

# *Beyond the horizon*

*What will the world of research look like 10 years from now?*

*A foresight study.*



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**Ipsos Public Affairs**

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# Overview of approach

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<b>1</b>	<b>LITERATURE REVIEW</b>	Understand current system, agents and trends	<b>January 2018</b>
<b>2</b>	<b>INTERVIEWS WITH EXPERTS</b>	56, one-hour interviews with experts to explore and refine trends, drivers, decisions.	<b>February to May</b>
<b>3</b>	<b>SURVEY OF RESEARCHERS</b>	Map motivations, perceptions and likely behaviours around changing trends. 2,055 responses	<b>March to April</b>
<b>4</b>	<b>DEVELOP SCENARIOS</b>	2 workshops to build and refine scenarios	<b>April to July</b>
<b>5</b>	<b>WRITE FULL REPORT</b>	Bring together all the findings for public release	<b>August to December</b>
<b>6</b>	<b>LAUNCHED REPORT</b>	Presented and discussed findings at the AAAS in Washington	<b>February 2019</b>

# Scenarios constructed along three different dimensions

## SIX THEMES

Funding in the future

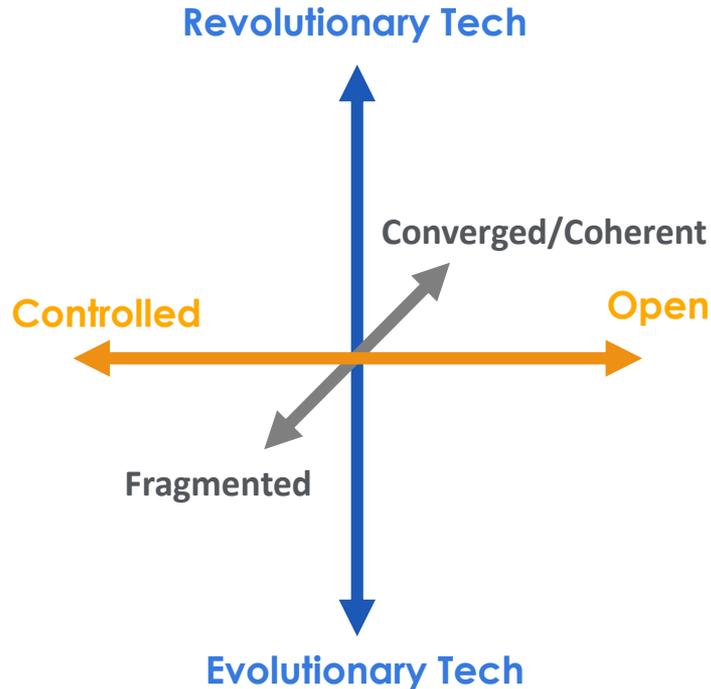
Pathways to open science

The academy and beyond

Technology:  
revolution or evolution

Building the future  
research info. System

How researchers work:  
change ahead



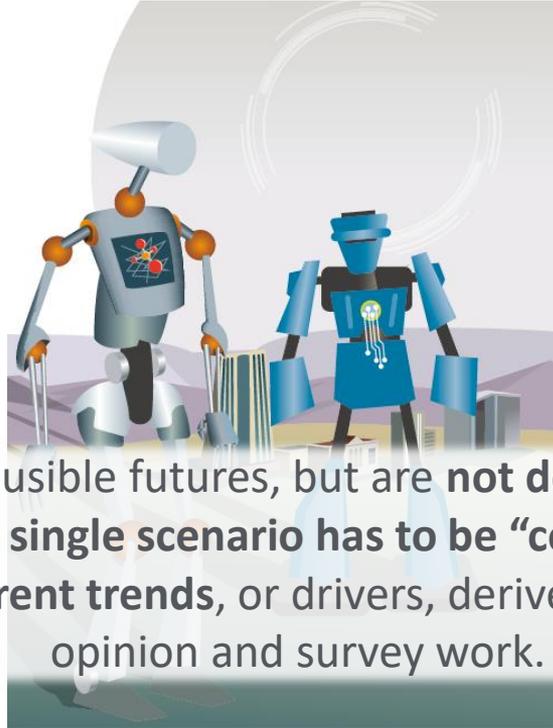
