



The global voice of scholarly publishing

STM TECH TRENDS 2022

Entering the AI Era

Creative Humans & Smart Machines

STM Annual US Conference, Innovations Day

26 April 2018

Presented by Eefke Smit

Director STM, Standards and Technology

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Tech Trends 2022

STM
The global voice of scholarly publishing

OPEN SCIENCE

- Early sharing
- Includes all research artefacts
- European Open Science Cloud (EOSC)

SOCIAL MEDIA:

- Cyber Influencing
- Bots warfare
- Internet Surveillance
- Citizen Science
- How to avoid fake science

EASY ACCESS

- Single Sign-on
- Transparent collaboration
- Complexity of ID Management
- Simple Business Models
- RA21

SHARING PLATFORMS

- A Spotify for Science?
- Find the Napster moment
- How to control governance
- Will it all be Google or Sci-Hub
- Complete platform integration
- Responsible sharing
- Will it all be open ?
- CHORUS

BREXIT

Research
in Asia

NET
NEUTRALITY

METRICS:

- New reward systems
- Measuring all outputs

GDPR:

- Will it take all development resources?
- May change marketing fundamentally
- Impact on user data analytics
- What does it do to the UX interface?

Publishing to underpin TRUST:

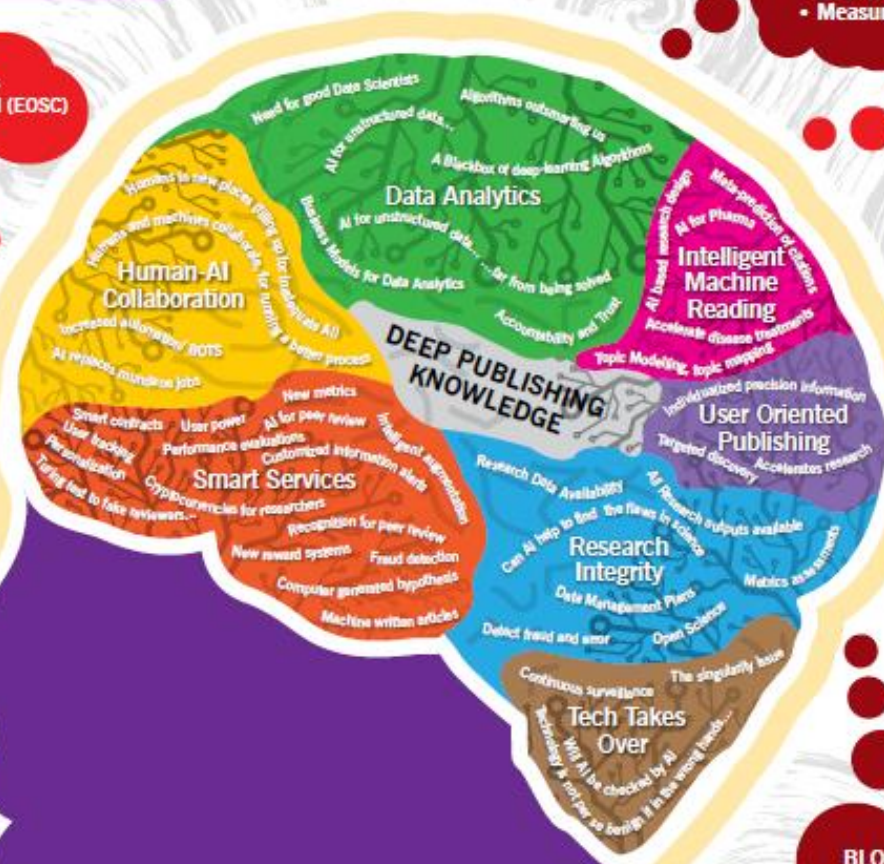
- Help avoid crap science
- Quality Assurance of Data

RESEARCH DATA:

- Who funds the infrastructure
- Will it bust the pipes?
- Volume is enormous
- What will funders pay for?
- FAIR Data
- Persistent ID's
- Data Management Plans

BLOCKCHAIN:

- Can Blockchain help solve the trust issues
- Ensure Authenticity in a Network of Trust
- Is it robust and fast enough?
- Will it all be open?



