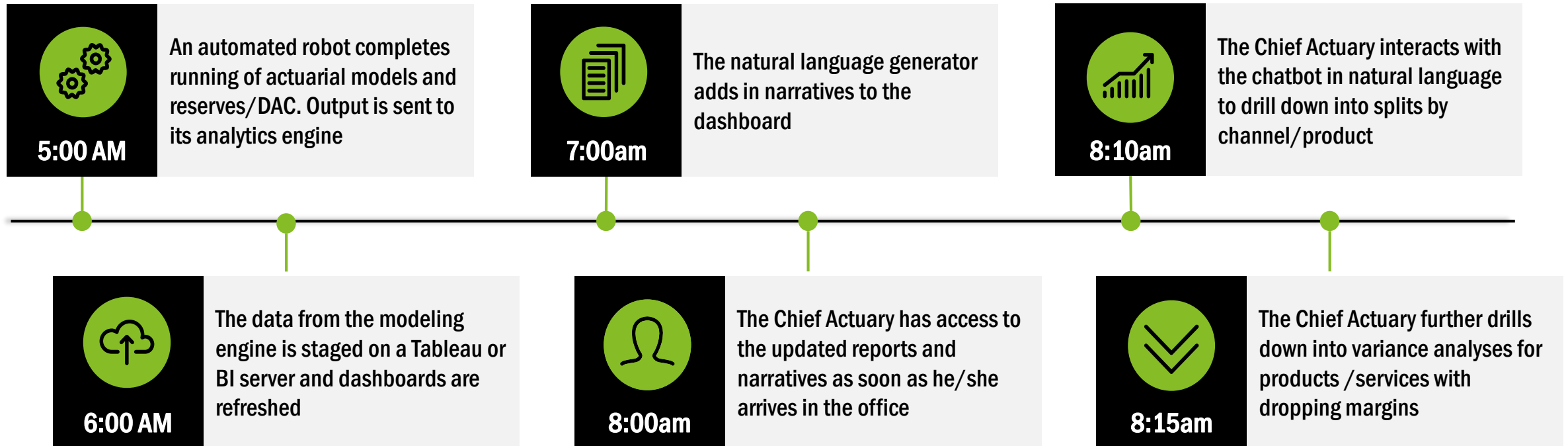


Users wake up at **2:00 a.m.** to confirm models have successfully completed and to kick-off next job

The role of the Actuary needs to be redefined and refocused on more value added and strategic activities

IN THE NEXT FEW YEARS, ACTUARIAL ORGANIZATIONS WILL LOOK VERY DIFFERENT

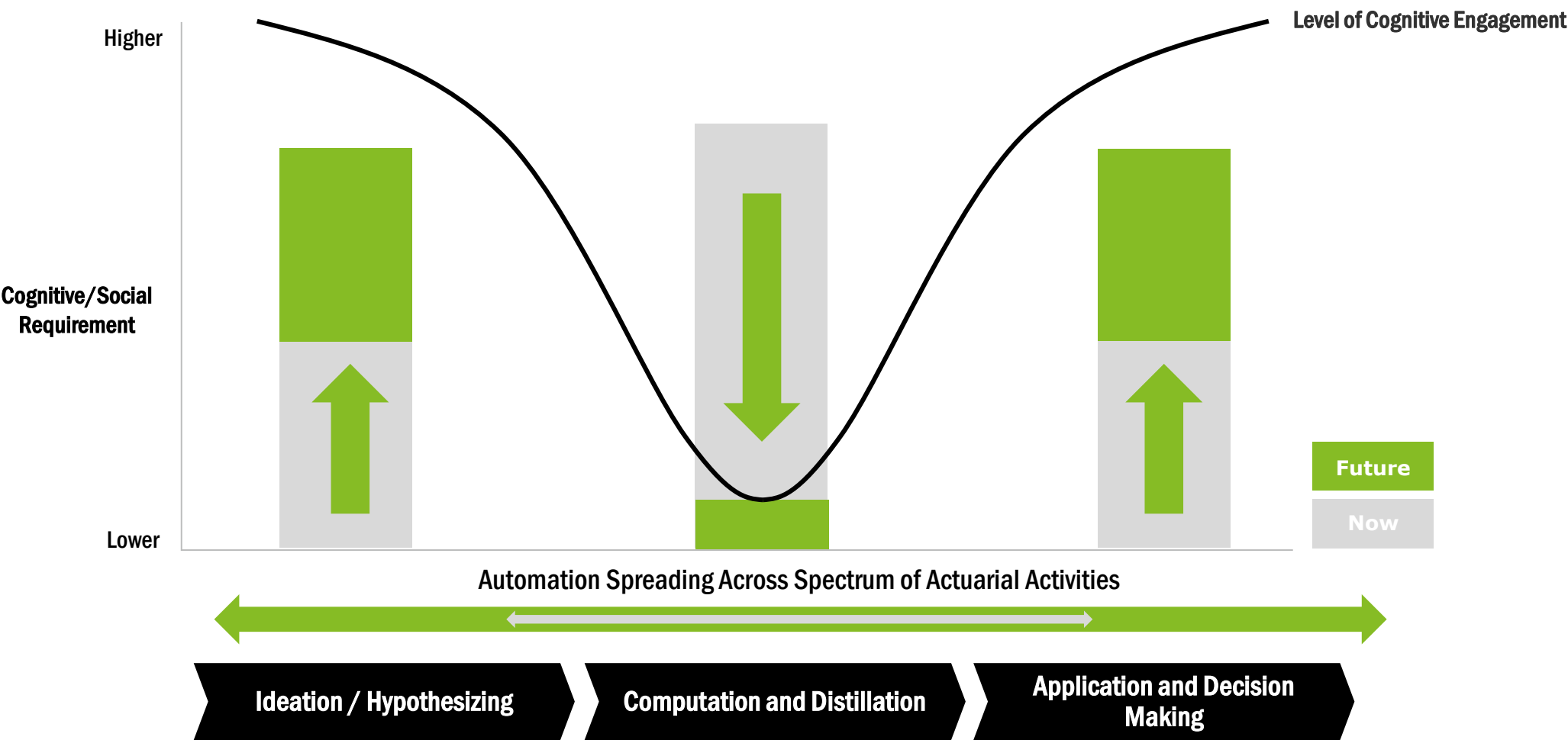
Imagine A World Where...



