White Paper

How Might We Improve Federal Program Management by Addressing the Gap between the Mission and Mission Support?

ATARC Growing Good in Government (G3i) Working Group

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Abstract: The Integrated Value Network (IVN) is a network of policies, laws, and data analytics that illuminates the levels of abstraction between Federal Business Requirements and Stakeholder Requirements. The IVN is one component of the Growing Good in Government Initiative (G3i), sponsored by the USDA's Marketing and Regulatory Programs (MRP) Mission Area Chief Operating Officer (COO), Chief Data Officer (CDO), and Senior Program Manager (MASPM). G3i promotes building the capacity and capability to improve communication, coordination, and continuous improvement between the Mission and Mission Support activities. To do this, G3i supports stakeholder value through not only the IVN but also the USDA Program and Project Management (P/PM) Community of Practice. These two areas provide the foundation for how MRP approaches the implementation of the Program Management Improvement Accountability Act (PMIAA) and it's 5-year strategic plan from the Office of Management and Budget (OMB), M-18-19. The goal of both efforts, G3i is to provide the critical support that program and project managers need to make the adjustments that will lead to improvements in mission delivery. This white paper's aim is to discuss options to interagency collaboration and better experience for participants using this collaborative platform to provide tangible improvements in program outcomes.

Disclaimer*: This document was prepared by the members of the ATARC Growing Good in Government Working Group in their personal capacity. The opinions expressed do not reflect any specific individual nor any organization or agency they are affiliated with and shall not be used for advertisement or product endorsement purposes.*

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Mission of the Working Group

The government's ability to deliver value to its citizens and mission partners depends on its ability to manage the entirety of requirements both in the Mission and Mission Support domains. Delivering value requires integration and alignment of a complex array of policies, objectives, and key results (Figure 1). The mission of this working group is to discuss and ultimately deliver enterprise solutions to break down organizational silos and build the data and analytics infrastructure that provides a bridge between the gaps in the fragmented data architectures. To that end, it will be imperative to leverage new information technology and skill sets to evolve data management towards knowledge management, supporting organizational decisions and capabilities.

Figure 1: Power BI Network Navigator visualization of an Integrated Value Network

The Growing Good in Government (G3i) Working Group encompasses a broad and ambitious scope, reflecting its transformative nature to deliver solutions to provide answers to critical portfolio, program, and project-level business questions. The imperative emerges to leverage new information technology and skill sets to evolve data management toward knowledge management in support of organizational decisions and capabilities.

1. Policy as a Neural Network

Consider an organization as a network of requirements at different levels of abstraction. Within these networks, delivering a requirement often progresses another requirement closer to delivery, i.e., requirements in a system enable and depend on each other for delivery and value. When requirements in a network are connected by arrows (see also "edges" or "synapses") that indicate how requirements enable and depend on each other for delivery value, these connections reveal insights about how to communicate, coordinate, and influence improvement in that organization, systemically. One representation of this network of requirements interdependencies is an Integrated Value Network.

We pose the question: How might we establish the Integrated Value Network as the foundation to structure and align Federal governance artifacts (e.g., laws, regulations, policies, strategies) in our organizations?

2. The Integrated Value Network (IVN) Project

2.1 The Value of the IVN

Laws and regulations requiring publication of plans, risks, and measures prescribe and generate a network of governance documents as an emergent property of the requirements. Such procedurally generated networks are subject to functional measurements of logical validity of inferences, plasticity, and accuracy of inferences. Thus, subjecting to these measurements a network of governance documents generated by requirements in law or that emerge from the law yields insights about the consistency of these requirements as a single interdependent network.

These measurements provide insights about how to revise governance documents and the laws and regulations that prescribe them and their relationships. These insights increase not only the functionality of individual governance documents, but also the net functionality of the knowledge network. One potential use of the IVN should be to identify the set of documents (e.g., policies) that would need reviewing or revising when one document that controls them (e.g., a business requirement) undergoes a change.

In this white paper, we present a case study of a multi-year joint effort involving USDA and several private and public sector partners to drive collaboration; we include lessons learned, current progress, and future vision.