## THREE SCENARIOS

# Visualizing the future through scenarios

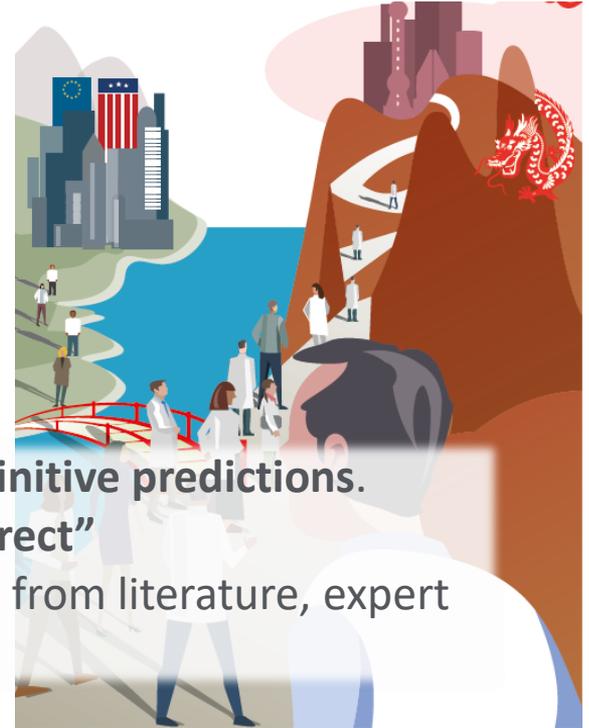
## Brave open world



## Tech Titans



## Eastern ascendance



- Scenarios are plausible futures, but are **not definitive predictions**.
- **No single scenario has to be “correct”**
- They are built on **current trends**, or drivers, derived from literature, expert opinion and survey work.



## Scenario one: **Brave open world**

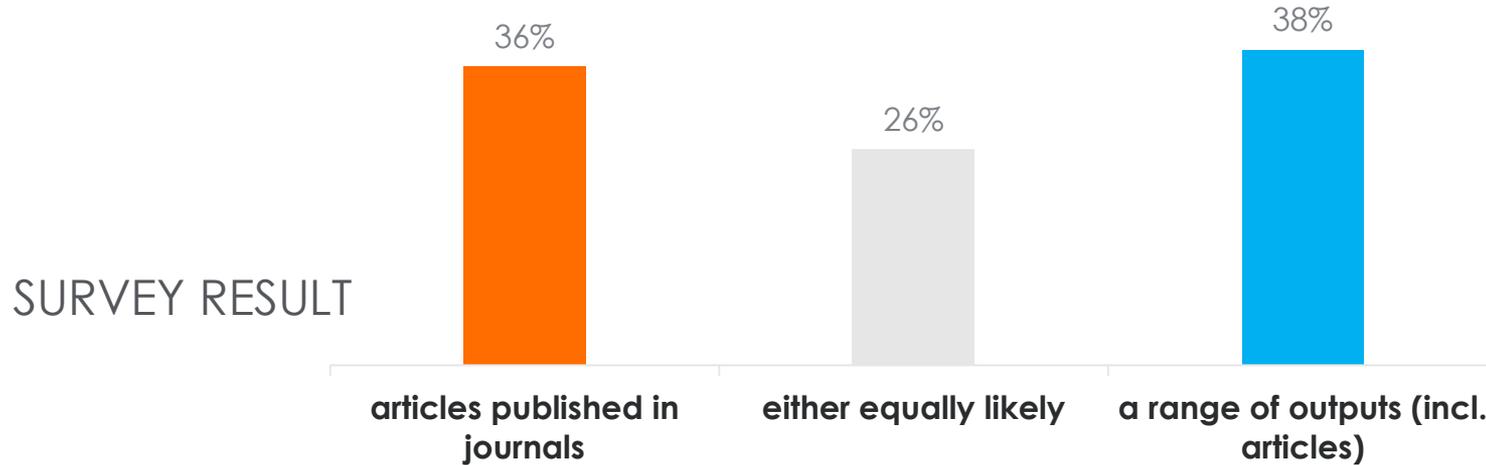
### **At a glance:** **Open world of collaboration**

- *Globally, state funders and philanthropic organizations have joined forces and pushed through the creation of open platforms*
- *Open access (OA) is the norm, but the form of that OA varies by region; Europe is mostly gold, while North America and Asia Pacific is generally green. Rapid advances technology mean these platforms flourish.*
- *Preprints thrive in this world and are linked to the final article versions, which are still recognized as the authoritative version. Researchers benefit from access to data in a variety of ways, for example, via bite-sized publications and dynamic notebook-style articles.*
- *The advances in AI and technology have also provided new methods of generating and communicating results.*
- *Journal publication plays a diminishing role in determining a researcher's career progress. Increasingly, research is assessed against agreed societal impact standards.*

