Open Science Taxonomy

DRAFT #0cf7368
https://git.io/vNqTp

Open Science Platform
CC0

1. Researchers

Senior
Mid-level
Junior
Citizen scientist

2. Research activities

Boyer's model of scholarship

3. Fields

Altmetrics
Big Data
Blockchains
Citizen Science
Computer science
Content mining
CoScience
Data science
Data visualization
Digital Humanities
Digital methods and practices
FabLabs
Free and Open Source Software
Hybrid publishing
Information literacy
Information science
Library 2.0
Library and Information Science (LIS)
Linked open data
MOOCs
Online learning platforms
Open Access
Open curricula
Open data
Open Education Resources (OER)
Open hardware
Open networks
Open pedagogy
Open Science Grid
Open science
Open scholarship
Open spectrum
Open standards
Research data management
Researcher data management
Current Research Information Systems (CRIS)
Science administration
Scientific Knowledge Engineering
Smart city
Smart factory 4.0
Industry 4.0
Virtual research environments
Internet of Things (IOT)
Learning analytics
Visual analytics
Data mining
Maker culture
Non-textual materials
Open archives
Open culture
Open licensing
Open peer review
Open research methods
Open science training
Scholarly publishing
Science 2.0

4. Methods

4.1 Technology development methods

Agile / SCRUM
Design Research
DevOps
Service Design
User experience design (UX)
User interface design (UI)
Free and Open Source Software

4.2 Open scholarship methods

Book sprints
Code sprints
FabLabs

4.3 Academic methods

Knowledge transfer
Reproducible research

4.4 Startup methods

Crowd funding
Hack competitions
Open innovation
Stack exchange

4.4 Hacker Culture / Free culture

Hackdays

5. Scholarly Infrastructure

5.1 Existing Infrastructures

Market support
No market support
Science commons (e.g. Human Genome Project)
Research infrastructure lifecycles
Research workflows
Scholarly communication
Repositories
Pirate and shadow libraries
Long term preservation
Federated media
APIs
Bibliographic databases
Bibliographic indexing systems
Citation databases
Content repositories
Curricula
Encryption
Infrastructure coordination bodies (e.g. W3C)
Internet
Libraries
Mega journals (e.g. PeerJ, eLifeScience, PLOS ONE)
Metrics platforms and data
MOOCs
Multi-format journal platforms (e.g. PeerJ, eLifeScience)
Ontologies
Controlled vocabularies
Open citations
Open data platforms (e.g. Figshare)
Open hardware
Open knowledge
Free and Open Source Software
Open standards
Pre-print repositories
Privacy software
Publication repositories
Publishing systems
Search indexes
Search platforms
Software repositories
Virtual Research Environments (VREs)
Visualization software
Web
Wikimedia infrastructure
Open Science Graph
Shared Open Infrastructure

5.2 Missing infrastructure

Anonymized library usage data
Federated publicly accountable scholarly search engine
Federated or distributed Wikipedia
Open annotation
Open Web index
Public scholarly social media platform
Public Web archives, national or international (credible)
Multi-format publishing technology (reliable)

6. Technology

Technology life cycles
Semantic vocabularies
Persistent identifiers
Metadata standards
Machine readability
Application programming interface (API)
Blockchains
Concurrent versions system (CVS)
Content-addressable storage
Continuous integration
Cryptographic IDs
DOIs
Validation
Virtualization
Probabilistic topic modelling
Computer numerical control (CNC) (e.g. manufacturing lathes)
Robotics
3D Printing
Mini-computers and DIY electronics
Caching and Content Distribution Networks (CDNs)
Linked Open Data, tech stack
Open tech stacks

7. Stakeholders

Academics
Academies of science
Amateur societies
Chambers of commerce
Charities
Commercial 'knowledge transfer' partners
Commercial suppliers to academia
Consortia
Funders
Galleries Libraries Archives and Museums (GLAM)
Government
Political parties
Industry sector societies
Industry, private companies
Journals
Labs
Learned societies
News media
NGOs
Private research organizations
Public libraries
libraries
Library members
Publics
Publishers commercial
Publishers non-profit
Research groups
Research institutes
Research libraries
Research universities
Social enterprises
Societies (e.g archeology, library etc.)
Software programmers
Standards bodies
Startup sector
Tech sector
Think tanks
University presses
University research administrators
University students and alumni
Users of scientific content and facilities

8. Issues / problems in science systems

8.1 Existing systems issues

Discrimination by gender
Discrimination by race
Discrimination by class
Discrimination by sexuality
Exclusion of Global South
Personal knowledge management

8.2 New Open Science issues

Information overload
Commercial interests

9. Agreements / Policies

Data management plan
Patent non-aggression (Open Innovation Network (OIN))
Principles and guides for open science
Contributor agreements
Open Access Policy
Open Source Software Licensing
Content Licensing
Tendering policies for Free and Open Source compliance
Principles for Share Open Infrastructure

10. Ideas - histories / epistemology / philosophy

Hybridity
Mode 1 and 2 science - Open Science?
The Open Society
Technological autonomy (e.g. Digital City, Barcelona)
Distributed Systems

11. Knowledge / information / data

Impact factors
Research Excellence Framework (REF)
Collaborative knowledge

12. Platform types

Collaborative platforms
Taxonomies
Commodity vs. non-viable-direct-commodity (e.g. academic publications vs. email)

13. Citizen science

Crowd sourcing
Science advocacy
Public benefit