DDI Alliance

Strategic Plan 2021-2023

Draft for comment - April 2021

Introduction

As the DDI Alliance moves into the next phase of its development, there are some overarching priorities that the Alliance needs to address. Framed broadly, these priorities fall into three core areas: the DDI community, the Alliance as an organisation, and the set of DDI standards and work products that the Alliance maintains.

The strategic plan is developed along the following lines to address these broad priorities:

1. Community and outreach: how do we engage with the DDI community and understand the community's needs?
2. Organisational needs: what structures and systems does the Alliance need in order to meet those needs, and how will it maintain those structures and systems in the long term?
3. Standards: what products does the Alliance provide and maintain, and how do those products meet the needs of the Alliance and the broader community

The DDI Alliance budget and work program, to be developed subsequent to the acceptance of the Strategic Plan, are then intended to align with these strategic priorities. This will include the need to identify resources (including money, time and in-kind contributions), and responsibilities (e.g. party/organization/team) for each part of the strategic plan. Similarly, the resource constraints within the Alliance will by necessity limit the extent to which we can achieve the goals set out in this Plan.

Working principles

The specific strategic activities proposed in the plan have been established with the following principles in mind:

1) Don't leave anyone behind--no dead end with any prior DDI track
2) Lower barriers to entry/use
3) Respond primarily to user demands/requests
4) Market, market, market
5) Simpler is always better
6) Let user requests drive development

Strategic Priority Area One: The DDI User Community

PROBLEM STATEMENT:

The DDI standard's success is directly related to its ability to attract, develop, and retain archives and data producers that use DDI in data production and dissemination. DDI advances the FAIRness of data to the extent that there is broad adoption. Our overall strategic priority is to build the DDI user community. We will encourage membership in the DDI Alliance *and* use of the standard, so that DDI products become the basis for comparability and interoperability for research and statistical data worldwide.

STRATEGIC ACTIONS:

1. Understand current DDI Users and promote existing DDI products
    a. Determine who uses DDI
        i. Who are they?
        ii. Why do they use DDI?
        iii. What do they like or not like about DDI?
    b. Produce and disseminate marketing materials that explain DDI Codebook and DDI Lifecycle to data producers and archives

2. Support current DDI users
    a. Create brochures, videos, training activities for current users
    b. Engage with third-party tool developers or identify resources to undertake DDI software tool development
    c. Centralize and standardize training and support resources (“Training Library”).

3. Engagement with Global Digital Research Infrastructure
    a. Develop best practices to map and translate DDI for DataCite, schema.org and other key metadata repository services
    b. Find common ground and leverage efforts of other research data organizations

Strategic Priority Area Two: The DDI Alliance as an Organisation

The Alliance has a broadening set of both members and user needs, bringing with it new requirements for the standards and outreach that we do. One impact of this broadening reach is the need to become more “professional” in the way the Alliance operates. This professionalisation includes the maintenance and development of our core organisational infrastructure (such as websites, marketing and project management). At the same time, we want to retain the core volunteer culture that formed the foundation of the Alliance, and continues to drive the participation of many members and participants in the Alliance. We are facing a period of volunteer and staff renewal, requiring the need to expand our core development base and volunteer community.

1. Generational Renewal
    a. Recruit the next generation of knowledgeable and skilled core technical development team
    b. Expand skilled marketing team that is connected to relevant communities (archives, software producers, data producers, statistical agencies, individual researchers, other standards)
        i. NOTE For both (a) and (b) Who is actively engaged in this now? What are their organizations? What is the committee membership? Does it have a rotation? A leadership? Can we set up a schedule with a rotation of membership and leadership, with the leader of the committee responsible for identifying and planning for new leadership and new membership, say every two years?
    c. Renew active and engaged membership at the institutional level in the DDI community (strengthening the commitment)
    d. Plan for the changing roles of long-standing contributors to the Alliance effort
        i. Transition of roles (e.g. head of Technical Committee)
        ii. Transition of activities (different roles for such contributors)
        iii. Transition of their institutions (does the institution continue to support the Alliance once the specific member has moved on)
        iv. NOTE: this has some overlap with 1(a) above, and with the “Membership” sections of the strategy. Consider also: How many institutions do we have now? Can we show graph of membership over time?

2. Training: Enabling trainers to do what they need to do
    a. Recruit human resources (paid and/or volunteer) to offer multifaceted DDI training.

i. Develop a role for a membership appointed DDI Alliance designated "Trainer"
    1. The official DDI Trainer will work with the DDI Alliance Training Working Group and offer dedicated support for training in all formats and types; as needed and in close collaboration with the various WGs and Executive Board requirements for at least a 1-year period.
    2. DDI Trainer will provide support for in-person training at conferences, workshops, seminars, as requested and funding permits.

b. Build-up online training presence to expand current offering of training.
    i. Extend the current offering of online training materials to support self-driven, passive training through online and web-based training delivery
    ii. Develop web-based video tutorials such as "What is DDI?" , "How to get started with DDI?", "Building reusable questionnaires with DDI", etc.

c. Support new trainers and users with easy-to-understand and reusable tools for DDI Training
    i. Develop reusable checklists for getting started with DDI
    ii. Develop and maintain a listing of organizational DDI user profiles, licensed openly for reuse
    iii. Develop, gather and share reusable training materials (e.g. training toolkits for different audiences and use cases)

3. Business Structure
    a. Establish a periodic review of organizational structure
    b. Develop formalised roles and succession planning for certain Alliance activities
        i. Roles: marketing, website support, "member services", training support???)
        ii. Paid staffing of some roles
        iii. An organizational succession plan for both paid and volunteer roles
            1. (see also 1 d above)
    c. Develop a sustainable business model for the Alliance
        i. Establish a DDI "Finance Committee" to develop Revenue and Expenditure planning model for the Alliance - particularly focussed on revenue models for supporting key development activities of the Alliance
        ii. NOTE: See slides on "Expanding the Revenue Base" and "Aligning Revenue and Expenditure"

Priority area Three: Standards and Work Products

Overview of Current Products

The Data Documentation Initiative (DDI) is a suite of products that describes metadata about both quantitative and qualitative research data in the social, behavioral, economic, and health sciences. The DDI suite is a set of free standards that document and manage different stages of the research data lifecycle, including conceptualization, collection, process, distribution, discovery, and archiving.

