

Federal Register Notice 87 FR 15274, <https://www.federalregister.gov/documents/2022/03/17/2022-05683/request-for-information-on-federal-priorities-for-information-integrity-research-and-development>, May 15, 2022

## **Request for Information on Federal Priorities for Information Integrity Research and Development**

### **Growth Focused Insights and Research (GFI Research)**

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## NSF RFI

### RFI Response: Information Integrity R&D

#### 1 Cover

<b>NSF RFI Information Integrity</b>	
<b>Title of Proposal:</b>	Towards a better understanding of the information ecosystem
<b>Prime Offeror:</b> Growth Focused Insights and Research, LLC (GFI Research)	
<b>Contact:</b>	Researcher

#### 2 Executive Summary

The ability to accurately identify and understand the information ecosystem is critical to the effective performance of government. The recent focus on misinformation, disinformation and mal-information (MDM) in the public domain has brought these issues to the forefront. What makes a practical understanding of the information ecosystem even more critical is the performance of government messages and actions during large scale public events and is critical to maintaining citizen confidence, domestic tranquility and preventing violence.

Large scale public events such as elections, natural disasters, terrorist attacks, public health emergencies or civil unrest provide myriad opportunities for MDM information, regardless of source, to undermine citizen confidence and destabilizing civil society. These techniques can also be applied to more routine governmental functions such as visiting national parks, buying flood insurance, employment in the Armed Services, etc.

Our response adapts both theoretical and applied research from private industry to better understand the information ecosystem and thwart efforts, whether intentional or not, to undermine our Nation’s democratic, economic, geopolitical, public health and security systems.

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## 4 RFI Topic Areas

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Our response addresses five of the seven topic areas and can help the Information Integrity Research and Development Interagency Working Group (IIRD IWG) better understand the information ecosystem and protect our institutions that are critical to the effective functioning of our society. Specifically, our response addresses

1. *Understanding the information ecosystem,*
2. *Preserving information integrity and mitigating the effects of information manipulation,*
3. *Information awareness and education,*
4. *Barriers for research, and*
5. *Transition to practice.*

In the interest of brevity and clarity of our response, we will not address each of these specifically, but will reference sub-elements of each throughout our response.

## 5 Problem Statement

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The need to better understand the information ecosystem in order to address critical issues facing the country has never been more necessary. This understanding is even more vital in the age of social media, an explosion of traditional media and the rise of MDM information.

Large-scale public events are ripe for ‘fake news’, misinformation, bad information or malign forces to influence or dominate the public discourse, which can result in making the crisis worse or undermining trust in government. There is an opportunity for governments at all levels to provide resources to diminish the impacts of “**corrosive information.**” Longstaff and Yang (2008) studied natural disasters and health emergencies, e.g. tsunami’s and pandemic flu, finding that “trust” and “trusted information” were critical to a population’s ability to recover from a crisis. If the government or the official who is disseminating the information has the trust of the population, then ‘individuals, businesses and communities’ will be able to recover more quickly.

US Federal agencies may need to create effective campaigns and narratives to combat these tactics and misinformation (Kangas 2019; Werchan 2019). When confronted with these challenges, government agencies should have the appropriate tools in their toolkit to understand and address the event. We suggest that Federal and State governments, departments and agencies adapt techniques from the private business sector to better understand and respond to these situations.

## 6 Suggested Research Tools

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The core of our response is to create tools and methods to better understand how people in America understand, process and react to information in order to improve the detection, analysis, understanding, and mitigation of the threats posed by MDM information during large scale public events like natural disasters, public health crises, civil unrest, etc.

Specifically, we suggest that NSF fund multi-disciplinary research efforts that resemble the research process, tools and techniques used by the private sector.

The government can use these tools on a routine basis to understand the information ecosystem measure the impact of misinformation, disinformation and mal-information (MDM) on citizen confidence, offer insights into the best methods to counter the influence of ‘corrosive information,’ segment the population on key drivers, and test messages. The end result is to aid public officials’ ability to better address public problems and “mitigate information manipulation, assess how individuals and organizations are likely to respond, and build resiliency against information manipulation.”