As a data tool, the IVN provides a schematic of programs, plans, metrics, regulations, and laws based on how they inherit authority from the U.S. Constitution.

In the realm of information technology models, IVN represents a data schema of Federal policy (Figure 2) with the Constitution as its root node, generating requirements through the Legislative Branch to laws and regulations and policy, through the Executive Branch to Executive Orders and policy that comply with those orders.

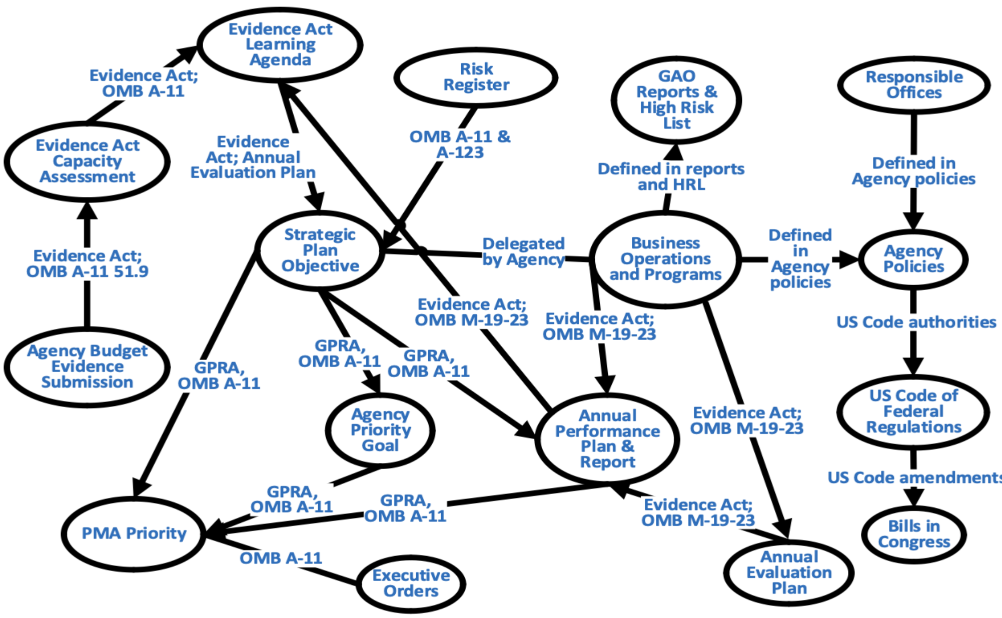

Figure 2: Federal Governance Structure

IVN is a new approach to data architecture and policy analysis because it uses a neural network to understand and communicate how Federal laws, regulations, policies, strategies, and performance metrics deliver business value to each other. The visual representation indicates nodes for each governance document with arrows that show the movement of business value (Figure 3).