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Kindly sponsored by



STM Tech Trends 2022; created at our meeting on 4 December 2017



At BMC, Gray's Inn Road, London: Brainstorm in Delphi-method mode



4 December 2017, Gray's Inn Road, London who were there ?



Chris Fell
David Smith
Jonathan Morgan
Todd Carpenter
Bob Saffell
IJ J Aalbersberg
Daniya Tamendarova
Debbie Sweet
Richard Kidd
Philip Roberts
Renny Guida
John Connolly
Martijn Roelandse

Cambridge UP
IET
ACS
NISO
Kluwer
Elsevier
APA
Cell Press
RSC
CABI
IEEE
SpringerNature
SpringerNature

Heather Staines
Graham McCann
Michael Forster
Richard Fidczuk
Michael Duerst
Daniel Schiff
Phill Jones
Liz Marchant
John Sack
Dawa Riley
Kent Anderson
Sam Bruinsma
Eefke Smit

Hypothesis
IOPP
IEEE
Sage
Karger
Thieme
Digital Science
T&F
Highwire
Hypothesis
Redlink
Brill
STM



Many thanks to those who helped
in the creation of this 2022 edition

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Stuart Harris (Stu Design) – infographic

Eefke Smit (STM) – editor

And grateful to our kind sponsor: IEEE

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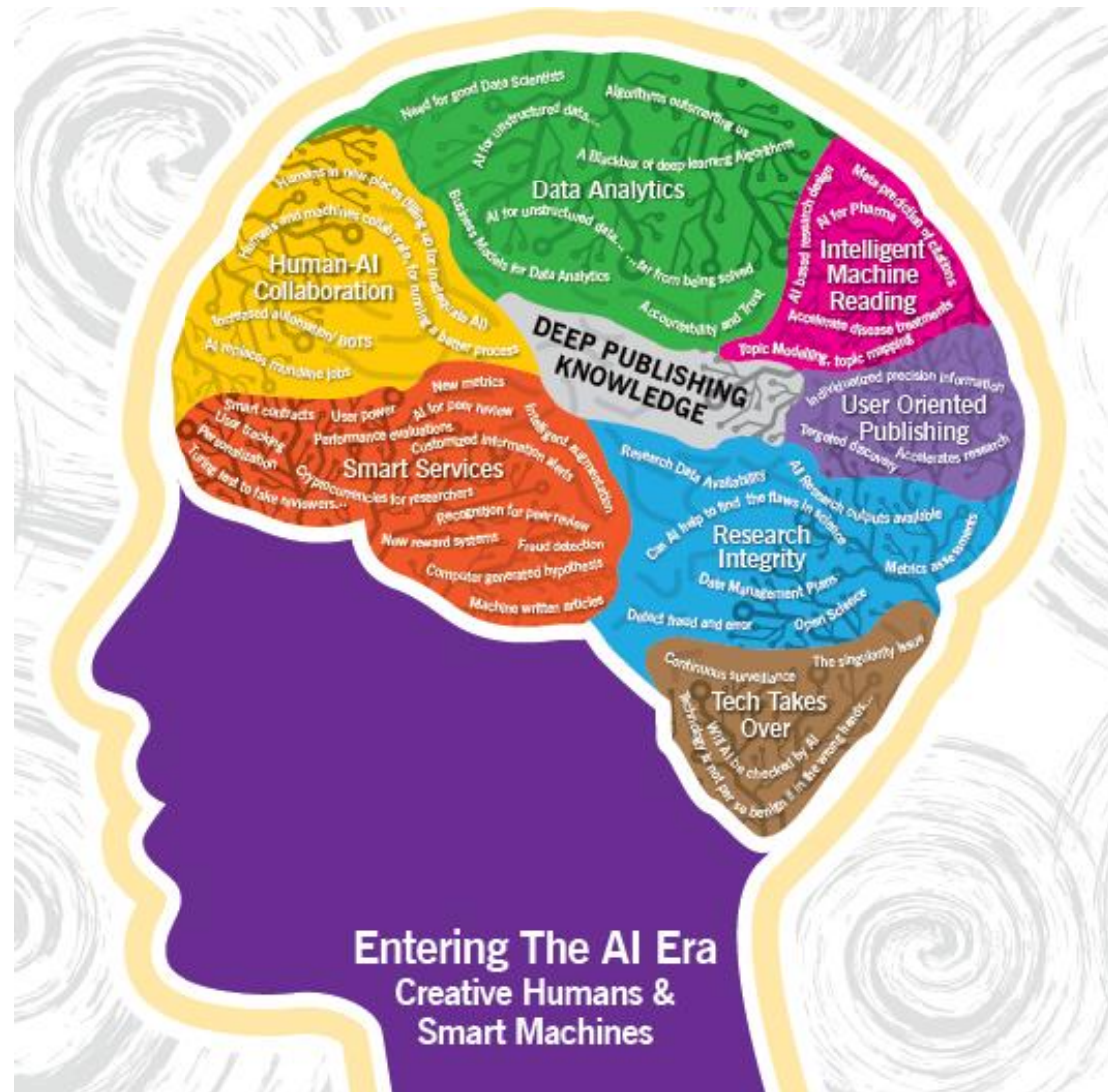
Inside the Brain: how AI can enhance publishing