The content areas of DDI cover the following areas:

- Conceptual objects: concept, unit, unit type, universe, population, geographic structures, and representation
- Methodological objects: approaches to sample selection, data capture, weighting, quality control, and process management
- Processing: data capture, data processing, analysis, and data management
- Quantitative and qualitative data objects: concept, universe, representation, usage, data type, record, record relationships, storage, access, and descriptive statistics
- Data management: ownership, access, rights management, restrictions, quality standards, organization, agent management, relationship between products, versioning, and provenance

Products within the DDI suite differ in terms of their area of coverage within DDI, supported activities, and required level of infrastructure. From simple descriptive content for human understanding to structures that support metadata-driven statistics production and analysis, DDI addresses a broad area of data management needs. As a suite of standards, DDI provides a common means of identification for information objects, support for common cross-product content, and an informed means of transforming content between products.

Current DDI Products

- DDI Codebook - Structured, descriptive documentation of the content, meaning, provenance, and access for a single data set.
- DDI Lifecycle - Lifecycle expands on the idea of Codebook in terms of content coverage, depth, metadata management over time, reusable metadata, and support for the planning, capture, processing, storage, discovery, and dissemination of data. It allows grouping and comparing related studies or series of studies.
- Controlled Vocabularies - A set of controlled vocabularies commonly used in social science and other disciplines to support systems designed to identify, locate, and access data for research purposes.
- XKOS - Extended Knowledge Organization System (XKOS) leverages the Simple Knowledge Organization System (SKOS) for managing statistical classifications and

concept management systems. XKOS adds the extensions that are needed to meet the requirements of the statistical community.
- SDTL: Structured Data Transformation Language (SDTL) is an independent intermediate language for representing data transformation commands

Products under development

- DDI-Cross Domain Integration (DDI-CDI) - It is designed to be a model which can be used to connect disparate forms of data with each other. It can be used as a way of integrating new forms of data with more traditional, existing data, or with each other. Ultimately, the diverse types of data must be seen as an integrated whole, complete with a description of the structure, meaning, and provenance of each part. DDI-CDI is intended to meet this need.

Strategic actions on DDI Standards are intended to provide orientation on which standards and work products to develop and maintain, and why. There is need to be able to maintain the existing standards to ensure that we can continue to support small scale users such as academic libraries and research centers, while continuing to develop model-based standards and associated work products to support the expanding user base in communities such as statistical agencies and data producers.

STRATEGIC ACTIONS:

1. High-level goals

    a. Make DDI specifications ready for being building blocks in a global research data infrastructure (together with other specifications)

    b. Cooperate with other standardization groups to build an efficient network of specifications

    c. Align with FAIR principles and FAIR ecosystem

    d. Provide means for efficient use of DDI specifications which comprehends robust specifications using state-of-the art technologies, good documentation including implementation and usage guides, support for a framework around the specifications including protocols and services

2. Maintaining multiple lines of specifications and controlled vocabularies

    a. Offering stable specifications and controlled vocabularies (reference Work Products)

b. Ensuring portability of DDI metadata between specifications and to outside specifications (i.e. mapping between specifications, re-use of elements of other specifications)

c. Enable DDI specifications to adapt to changes in information technologies and languages (XML Schema, OWL/RDF-S, Schema.org, …).

d. Improve modular approach of specifications to enable the use of functional parts of specifications (from monolithic to modular design). Enable use of parts of specifications together with third party specifications.

e. Production testing/validation for quality assurance

f. Improve documentation. Integrate with examples and best practices guidelines. Make documentation usable from a training and self-teaching perspective

g. Providing test cases and an automated test framework for ensuring quality and robustness of main purposes of specifications

h. Maintaining a development and research project (like DDI Moving Forward) to explore new features and technical platforms. All specifications might benefit from such a laboratory environment. The idea is to separate concerns of development/research from the concerns of creating stable specifications.

3. Improvement of interoperable and distributed DDI infrastructure for use and reuse of DDI resources. Adding useful components around the specifications for users.

a. Guidance on which DDI specification and which parts of DDI for specific use cases

b. Introduce validation rules and related tools, testing support, and mechanisms for using specific subsets of specifications for the purpose of interoperability

c. Implementation guides to help software architects and developers i.e. choosing the appropriate subset of a specification

d. Maintaining a platform for specific subsets of specifications for main usage purposes

e. Technical DDI services, especially resolution of DDI URNs to the physical location of DDI resources (identified by URLs)

f. Standardized query/exchange protocol enables building repositories and reuse of DDI metadata in the web

g. Best practices for using all components together

4. Registries/-repositories

a. Specify DDI's vision of building DDI into Common Data Element registries (Strategic Plan & Vision)

b. Identify ways for establishing portals for supporting existing and growing DDI metadata repositories.

c. Leveraging technologies of topic 2 above, especially standard query and exchange protocols/interfaces