



NATIONAL INFORMATION EXCHANGE MODEL

NIEM Adoption Process

July 2021

Ways to Get Involved with NIEM

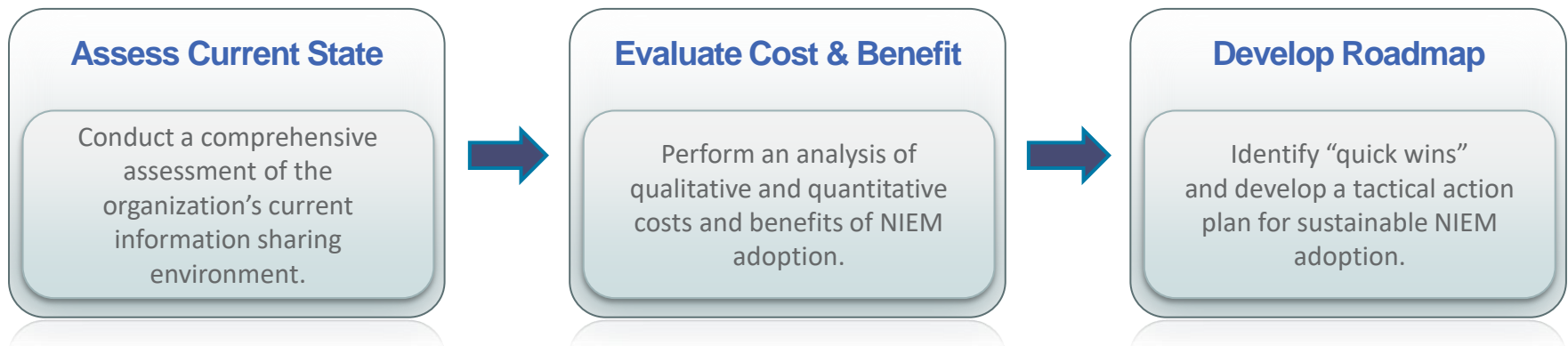
Multiple ways to get involved with and use NIEM. Below is a table that outlines the various ways to get involved.

	Level of Interaction with PMO	Level of Effort
Using an Existing NIEM-Conformant Exchange	Low	Low
Creating a NIEM-Conformant IEPD	Low	Medium
Participation in Community-Wide Events	Medium	Low
Participation in an Existing Domain	Medium	Medium
Establishing a New Domain	High	High

ROADMAP TO ADOPTION

NIEM Engagement Process

The engagement process is a self-service model that includes tools and methods for organizations to:



Results

- Identify information exchanges where NIEM can provide the most value to the organization.
- Develop a tailored action plan outlining how the organization can adopt and sustainably use NIEM for information exchange.