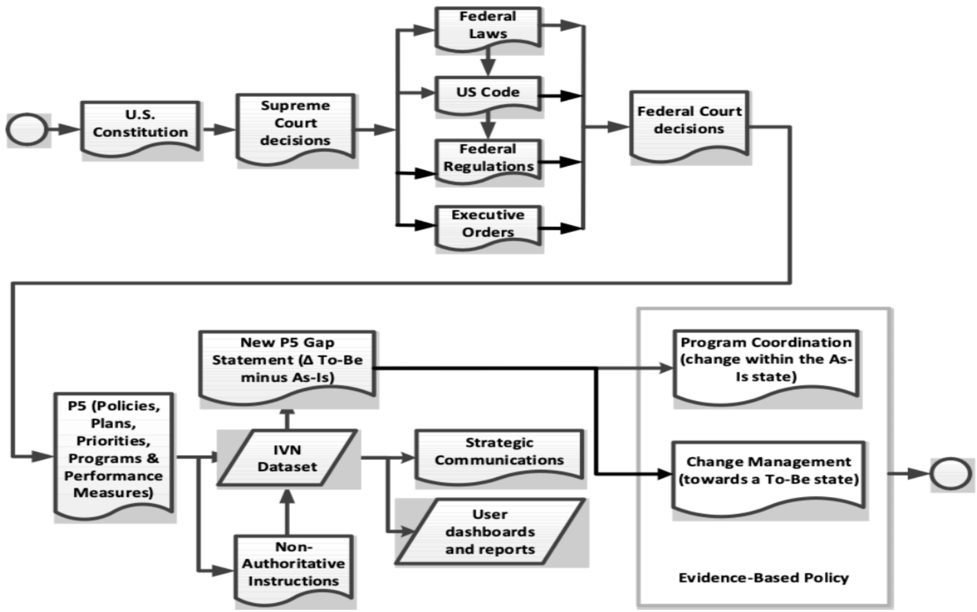

Figure 3: IVN inputs and outputs

By integrating the components of these governance documents into a network of value, G3i aims to provide the tools, knowledge, and framework necessary to optimize impact while remaining hyper-responsive to the needs of the citizens we serve. G3i functions as an "ecosystem" (Figure 4) of requirements managed and implemented as a coordinated effort.

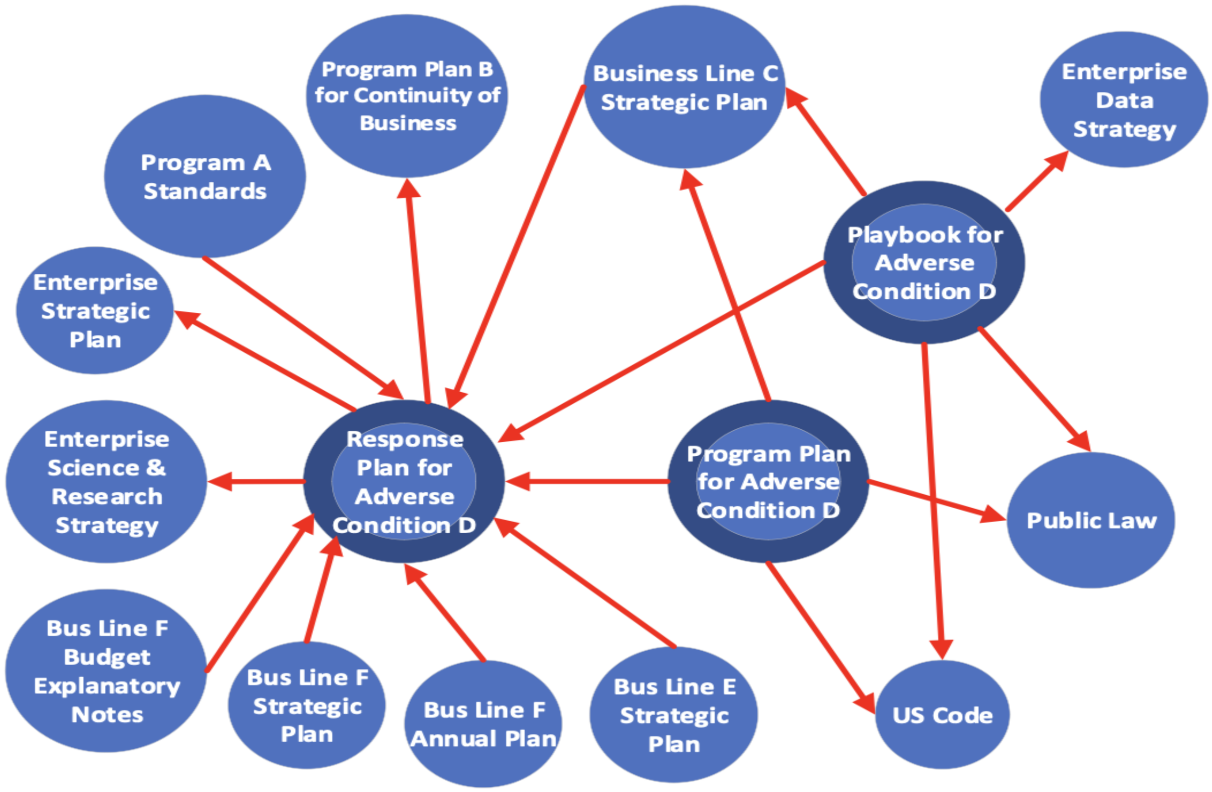

Figure 4: Example ecosystem for a new governance document

2.2 Populating the IVN

To maximize the information generated by the network, analysts separate, or aggregate requirements as written in the source document, so that each component of the requirement has atomicity, so that each requirement as recorded has enough scope that its delivery can be measured, but not enough scope to separate into two measurable deliverables. IVN analysts report that atomicity makes requirements easier to determine whether they align to other requirements.

