Community Capability Model
Interest Group Meeting

RDA 3\textsuperscript{nd} Plenary Meeting
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Dublin, Ireland

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Further Information:
http://communitymodel.sharepoint.com/
Current Interest Group Goals

- To demonstrate application of the CCMF Profile tool across a range of contexts and communities: disciplines, organisations, groups etc.
- To collect completed profiles from researchers in a diverse range of disciplines and sub-disciplines
- To investigate opportunities to customise the Profile template for particular disciplinary domains
Meeting Agenda

- Review of CCMF Profile tool (for newcomers)
- Developments since 2\textsuperscript{nd} RDA Plenary Meeting
  - Use case: Agronomy
  - Use case: DataONE
- Issues
- Discussion and Next steps
- AOB
Context

- **Experimental Science**
  - Observational description of natural phenomena

- **Theoretical Science**
  - Use of models and equations
    - e.g. Newton’s Laws

- **Computational Science**
  - Digital simulation of complex phenomena

- **Data-Intensive Science**
  - Unify experiment, theory and simulation

- **Data-Intensive Research**
  - Intensive data collection and processing
  - Big Data
  - Aggregation of diverse datasets

- Jim Gray

research.microsoft.com/en-us/collaboration/fourthparadigm/
Diffusion of Data-Intensive Research

http://books.google.co.uk/books/about/Diffusion_of_Innovations_5th_Edition.html?id=9U1K5LjUOwEC

![Diffusion of Innovations Diagram](http://books.google.co.uk/books/about/Diffusion_of_Innovations_5th_Edition.html?id=9U1K5LjUOwEC)

- Innovators: 2.5%
- Early adopters: 13.5%
- Early majority: 34%
- Late majority: 34%
- Laggards: 16%

www.neb-one.gc.ca/clf-nsi/rnrgrfmrtn/rnrgyrprt/nrgdmnd/tttdbhvrsppngnrgs2009/mg/f04-eng.jpg
Motivations for DIR

- **Funding Bodies** (e.g. NSF, European Union, UK Research Councils, Trusts, Learned Societies, Companies, Foundations)
  - Derive maximum research, economic and social benefits from investments
  - Improve the quality and efficiency of research (robust and reproducible)
  - Increase knowledge transfer within discipline; across disciplines; between sectors
  - Build sub-disciplinary, disciplinary and inter-disciplinary communities
  - Develop added-value services based on corpora of research data

- **Institutions** (e.g. HEIs, Facilities (e.g. CERN, STFC, EMBL))
  - Improve the quality and efficiency of research (robust and reproducible)
  - Increase ability to attract research funds
  - Build institutional and cross-institutional communities
  - Develop added-value services based on corpora of research data
  - Include data citation into research evaluation systems e.g. UK’s REF

- **Researchers** (Principal Investigators)
  - Opportunities for new and innovative research
  - Improve the quality of research (robust and reproducible)
  - Improve citations and reputation
  - Career advancement
  - Add data citation into research evaluation systems e.g. UK’s REF
Data-Intensive Research Lifecycle

Research Data Management

- Submit Proposal
- Gain consent for reuse
- Write DMP
- Capture & Collect
- Processing & Analysis
- Active Curation Data, Metadata, Workflows etc.
- Prepare Manuscript
- Publish Research Outputs
- Link Publication to Data
- Legal, Ethical Commercial
- Research Concept
- Search & Discover
Areas that need particular attention

- Legal, ethical and commercial issues
  - IPR, privacy, sensitivity, licensing
- Gaining informed consent for reuse and repurposing
- Appraisal and quality control
  - Collection and acquisition policies, peer review
- Trustworthiness
  - Metadata, documentation, context, provenance, transparency
- Scale and complexity of data
  - Workflows, methodologies, software, OAIS Representation Information
- Publication and sharing
  - Release policy, controlled access (embargoes), indexing, interoperability (syntax and semantics), cross-searching, federation
- Citation, attribution and accreditation in scholarly communications
  - granularity, versioning, persistent identifiers
The Community Capability Model Framework (CCMF)
- Profiling current readiness or capability of a community for DIR
- Indicating priority areas for change and investment
- Developing roadmaps for achieving a target state of readiness

CCMF White Paper, April 2012

- Developed through consultation: case studies and workshops
- Primarily a tool for self-assessment and longitudinal studies
- Categorised into Environmental, Human and Technical elements with eight factors:
  - Openness
  - Legal, Ethical & Commercial
  - Collaboration
  - Economic & Business
  - Skills & Training
  - Common Practices
  - Research Culture
  - Technical Infrastructure

- Each factor has characteristics associated with it

communitymodel.sharepoint.com
CCMF Profile Tool

- Implemented as an MS Excel spread sheet
- Separate worksheets for each of the eight CCMF factors
- A scorecard tool (5 levels or dimensions for each characteristic within each factor)
- Download CCMF Profile Template from: https://communitymodel.sharepoint.com/
CCMF Profile Tool Worksheets

- Data-Intensive Research
- Skills & Training
- Collaboration
- Online
- Legal, Ethical, & Commercial
- Common Practices
- Technical Infrastructure
- ENVIRONMENTAL
- HUMAN
Recent Developments

- IDCC 2014 workshop - Delegates wanted to
  - Change language to be more (sub)discipline specific
  - Change examples to be more relevant to their own domain

- Use case: Data Observation Network for Earth (DataONE)
  - An umbrella organisation covering all Environment Science
  - One Profile completed collectively by SMT on behalf of whole organisation
  - Need IRB approval to disseminate Profile to partners

- Use case: Agronomy (Purdue University)
  - Agronomy specific Profile template
  - Three Profiles completed by three individual agronomists
  - Need IRB approval for widespread dissemination and collection of completed Profiles
Agenda

- Developments since 2\textsuperscript{nd} RDA Plenary Meeting
  - Use case: Agronomy
  - Use case: DataONE
- Review of CCMF Profile tool
- Issues
  - Who would like their completed Profiles to be published anonymously?
  - Who needs IRB approval before they are prepared to fill in the profile?
- Discussion and Next Steps
  - Domain “champions” to undertake localisation of Profile template
  - Collect lots of completed profiles for analysis and comparison
  - Effective visualisation of results and comparisons
  - Platform for community engagement
- AOB