Overview

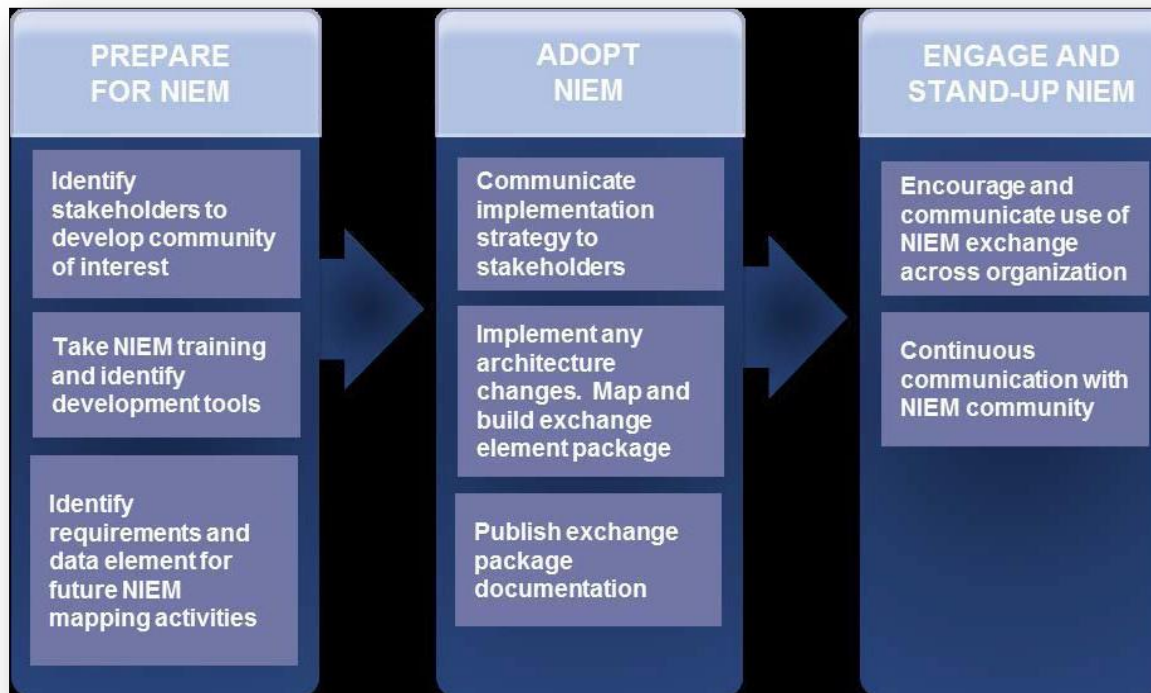


Figure 13: High Level NIEM Adoption Plan

Prepare for NIEM

In preparing to adopt NIEM for a desired exchange activity, the suggested adoption plan includes relevant community stakeholder identification, targeted NIEM training based on assigned tasks to execute, and NIEM requirements with mapping of desired elements.

Phase	Description
Develop Community of Interest	Identify information sharing and exchange activity stakeholders to develop and understanding of NIEM use and agree on exchange process enhancements.
NIEM Training and Tools	Participate in available training (e.g., web-based, classroom) that is role based for each attendee. See Appendix A.
NIEM Requirements	Define requirements needed for developing a common exchange for all stakeholders involved in the exchange process.

Adopt NIEM

This phase describes the communication and execution of NIEM implementation strategy and exchange modeling for an information exchange activity.

Phase	Description
Communication of implementation strategy to relevant stakeholders	Communicate to stakeholders NIEM implementation strategy that includes design and execution of a common and reusable information exchange format.
Map and model information exchange	Identify elements required to develop information exchange package documentation. All elements will be mapped to specific data components for information exchange execution.
Publish information exchange package	Publish information exchange package in a NIEM repository (e.g., IEPD Clearinghouse) for other stakeholders to search and discover for reuse.

Engage and Stand-Up NIEM

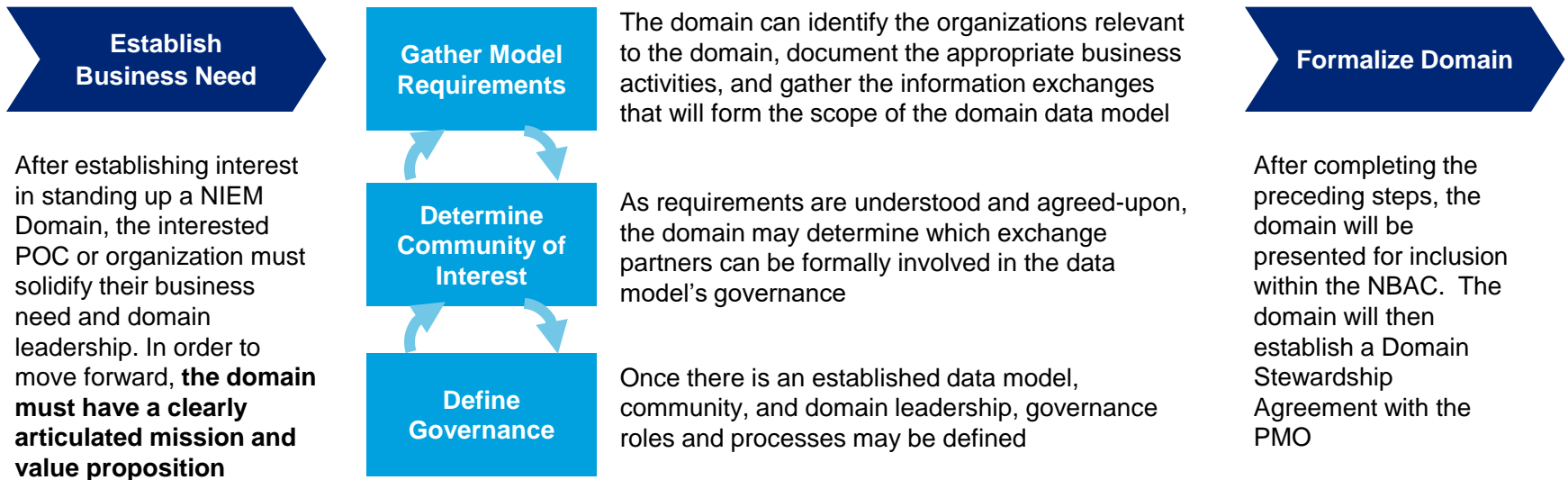
This phase requires for all resources to assist in solidifying the exchange process and rolling out the baselined procedures for the NIEM conformant exchange. After successfully communicating specification changes and implementing a NIEM exchange, an organization should encourage the reuse of the exchange process and begin to expand beyond initial exchange partners.