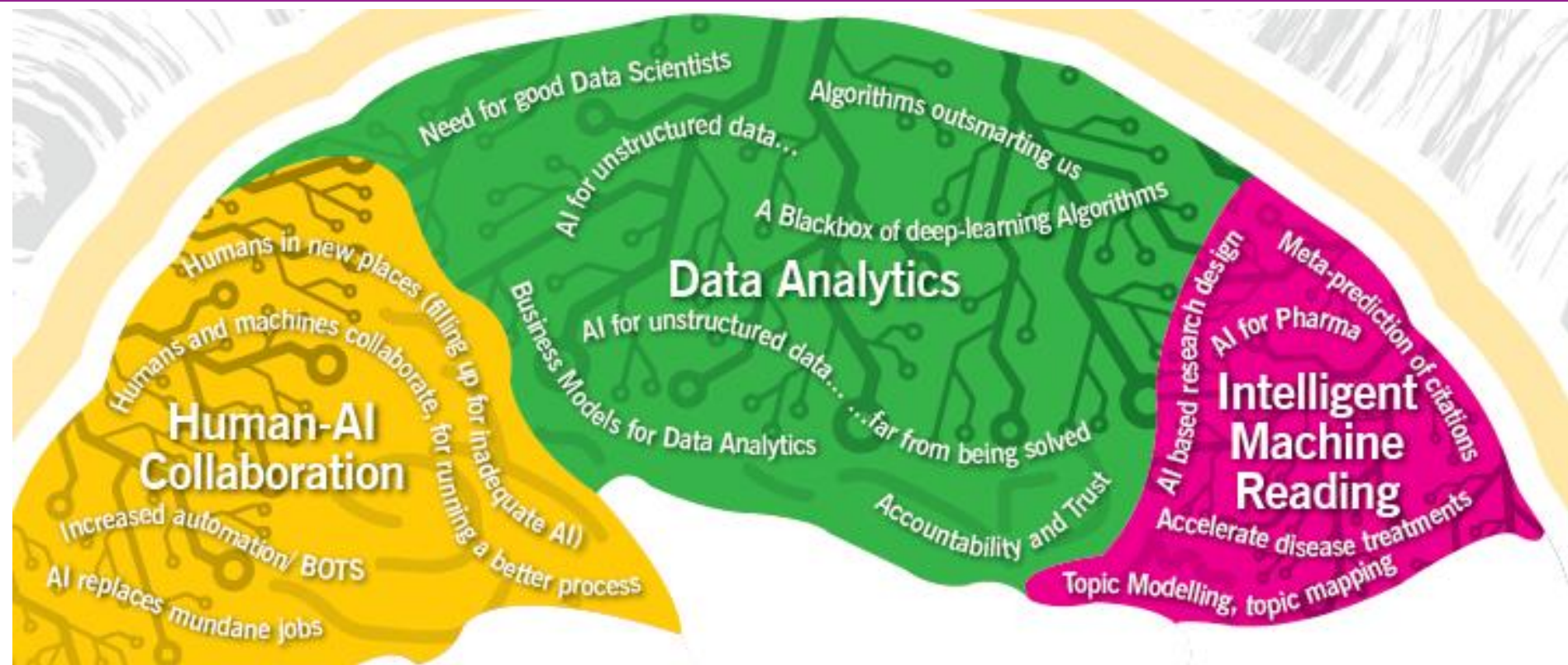
Sections of the Brain:

