2015 STM TECH TRENDS
Official Launch: 23 April 2015

STM US Annual Conference
Washington, 23 April 2015
Who developed these 2015 TECH TRENDS:

FUTURE LAB meeting with participants from 26 organisations

London, 2 December 2014, Burlington House, Picadilly, Royal Society of Chemistry

James Walker
Daniel Schiff
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Philip Roberts
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IOPP
Thieme
Crossref
CABI
IET
Proquest
IEEE
Chorus
APA
ACS
Pharmaceutical Press
Elsevier
Digital Science
Editora Manole
Sage
IEEE
Oxford UP
Highwire Press
Kluwer Health
Cambridge UP
Brill
Science/ AAAS
Elsevier
Indiana University
ACS
STM
How these TECH TRENDS are developed

How we do this:
• Annual brainstorm
• Using the Delphi-method
• 25+ people participating
• In London, part of STM week
• Everyone lists own top-3
• Group discusses meaning
• Draws the bigger picture
• Main trends clustered

Results:
• posters, postcards, stickers, ppt
• available for all STM members
• UNDER EMBARGO until 23 April 2015
• Full launch at STM Spring Innovations, on April 23 in Washington-DC
• Webinars, in-house presentations at request

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The Result:

Data as first class research object

The Article in a Hub and Spoke model

Reputation management
Three interrelated core trends:

- **Data as 1st class research object**
- **The Article in a Hub and Spoke model**
- **Reputation management of researchers**

Publishing data to enhance reproducibility (funder mandates), needs citation in and links to Record of Science.

Articles become part of a Hub and Spoke model, with many other elements (non text, multimedia, on the web) connected.

New metrics to articles and new elements refine the reputation of the researcher.
Data as first class Research Object:

- DATA MANAGEMENT SERVICES
  - Data Infrastructures
  - Structuring of Data at the source
  - Discovery Tools for Data
  - Curated Graphs dBase
  - Data Integration
  - Context of data

- CAN WE PROTECT THE RESEARCHER

- CREATE OPEN SCIENCE
  - Sharing
  - Visualization
  - Reproducibility
  - Funders Mandates
  - Data Infrastructures
  - Curated Graphs dBase

- SOPHISTICATED VISUALIZATIONS NEED TO BE LINKED TO THE OBJECT

- LINKING ARTICLES AND DATA
  - Reproducibility
  - Funders mandates
  - Linking infrastructure
  - Crossref
  - Datacite, RDA
  - WDS-CoData

- LAB NOTEBOOKS COULD BE PUSHED TO THE WEB

- ROBOT SCIENTISTS: STRUCTURING

- TRUSTWORTHY DATA CENTERS
  - Longevity, Sustainability
  - Certification Standards
  - Integrated Workflows
  - Emerald Cloud Data
  - The Cloud
  - Funding, DOIs

- GROWTH OF STUFF NOT LINKED TO ARTICLES
  - ERODES ECO-SYSTEM OF SCHOLARLY PUBLISHING

- DARK SIDE OF THE CLOUD; DATA PROTECTION ACT

- CONCERNS
  - Openness of Data
  - Reproducibility concerns
  - Retanalysis bias
  - Outscoping

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The Article in a Hub and Spoke model:
Reputation Management

- Reputations based on many more elements than just publication track record
- Attribution management
  - Micro-attribution
  - Persistent identifiers
- Integrated journal submission system
- Post-publication peer review
- Disambiguation
- DataCitation
- CrossRef, ORCID, ISNI
- Avoid ephemeral reputation

Funder requirements
- Tenure conditions
- Peer reviewing non-article content
- Participation in open science and citizen science
- OA-funding

WILL THE RESEARCHER BE THE NEW BRAND AND NOT THE JOURNAL?

Recognizing and protecting the researcher

Career management
- Identify Management
- Official Accreditation
- Digital badges
- Digital CVs
- Researcher-based metrics
- Google Scholar
- Social Media
- Facebook, LinkedIn, Twitter

New metrics
- Multitude of metrics
- Bibliometrics
- Researcher-based metrics
- Multitude of metrics
- Altmetrics
- Article-based metrics
- Visualisation
- Verification

The dark side of metrics and reputation management: gamification

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