Phase	Description
Encourage NIEM reuse for stakeholder groups	Develop an understanding/agreement (e.g., Memorandum of Understanding) with current and/or potential exchange partners that define usage agreements, sharing agreements and or minimum security requirements to assist with attaining common exchange format reuse.
Continuous communication with NIEM community	Engage with NIEM community and continuously communicate NIEM process execution to leverage lessons learned and implementation best practices.

Establish and Lead a Domain

The Domain Onboarding Process

The Domain Onboarding Process will serve as a flexible, transparent tool to support emerging domains and ensure that they become self-sufficient



While the first and last steps in domain onboarding are always the same, the intermediate steps can be taken simultaneously according to each domain's needs.

Establish Business Need

Establishing the business case for a NIEM domain is the required first step for all proposed domains. A strong business case ensures that there is a need and capability to establish a new domain

Establish Business Need

Required Steps

- ☐ Determine scope of business need
- ☐ Assess whether proposed domain may overlap with existing NIEM domains or NIEM Core
- ☐ Articulate Value Proposition, which includes the benefit of proposed domain to their organization, mission-space, and the broader NIEM community
- ☐ Begin designating individual(s) that have the capability and resources to help stand up and support propose domain
- ☐ With information and resources above, draft and submit value proposition document to NIEM PMO and NBAC for feedback

Community Enablers

- NIEM Model Release
- NIEM Engagement Process
- Domain Value Proposition Template

New Data Elements May Not Require a NIEM Domain

Element is not found in NIEM Core

The data element can be submitted through the NBAC. As part of the data harmonization process, the NBAC will review all submissions and issues and respond to the request for the data element

Element is mission space-specific and a domain data model exists for that mission space

A request can be made to the Point of Contact for that NIEM domain to add that data element. Each domain has its own process for updating its data model, depending on the domain's business needs and resources available

Element is mission space-specific but no domain data model currently exists for that mission space

An interested organization may work with the PMO and NBAC to initiate the process of establishing a NIEM domain

Ways to Get Involved with NIEM

Not all proposed domains may have a strong business case. However, there are other ways to get involved with NIEM outside of establishing a new domain

	Level of Interaction with PMO	Level of Effort
Using an Existing NIEM-Conformant Exchange	Low	Low
Creating a NIEM-Conformant IEPD	Low	Medium
Participation in Community-Wide Events	Medium	Low
Participation in an Existing Domain	Medium	Medium
Establishing a New Domain	High	High

Domain Onboarding

If there is a strong business case for the proposed domain, the domain may continue along the Onboarding Process. Each domain may go through these steps in a different order based on their needs