3. Key Capabilities of the IVN

In providing this collaborative platform to help turn strategy into action and work to achieve improvements to portfolio and program outcomes, what considerations should be taken to improve the experience on such a platform?

It is intended that the IVN should be applied to populate and structure the platform, aligning and informing various internal and external stakeholders, and ensure coordinated governance across our portfolios of programs and projects.

The IVN should provide a number of key capabilities for addressing a number of challenges in delivering projects and programs.

How do we communicate program and project integration and alignment? Networks of requirements are both hierarchical and heterarchical (Figure 5), and the IVN can depict both types of these relationships in a single model, identifying elements of the system where we can improve the interdependencies and the value transacted across them. We can communicate the inputs and outputs of value for a single requirement, a governance document, or a portfolio of documents owned by a single stakeholder.

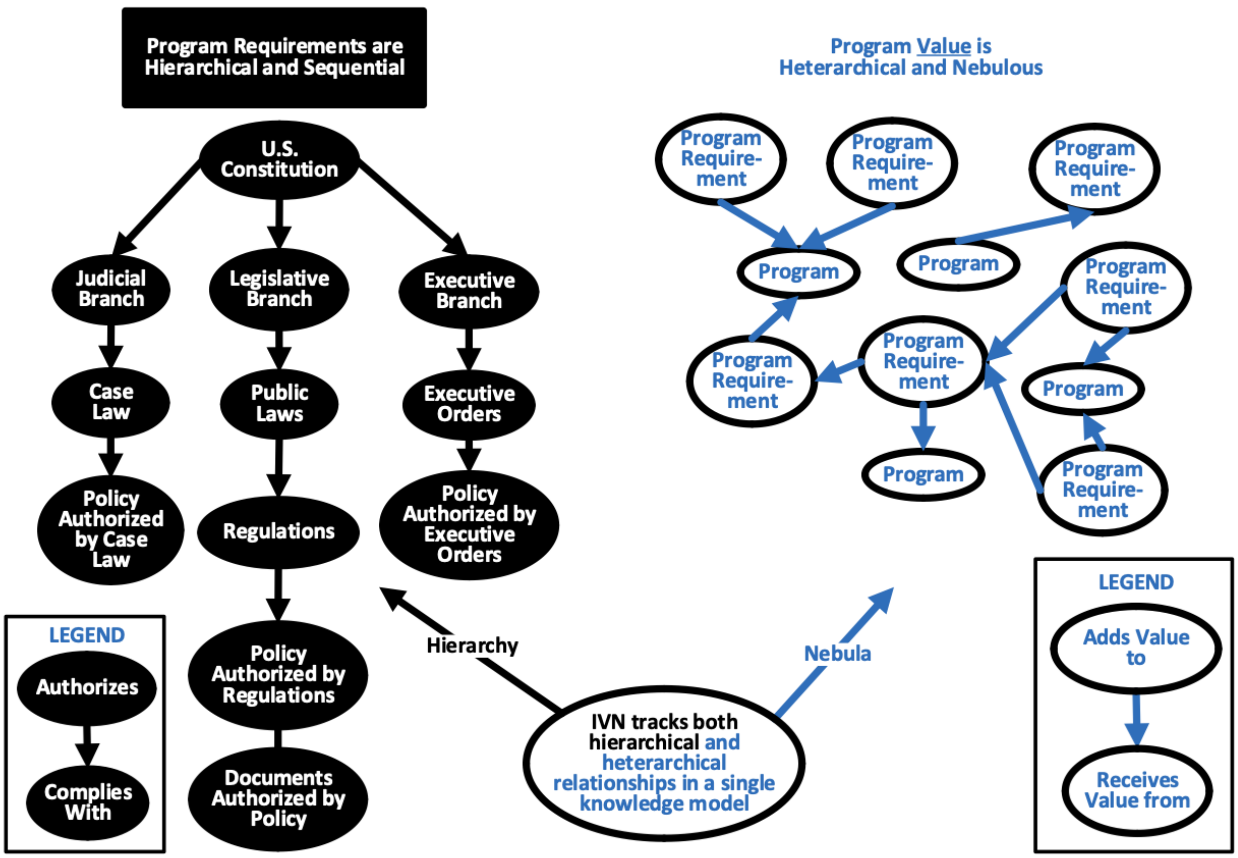

Figure 5: Program requirements versus program value

How do we collaborate on programs and projects based on their alignments? Groups of stakeholders that deliver value to the same requirement or governance document, such as an Executive Order or department priority, can use the IVN to graph the corresponding subnetwork of value, and adapt that subnetwork to improve how it delivers and transacts value.

How do we support and drive continuous improvement? One of our key premises is that we can improve the entire "system" (or network) by improving the connections or interactions between and among the components of the system. The IVN provides the mechanism for identifying and understanding those interactions between and among the system's components (Figure 6).

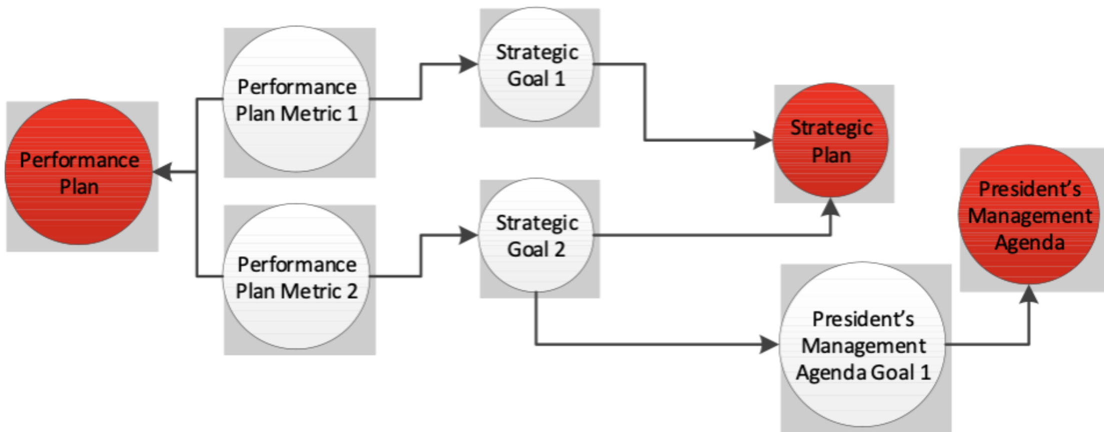