- Data Analytics
- Human-AI Collaboration
- Smart Services
- Research Integrity
- User oriented Publishing
- Intelligent Machine Reading
- Tech Takes Over

...and in the very centre....
there is:

Deep Publishing Knowledge





Human/AI Collaboration

- For a better process
- AI can be inadequate
- Increased bots
- AI replaces mundane jobs
- Humans in new places

Data Analytics

- Smart algorithms
- Handling unstructured data
- Blackbox fear
- AI outsmarting us
- Need for good Data Scientists

Intelligent Machine Reading

- Topic modelling
- Topic mapping
- Meta-prediction of citations
- AI-based research design
- Accelerate disease treatment in



Deep Publishing Knowledge
 Where the hippocampus is located, regulating long term memory and emotions

Smart Services

- Personalization
- User tracking
- New metrics
- AI for Peer Review
- Smart contracts
- Cryptocurrencies
- Machine written articles

Smart Services

- User Power
- Performance assessments
- Customized alerts
- Intelligent augmentation
- Computer generated hypothesis
- Turing test for peer review
- Find research flaws with AI

User Oriented Publishing

- Individualised precision information
- Targeted discovery
- Accelerates research





- Open Science
- Research data availability
- Data Management Plans
- All research outputs
- Performance assessments
- Trust and Accountability
- Detect Fraud and Error
- Find research flaws with AI

What ifTech Takes Over

If it is all automated (in the cerebellum), there is a deeper fear for

The Singularity Issue:

The technological singularity (also, simply, the singularity) is the hypothesis that the invention of artificial superintelligence (ASI) will abruptly trigger runaway technological growth, resulting in unfathomable changes to human civilization.

(Wikipedia)

Tech can help, Tech can do harm;
it needs governance



What are we facing outside the brain:

Social Media

- Cyber influencing
- Citizen Science
- Avoid fake science

Easy Access

- Single sign-on
- Fix the off campus problems
- RA21

Sharing Platforms

- A spotify for science?
- Governance
- Google, SciHub
- Responsible sharing

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Publishing to underpin Trust and Quality

Publishing to underpin TRUST:

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Trust in Science

- Quality Assurance
- Avoid crap science

Research Data

- Infrastructure funding
- Volume is enormous
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Blockchain

- Can it help solve trust issues?
- Ensure authenticity
- Is it robust and fast enough?
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From Funders and Governments:

Open Science, for early sharing

Metrics and Indicators and
New reward systems

GDPR

Will it take all development resources?