All of the technologies required to realize this vision of the future exist today

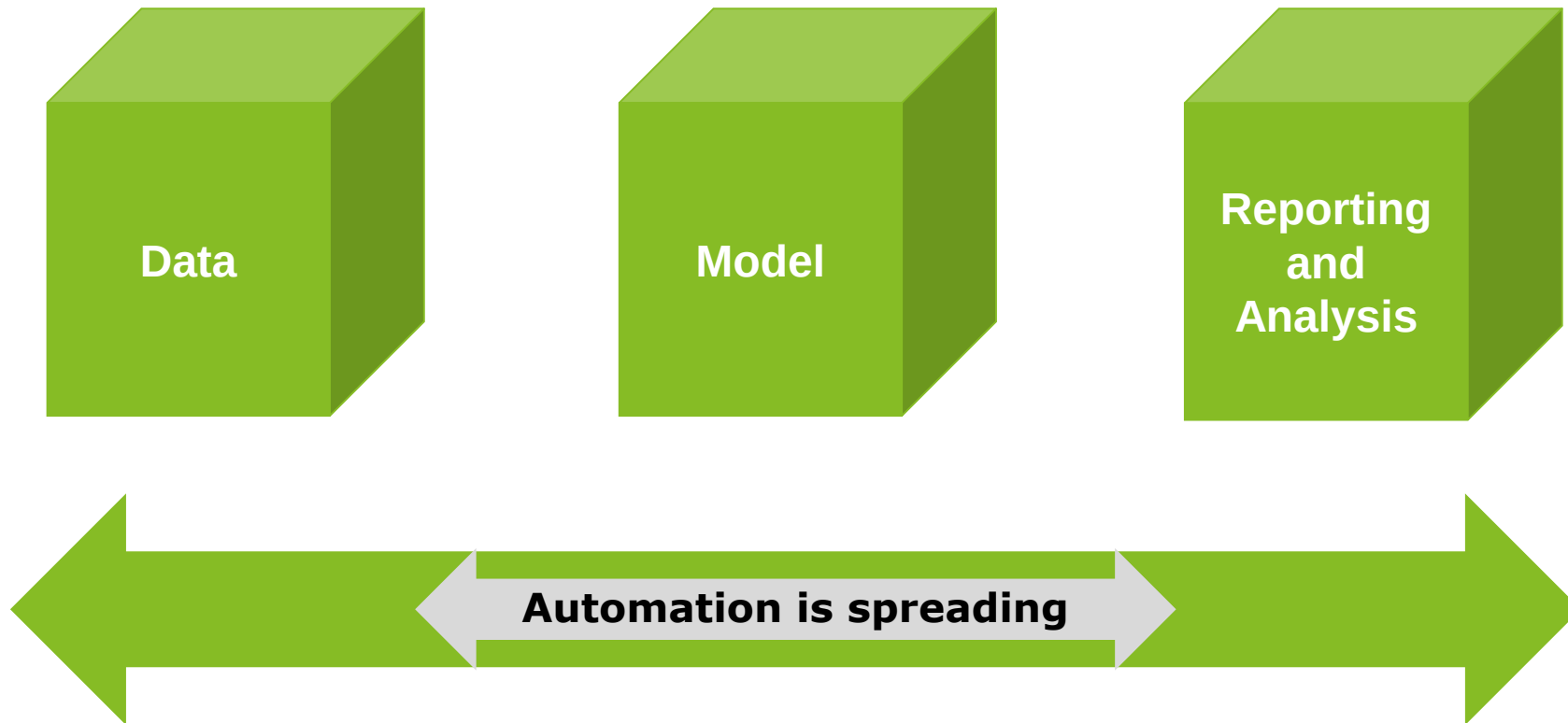
FUTURE STATE OF ACTUARIAL FUNCTIONS

The nature of the Actuarial Profession and their activities is being disrupted due to technological and talent/operating innovation. This will shift human work towards higher cognitive and value-add activities.



VARIOUS PARTS OF ACTUARIAL PROCESSES CAN BE EXPONENTIATED

End-to-End Actuarial Process



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