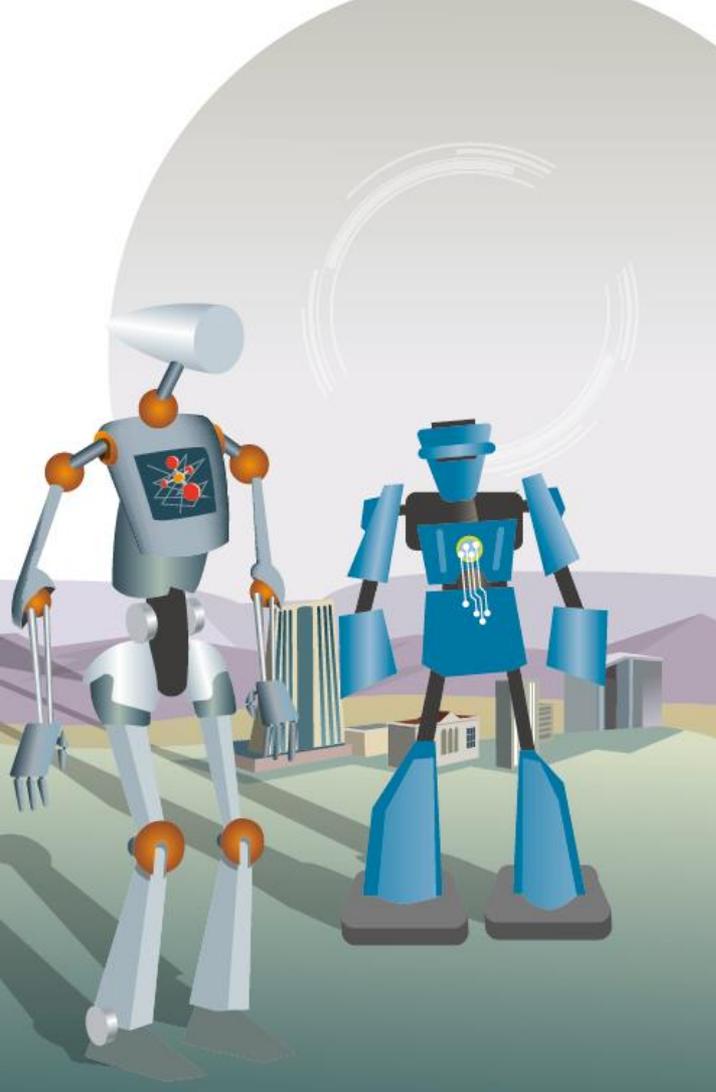
## QUESTION AND RESULTS FROM RESEARCHER SURVEY

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In 10 years the success of research will be judged primarily on...