	Required Steps	Recommended	Community Enablers
Gather Model Requirements	<ul style="list-style-type: none">❑ Based on the domain's value proposition, define organizations relevant to the domain❑ Document business activities❑ Identify existing or notional data exchanges that can form scope of domain data model	<ul style="list-style-type: none">• Review current model release to begin ensuring model harmonization	<ul style="list-style-type: none">• NIEM Model Release• NIEM Tools Catalog• NIEM Online Trainings• Component Mapping Template
Determine Community of Interest	<ul style="list-style-type: none">❑ Contact exchange partners and other stakeholders across federal, state, local and tribal levels to notify them of the new domain and encourage participation in the domain	<ul style="list-style-type: none">• Develop stakeholder engagement plan to encourage domain participation by federal, state, local and tribal stakeholders• Develop messaging and NIEM.gov community webpage	<ul style="list-style-type: none">• "Be a NIEM Superhero" Communication Guide• Stakeholder Engagement Template
Define Governance	<ul style="list-style-type: none">❑ Determine the appropriate organization to steward the domain. The domain steward should be able to provide resources and guidance for domain operations❑ Draft Domain Charter	<ul style="list-style-type: none">• Begin drafting domain operations and maintenance plan	<ul style="list-style-type: none">• Domain Charter Template• Domain Operations and Maintenance Plan Template

Formalize Domain

Prior to inclusion as a formal member of the NBAC, all proposed domains must submit their finalized Domain Value Proposition to the NBAC and NIEM Executive Steering Council (ESC)

Formalize Domain

Required Steps

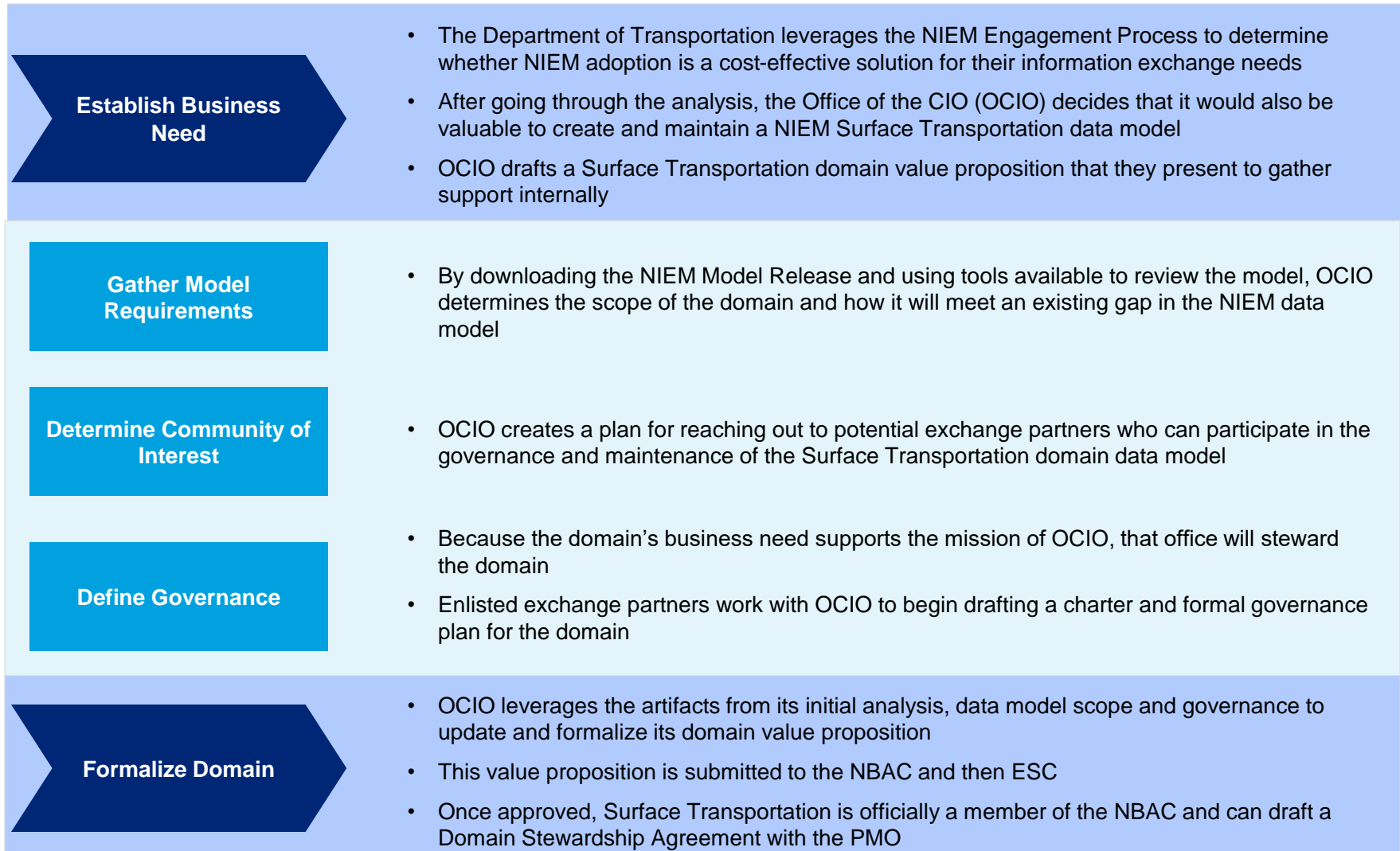
- ☐ Update Mission Statement and Domain Value Proposition
- ☐ Submit Value Proposition to NBAC Co-Chairs for vote on inclusion of NIEM Domain
- ☐ After receiving NBAC approval, submit Domain Value Proposition to the ESC for approval
- ☐ After receiving ESC approval, draft and submit signed Domain Stewardship Agreement to NIEM PMO
- ☐ Submit content to PMO summarizing Domain for NIEM.gov Community Page