The basic principles behind these tools, which we will call **CRISP**, are:

- **Core Insight-** What are core insights that explain the situation?
- **RTBs-** What are the ‘reasons to believe’ (RTBs) the government’s communications?
- **Information-** What critical information (or misinformation) is being used by the target of the message and how is it distributed?
- **Segments-** How does each key segment respond to the information, message or communication strategy?
- **Problem Solution-** Did the government’s approach (message) help solve the problem or make it worse?

The **CRISP** tools can be used across Federal Government agencies in an applied, practical manner to protect elections, respond to emergency situations, such as natural disasters, man-made events, public health crises, wild fires, climate change, etc. **CRISP** can

- be an early warning system of a shift in public confidence,
- detect the impact of ‘fake news’ and malign actor interference,
- react to quickly moving events in a timely manner,
- provide the ability to measure how information is being received by the public,
- identify the key segments that may be affected and RTBs, and
- provide the ability to quickly test messages to understand their impact.

A foundational research tool that we recommend is called **segmentation**. Segmentation is a standard technique that analytically identifies (typically) four to nine types (mindsets) of customers in systematic, meaningful ways to more effectively understand and message to them based on a specific context. The specific context can be a natural disaster, a pandemic (like COVID 19), a terrorist attack such as 9/11, climate change or foreign attempts to disrupt our elections. Nearly every major brand or company uses segmentation as a foundation to:

- Understand what their customers and potential customers want;
- Develop messages and communication strategies;
- Test messages, products and services;
- Measure success and track progress towards goals; and
- Conduct additional research by key segments.

The major assumption underlying segmentation is that psychographic (including behavioral and

attitudinal) characteristics are, when combined with demographics, much stronger predictors of consumer preference subsequently improving communication, product development, customer service, brand equity and customer satisfaction.

Marketing communication campaigns can influence human behavior; it is especially effective when following the segmentation, targeting and positioning process (Aaker 1991). These lessons from private industry can inform policy makers on how to measure, understand and create more effective messages by applying the process of marketing communications campaigns.

Government communication campaigns should be targeted and positioned correctly for each segment of the population and developed using the best practices of microeconomics, communication science and market research (Kotler & Keller 2005; Tynan & Drayton 1987). This technique is used by nearly every sector of private industry to effectively market products and services to their customers in order to influence desired outcomes (Lynn 2011.)

We recommend that an agency conduct a psychographic segmentation of the consumers and users of their information and potential targets of their messages. For instance, did the CDC or NIH have an understanding of the different types of mindsets in the U.S. when unveiling their campaigns concerning COVID? Did they test the ‘brand equity’ of their spokespeople and create messages accordingly? Or did they offer one primary message to everyone assuming that everyone processed information in the same manner?

Here are some questions that a segmentation could have answered regarding the Federal Government’s response and messaging surrounding COVID:

- What is the brand awareness and brand equity of the CDC? NIH? Dr. Fauci?
- What are the “mindsets” of different segments of the public and how do they evaluate proscriptive behavior from the Federal Government? Do these same individuals feel the same way towards State/Local leaders, different news organizations, doctors or other non-governmental leaders/organizations?
- Were messages tested with different segments before being released?
- Was a “Creative Brief” or a “Strategic Brief” used to create a communication strategy and messages?
- What are the reasons to believe (RTB) a specific message? Are the RTBs different or the same for key segments?
- What metrics were used to measure the effectiveness of each message? And were these success metrics determined before the message was released?

## 7 Example Segmentation Technical Approach and Outcomes

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There are many approaches that can be taken to create a segmentation of the population. Here we provide one method of conducting a psychographic segmentation that can be used as a basis for the **CRISP** tool.

Pre-Segmentation- Typically, one begins with a brief landscape assessment, including a literature review, stakeholder interviews and, if time and budget allows, an expert workshop. We also recommend analyzing existing data sets and social media to gain initial learning. The initial learning will include a prototype hypothetical segmentation.

Segmentation- The segmentation will help us identify the different subgroups in the population that share similar beliefs, attitudes, and behaviors. These segments will be used to provide insights to create a fact-based understanding of the information ecosystem, input into strategic briefs, a framework to test messages, provide a deeper understanding of how citizens consume information, provide a framework (typing tool and personas) for ongoing measurement by segment and uncover reasons to believe (RTB's).

These segments are usually created through a representative statistically valid and reliable large-scale survey and use many or most of the statistical methods commonly used to segment populations. These include k-means, tree-based methods (hierarchical clustering, CHAID/CRT, random forests), neural networks, and others.