BASE: Researchers. N=2055



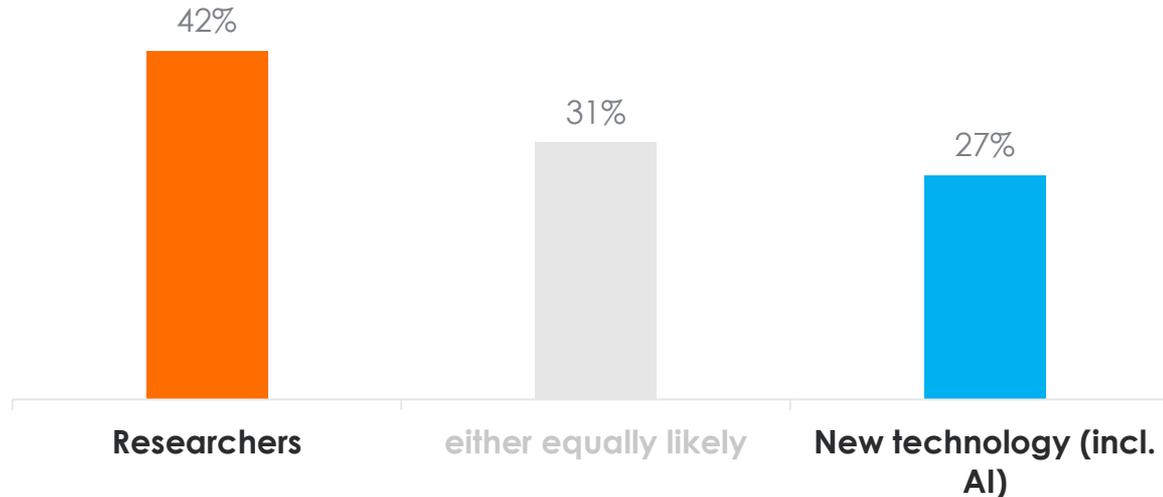
## Scenario two: **Tech titans**

### **At a glance:** **“Big tech” in charge**

- Industry and philanthropic foundations are the principal research funders.
- There have been significant advances in machine learning with sophisticated artificial intelligence (AI) products driving innovation. Advances are rapidly transferred to industry, but at the cost of jobs.
- A number of countries are leveraging sophisticated machine learning products in their research programs to address their own priorities and challenges. However, some sectors and states are struggling to adapt.
- Large technology and data analytics companies become the curators and distributors of knowledge.
- The way research is performed, changes enabling many researchers to work independently of institutes and even funders – “science-as-a-service” is emerging as barriers to entry are reduced or removed.

## QUESTION AND RESULTS FROM RESEARCHER SURVEY

4). In 10 years the **creative force** driving forward new knowledge will be...

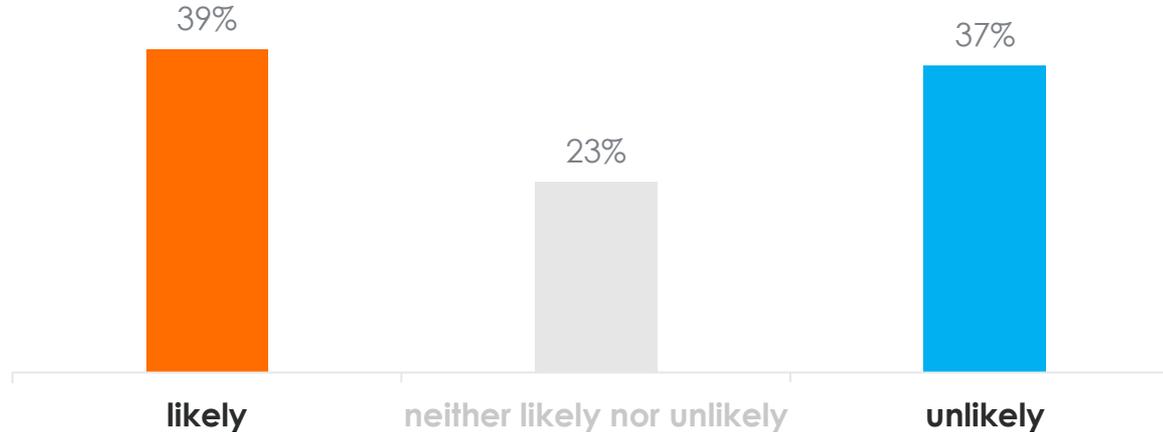


BASE: Researchers. N=2055

## QUESTION AND RESULTS FROM RESEARCHER SURVEY

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6). In 10 years AI will be the criteria used to determine the appropriateness of an article for publication in a journal



BASE: Researchers. N=2055



## Scenario three: **Eastern ascendance**

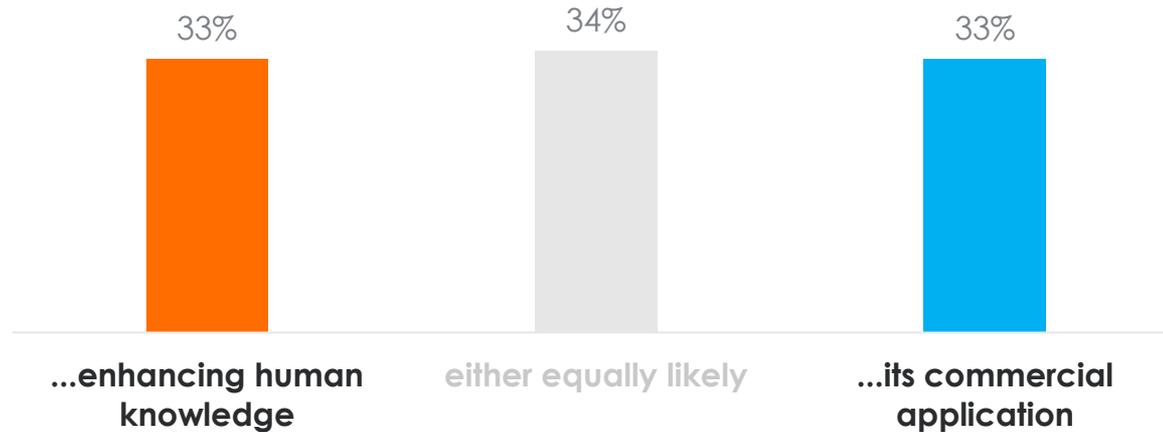
### **At a glance: A multi-polar world**