Community Enablers

- Domain Value Proposition Template
- Domain Stewardship Agreement Template
- NIEM.gov Community Page Template

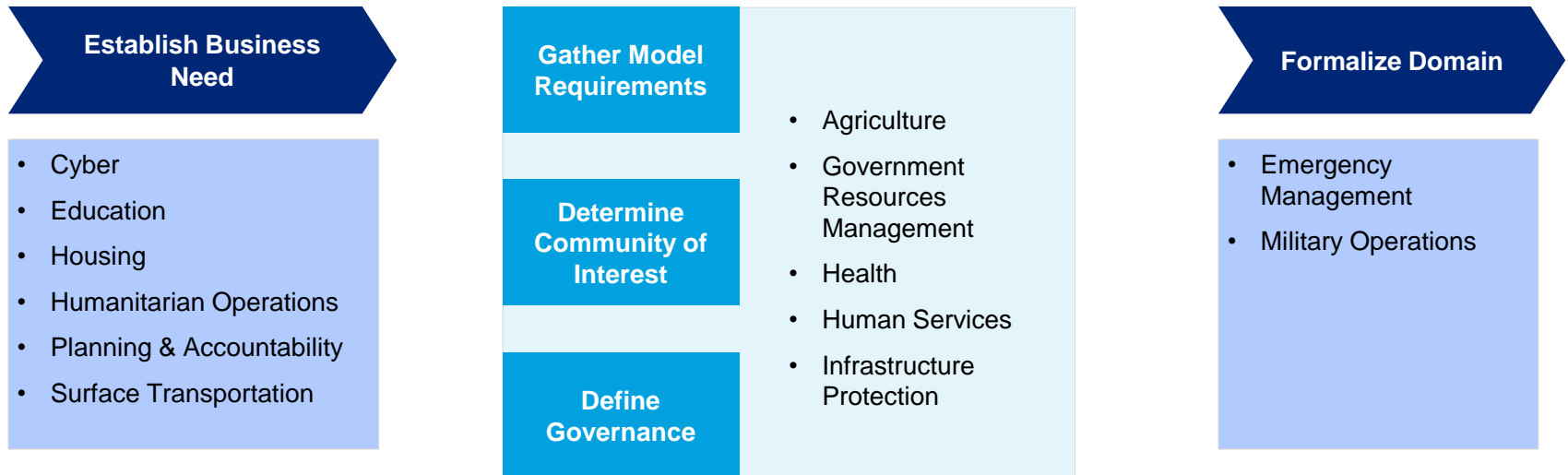
Notional Use Case – Surface Transportation

The Domain Onboarding Process can be used by domains as they establish themselves. One notional example of this would be the Surface Transportation domain.