Geo-shifts:

Asia, Brexit,
Net Neutrality

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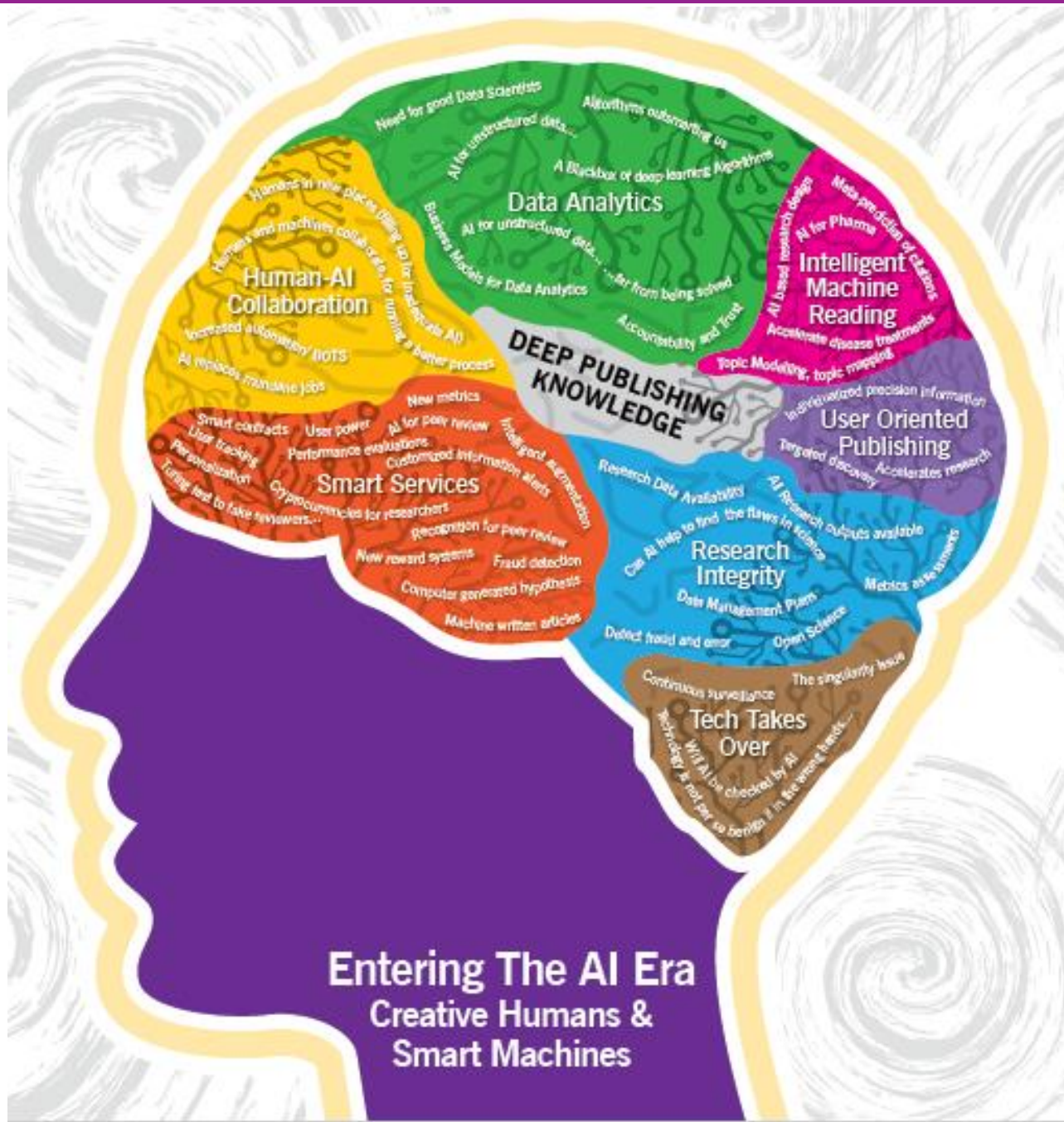
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AI for Pharma
Intelligent
Meta-prediction of clinical
research design



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Comments, Questions ?

Please note: THIS PRESENTATION IS **UNDER EMBARGO** until:

Official launch on 26 April 2018, at the STM Conference, Philadelphia

Presentations available for your organisation as a pre-view
(by webinar or live)

PDF poster will be available on the STM website: www.stm-assoc.org
(prints nicely on A3), after 26 April.

Forthcoming: Article in The Scholarly Kitchen

More info: smit@stm-assoc.org