- *China's desire to transform into a knowledge-based economy has led to heavy public investment in research and development (R&D).*
- *The sheer volume of investment by China, and other research nations in the region, has made the East a magnet for international researchers.*
- *Open science practices have been adopted in some countries and regions, but not all.*
- *A lack of global alignment on grand challenges has resulted in inefficiencies in the international research system.*
- *Governments, industry and other research funders compete for scientific advantage through the controlled distribution and trading of data. When data is believed to hold no further commercial value, it is released*

# SURVEY RESULTS

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2). In 10 years time, research will be principally valued for...

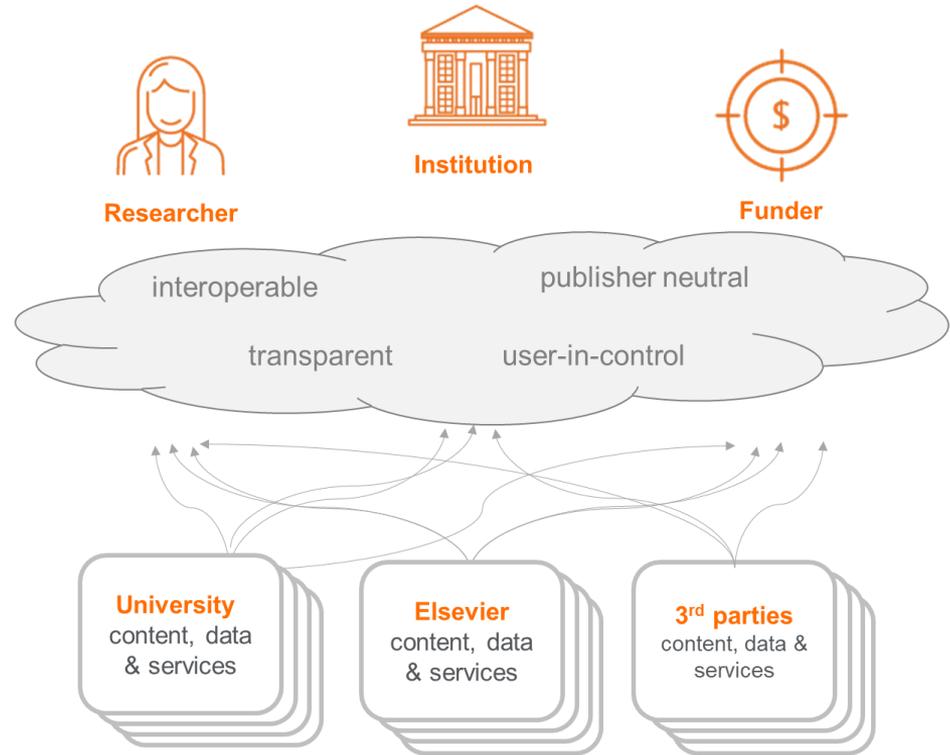


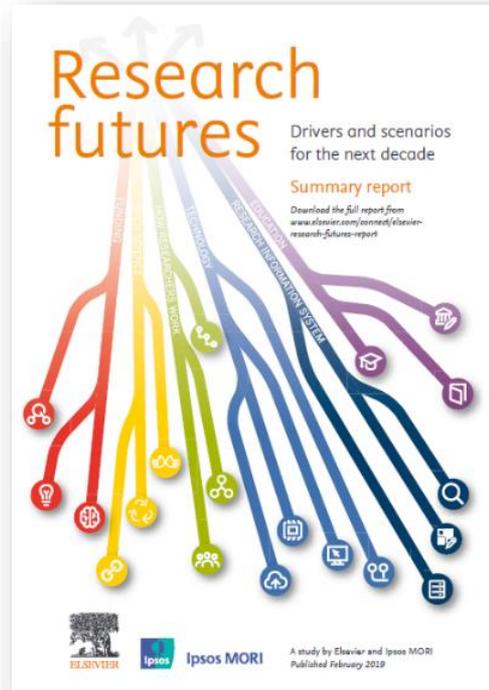
BASE: Researchers. N=2055

# How we as Elsevier are preparing for the future

*“Work to improve the **information system supporting research** around the globe”*

- Our role is to **help improve** the information system supporting research
- Materially improving the information system requires a **platform approach**
- A platform approach can only be successful if **interoperable, transparent, publisher neutral and with the user in control**





# THANK YOU

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