

Murmurations: Making Movements Visible

Distributed data sharing for the new economy — Murmurations is a distributed data sharing network and open source plugin suite intended to help connect new economy projects and organisations and make them visible to the world. Murmurations includes four components [documented as goals in this StratML rendition]

This whitepaper describes the background and motivation for Murmurations, its architecture, an initial roadmap for development, adoption, and governance, some risks and associated mitigation strategies. Feedback is requested.

Contents

Vision.....	3
Mission.....	3
Values	3
1. Schema	4
1.1. Base Schema.....	4
1.2. Add-On Schemas.....	4
2. Organizations & Projects.....	5
2.1. Nodes.....	5
3. Index.....	6
3.1. Nodes.....	6
3.2. Networks	6
4. Aggregation.....	7
4.1. Maps	7
4.2. Directories	7
4.3. Feeds.....	7
4.3.1. Sectors	7
4.3.2. Networks	7
4.3.3. Regions.....	7
Administrative Information.....	8

DEMONSTRATION ONLY



Murmurations Network (MN)

Stakeholder(s):

Adam McKenty :
White Paper Co-Author

Oliver Sylvester-Bradley :
White Paper Co-Author

Vision

The new economy flourishes

Mission

To help connect new economy projects and organisations and make them visible to the world

Values

Self-Reliance: The Murmurations approach -- Nodes hold their own data -- In the Murmurations network, every node holds the authoritative copy of data about itself. This is shared through the network, allowing maps, directories, and other aggregators to stay automatically up-to-date by pulling the authoritative data held by the node itself.

Simplicity: Start as simple and low-tech as possible -- Much of the alternative economy does not operate on cutting edge technology. In order for a coordination system to be relevant, adoption needs to be smooth and simple for the majority of the projects and organizations who could be part of the network. Our approach is to start with a suite of plugins for Wordpress, which is used by the worldwide majority of SMEs and small NGOs (35% of all websites), while also releasing code to generate static Murmurations-compatible structured data files that can be uploaded to any website, so that any website using any CMS or other publishing system can join the Murmurations Network. Using the plugin, a website administrator with only limited technical knowledge can get a node setup and on the network in less than two minutes.

Standards: Use existing standards for open data -- Murmurations makes use of existing standards for open and structured data. These include RDF and JSON-LD structured data specifications, schemas from Schema.org and the RIPESS ESSGlobal vocabulary for Social and Solidarity Economy organizations, and RSS for news and event data. We do not want to reinvent the wheel and aim to build upon existing standards and technologies wherever possible.

Openness

Flexibility: Build in flexibility and extensibility -- Starting with a minimal specification for node data and a basic plugin architecture, Murmurations can be extended with addon schemas that specify fields relevant to particular networks, regions, or sectors. Custom node plugins and aggregator code allow the creation of new functionality on top of the Murmurations data structure and data sharing architecture.

Extensibility

1. Schema

Specify an extensible data schema for describing organizations and projects

An extensible data schema for describing organizations and projects — Schemas specify how data is structured in the murmurations network. Schemas are stored in JSON files that are read by the node plugin, and define the attributes of each data field, including how it shows up in the input form and how data is validated once entered.

1.1. Base Schema

Use a simple starting set of fields

Murmurations uses a simple starting set of fields (based on Schema.org’s “Organization” schema and the ESSGlobal Social and Solidarity Economy vocabulary) as the base schema for describing nodes. The current version is housed in the Murmurations schema repository. This base schema is under development, and feedback is requested. Comments can be made via issues on the GitHub repo, or via the contact form on Murmurations.network.

Stakeholder(s):
Schema.org

1.2. Add-On Schemas

Define fields relevant to particular networks, organization types, sectors, or data applications

Add-on schemas can be used to define fields that are relevant to particular networks, organization types, sectors, or data applications. In the current Murmurations architecture, network organizations can host add-on schemas, and register them with the murmurations index. Once an add-on schema is registered with the index, nodes that identify themselves as members of the network that owns the schema have the option to fill fields defined by the add-on schema within the node plugin... Specifications for add-on schemas are in the readme document in the Murmurations schema repository. <https://github.com/Photosynthesis/MurmurationsSchema>

Stakeholder(s):

Network Organizations

Worker Co-op Alliance of Vancouver :

Example — The Worker Co-op Alliance of Vancouver wants to show a map of their members, including how many worker-owners are part of each co-op. The Alliance’s website administrator creates an add-on schema that defines a field for ‘Number of members in the co-op’. Once this add-on schema is published to the index, nodes can choose to identify themselves

as part of the Worker Co-op Alliance of Vancouver’s network. The new field for ‘Number of members’, created by the Alliance’s admin, automatically appears on the Murmurations admin pages of nodes which add ‘Workers Co-op Alliance of Vancouver’ in the “Networks” field, so that these nodes can specify how many members they have, and that data can be used by The Alliance’s aggregator.

2. Organizations & Projects

Enable managers to publish information about their organizations & project to the network

An easily-installed plugin and other tools for organizations and projects (nodes) to publish information about themselves to the network

2.1. Nodes

Populate the base schema fields with data

Organizations or projects not using Wordpress can create a static JSON file and upload it to any web-accessible location, add their node to the index, and participate in the network. The development version of the node plugin is available on GitHub. <https://github.com/Photosynthesis/Murmurations>

Stakeholder(s):

Wordpress Users :

The node plugin, in its initial Wordpress version, automatically populates many of the base schema fields with data from the Wordpress database. This

makes the initial node setup very simple. The Wordpress plugin uses a WP REST API endpoint to provide data to the network.

3. Index

List the nodes of the network

An index that maintains a list of all nodes — The index is the only centralised component of the murmurations network. Its function is to store URLs to facilitate discovery within the network.

3.1. Nodes

Maintain an index is used by aggregators to find content

Index of nodes — The node index is used by aggregators to find content. The index stores minimal information about each node, including the node's API address, indexed by the node's URL. Aggregators can query the index API to find nodes matching various parameters.

3.2. Networks

Maintains a list of aggregators

Index of networks — The networks index maintains a list of aggregators that have defined custom Murmurations add-on schemas. This index is queried to populate the network membership options within the node plugin, and to collect add-on schemas to build the node plugin form fields.

4. Aggregation

Aggregate the data for presentation

Stakeholder(s)

Aggregators :

Murmurations aggregators — Aggregators query the index, and then node APIs, to generate feeds, maps, and directories based on filter criteria. The Murmurations Aggregator plugin demonstrates how to automatically generate maps and directories from the network.

other uses of the Murmurations data. Aggregators can publish custom add-on schemas so nodes that are members of their organisations, or networks, or within their sector can publish sector-specific data that is of interest to the aggregator. The “networks” field within the node plugin can also be used by aggregators to limit queries to only nodes within their network.

Custom Aggregators :

Custom aggregators can build on the demo aggregator plugin code to provide new views, directories, maps and

An aggregator plugin that uses Murmurations data to automatically build maps, directories, and feeds that showcase nodes in particular sectors, networks, or regions

4.1. Maps

Build maps

4.2. Directories

Build directories

4.3. Feeds

Build feeds

4.3.1. Sectors

Showcase nodes in particular sectors

4.3.2. Networks

Showcase nodes in particular networks

4.3.3. Regions

Showcase nodes in particular regions

Administrative Information

Start Date:

End Date:

Publication Date: 2020-05-03

Source: <https://murmurations.network/wp-content/uploads/2019/09/murmurations-white-paper-v0.1.0.pdf>

Submitter:

Given Name: Owen

Surname: Ambur

Email: Owen.Ambur@verizon.net

Phone:

DEMONSTRATION COPY