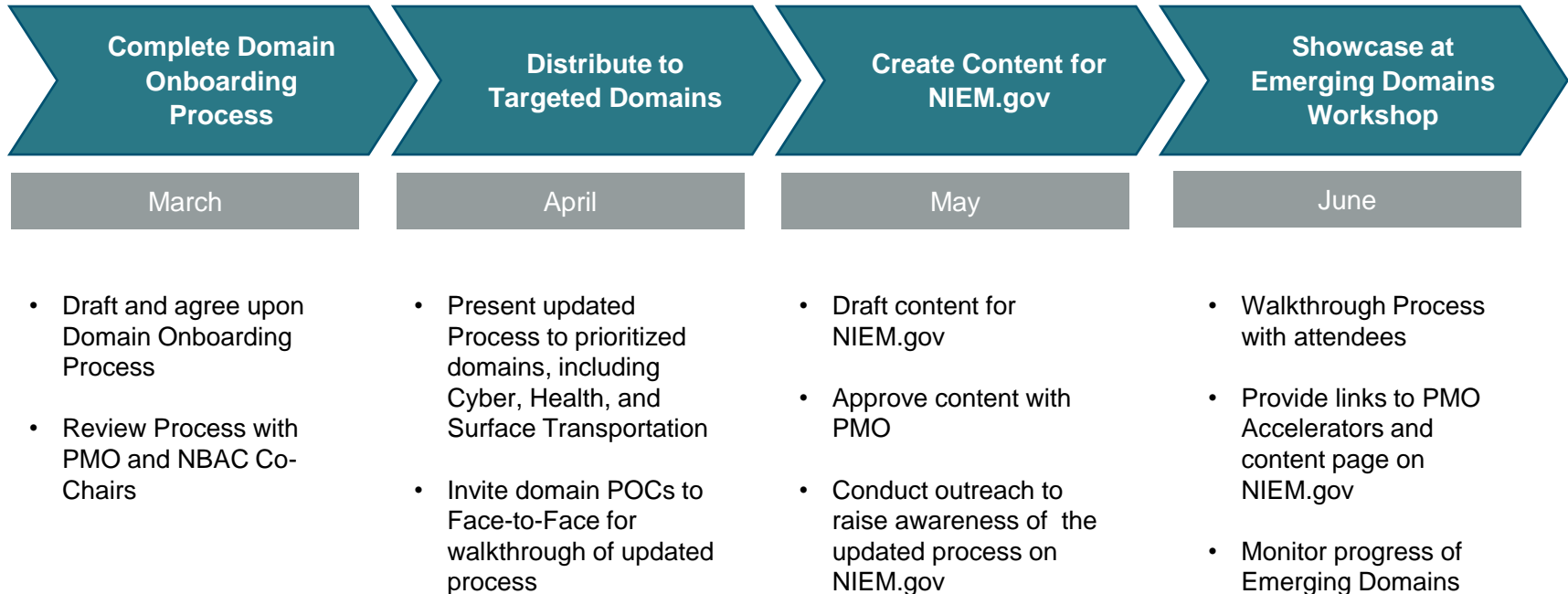
Status of Emerging Domains

The NIEM PMO can also use the Domain Onboarding Process as a tool to monitor and track the progress of all emerging domains. Below is a current state of all emerging domains.



Implementation and Next Steps

The online version of the Domain Onboarding Process will be introduced at the Q3 Emerging Domains Workshop in June.



Beyond Q3, the PMO will continue to iterate and optimize the Onboarding Process based on community needs and requirements.

Sharing Data Using NIEM

Message Exchanges Simplified

- Who: Web and Application developers
- Prerequisite – knowledge and experience in programming and application development.
- How: Programming in data exchange standards such as XML, JSON
 - Develop a message exchange package (MEP) to be implemented in accordance with your software architecture and design.
- Common implementations include:
 - APIs – application programming interface. APIs are a common way to request and interface with data.
 - Message Queue – store NIEM-conformant XML, JSON, etc. instances within a message queue during its response to a stakeholder's information request service
 - Web Services – embed a NIEM conformant schema into a new or existing Web Service and perform an electronic transfer with one or more exchange partners
- Once the data is received then you decide what to do with the data – e.g. ETL