Figure 6: Logic model illustrating a value path

With that knowledge, we can reduce friction in the interactions, thereby improving how the entire system functions. Metrics are defined to indicate the efficiency and effectiveness of these improvements. This is a continuous improvement cycle, as we receive feedback from the system and the system's components. The feedback indicates where we are being successful and where more effort is required.

4. Next Steps

We suggest follow-up actions, including:

- Training volunteers using a standardized approach of modules that increase in complexity and application. Volunteers, from student interns to detailees and colleagues, have participated in the iterated training and self-assessment of progress. We have recruited virtual interns and in-person detailees using, among other resources, the U.S. Office of Personnel Open Opportunities portal for federal employees to learn and perform IVN analysis and reporting.
- Application of AI/machine learning involves training systems to perform analysis, quality control and discovery of new content. Several small-scale proofs of concept lead to promising performance.
- Best Practices for P/PM, strategic communications, implementation, and policy analysis/policymaking allows for the transformation of best practices from IVN

methods, products, and outcomes into more mature, capable P/PM tools and decision making.

- Integrating new types of governance to increase the size of the IVN dataset to create a more sophisticated basis of evidence for new policy, including budgets, strategies, staffing plans, reorganizations, and regulatory proposals.

5. References

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2. Growing Good in Government Initiative Uses Data-and-Evidence-Based Approach to Program Design and Performance - https://federalnewsnetwork.com/management/2024/02/growing-good-in-government-initiative-uses-data-and-evidence-based-approach-to-program-design-and-performance/, last accessed 2024/05/16