Segmentation frameworks and personas are generally useful for 5-15 years and will only need to be revalidated and the size of each segment adjusted slightly, unless there is a major event or shock to the system (e.g. Sept 11<sup>th</sup>, major economic upheaval, pandemic, etc.).

The segmentation will occur in seven steps. Step **one** will be a segmentation kick-off workshop to orient stakeholders and the work team to the process and align on the timeline. It should include stakeholders, clients and other firms/consultants that create messaging for the client. Step **two** will be to conduct qualitative research to better understand consumer centric language and to create a more complete and robust segmentation survey questionnaire. The **third** step is a primary large-scale survey, (n=2,400-3,300 and 15-25 minutes in length) that is representative of the population of interest. This survey will include between 50-100 psychographic statements, relevant context questions, media usage and other attitudinal/behavioral questions that are relevant to the topic area. This survey will provide a rich data set to be used to create a shorter typing tool, the core of the tracker survey, and to understand the sources of information/misinformation and mindset of consumers.

The **fourth** step will be a segmentation selection workshop consisting of key stakeholders. This workshop should include 8-12 participants and the goal is to align on the 'best' segmentation scheme that best balances the data, context, and application of future uses for the segments. The **fifth** step is research that brings segments to life and provides more color and context for each. The **sixth** step is an activation workshop with the same participants from the kick-off workshop, which should be approximately 20-30 stakeholders, clients and support firms/consultants. There will be several deliverables, as well as a typing tool (a short set of survey questions that can be used to create these segments in future research), a final report and a set of easy to use data files.

Typing Tool- The effective rollout and continued use of segmentation schema requires an effective "typing" or classification tool so that anyone can be classified into one of the segments without requiring them to respond to the entire battery of questions initially used to create the segments. This can at times be difficult to do effectively after the fact, a problem that worsens over time. Because of this, a suggested approach is to create the segmentation and its typing tool at the same time. In fact the effectiveness of the typing tool is one criterion used in the workshop to choose the final segmentation scheme.

Tracker- We also recommend fielding a periodic tracker (monthly, quarterly or annually) that identifies key performance indicators (KPIs) that will be used to track performance and an Early

Warning System. The typing tool is used to identify each segment in order to track the KPIs by segment. In short, the segments will become the ‘data cuts’ to analyze KPIs. The tracker is typically a survey using the same sampling methodology and frame as the segmentation.

#### Expected Outcomes:

- 1) An understanding of the sources of information and how ‘false’ information is spread across the population. This includes social media and non-traditional sources of information.
- 2) Develop insights to develop the strategic brief that can be used to create the messages.
- 3) A typology (segments) of consumers and how they react to government and non-government messages.
- 4) A robust set of data and insights that can be used in the creative or strategic brief as guidance for creating messages or campaigns.
- 5) A framework, research design, survey/moderator guide, algorithm and data base tool to quickly and accurately test messages.
- 6) A set of key performance indicators (KPIs) to measure consumer confidence and effectiveness of messages over time, specifically we will have key measures of trust in government and in sources of information by key segments.
- 7) A routine tracker that measures Key Performance Indicators (KPIs) and provides an Early Warning System. This tracker can provide measures of effectiveness and help provide guidance as to impending threats and failures of existing programs.

## **8 Operational Considerations**

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There are many different research techniques that can be used to conduct a segmentation and for the underlying resources to apply **CRISP**. We suggest that sponsoring organizations provide more direction in terms of the problem statement and expected outcomes, rather than specifics of the data collection techniques to be used.

The narrative used for the RFI is a good example of providing a statement of the problem and the solution(s) sought, without proscribing the data collection or analytical techniques to be used. This approach allows both a Program Director and a Research Vendor sufficient flexibility to respond to changing circumstances, government needs and learning based on more knowledge of the specific context.

## **9 Applications**

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The majority of our response dealt with applying these techniques to public events, usually in the context of a crises or potential to cause large scale damage. However, the **CRISP** tool and segmentation can be applied to nearly all situations, contexts, and government agencies that have a need to understand the information awareness of the public, create messages for the public or conduct education to inform the public. For instance, **CRISP**, and particularly a segmentation, can be used to create communication strategies and messages about more routine activities such as filing taxes, applying for social security, accessing VA benefits, or employment with the Federal Government.



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