

Implementing the Federal Advisory Committee Act

Laura Odell, Katharine Burton, and Miranda Seitz-McLeese

The Challenge: DoD officials needed to assess rapidly options for improving and streamlining DoD implementation of the Federal Advisory Committee Act while remaining compliant with federal policy and regulations.

DoD was particularly interested in identifying the differences between DoD-originated requirements in its FACA processes and policy and regulatory requirements from external agencies.

Background

The office of the DoD Chief Information Officer (CIO) Business Process and Systems Review (BPSR) requested IDA's assistance in answering two questions concerning DoD regulatory requirements for Federal Advisory Committees.

The first question involved assessing how proposed legislative changes to the Federal Advisory Committee Act (FACA) would affect DoD. FACA defines how federal advisory committees operate and requires open meetings, chartering, public engagement, and reporting (P.L. 92-463. Federal Advisory Committee Act (FACA) 1972). DoD was particularly interested in identifying the differences between DoD-originated provisions in its FACA processes and policy and regulatory requirements from external agencies.

The second question concerned analyzing stakeholder feedback on the Federal Advisory Committee management process. DoD asked IDA to identify common themes in the feedback and determine whether DoD was able to control or influence potential solutions.

The following discussion focuses on the analysis performed for the first question. Figure 1 illustrates the FACA policy hierarchy relevant to this task.

Methodology

For this project, IDA supplemented the IDATA existing document repository with documents from the Office of Government Ethics. We conducted a phased analysis of the information and began by identifying, collecting, and organizing the information that concerned the FACA. The IDATA capability facilitated information collection and analysis by identifying relevant documents and conducting a breakdown comparison of pertinent sections of the documents under investigation.

The search and discovery phase of IDA's information triage process began with a simple key word search to identify

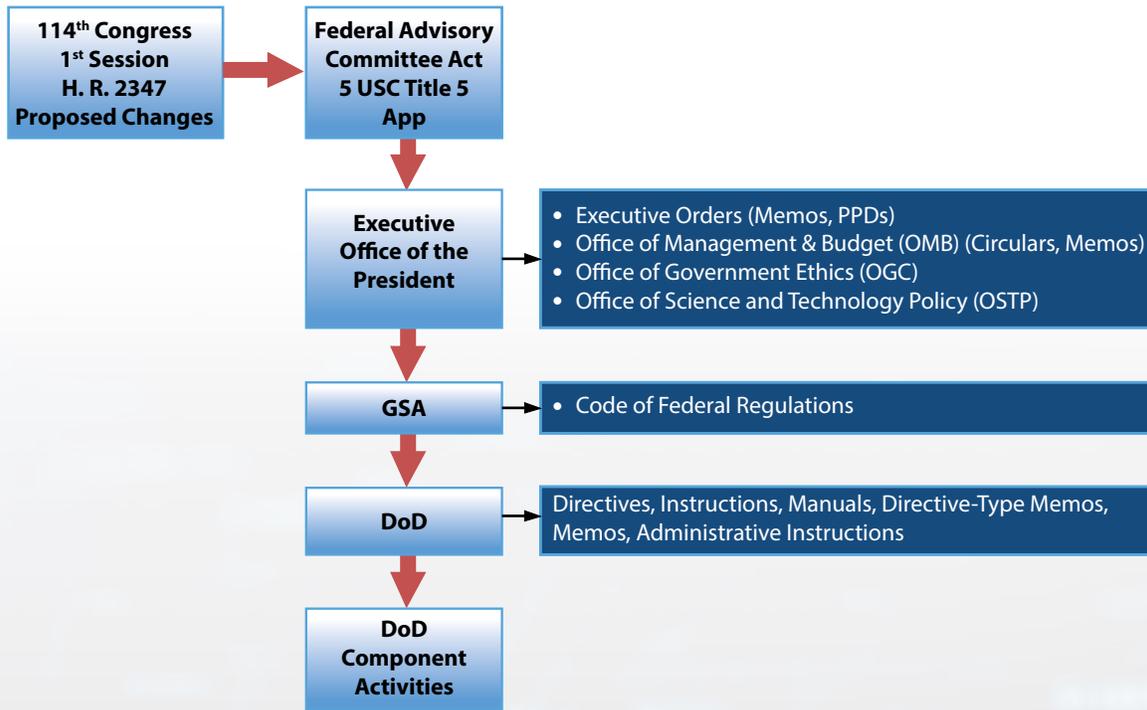


Figure 1. FACA Policy Hierarchy

regulatory and statutory documents from DoD, the General Services Administration (GSA), the Executive Office of the President, and Congress. The IDATA capability grouped these documents according to similarities in content and language. This allowed us to identify not only well-known DoD and federal policy and guidelines but also policy from smaller organizations that affected DoD's FACA policy. Of 500,000 publicly available documents associated with all federal and DoD policy, the IDATA capability identified one relevant DoD issuance and eight additional legislative and federal policy documents that affected DoD.

We converted the documents to XML to impose a hierarchical structure

that allowed the documents to be segmented into relevant sections. We then inserted these sections into a machine-learning pipeline of processes and algorithms developed using the open-source library scikit-learn. IDATA removed conjunctions, articles, and pronouns ("if," "and," "the," and "it"), split the sections into words, and created word bigrams for each section, which were indexed using the term frequency-inverse document frequency (TF-IDF)¹ metric expressed in this equation.:

$$(1 + \log(\# \text{ appearances in document})) \times \log\left(\frac{\text{total \# documents}}{\# \text{ containing the term}}\right)$$

¹ TF-IDF weights a given term to determine how well the term describes an individual document within a corpus of documents. It does so by both weighting the term positively for the number of times it occurs within a specific document and weighting the term negatively relative to the number of documents that contain it (tfidf.com, <http://www.tfidf.com/>. Accessed September 26, 2017).

This process compared the sections and bigrams from the DoD issuance with the sections and bigrams from the other legislative and federal policy documents. The process yielded a matrix of TF-IDF values for each section-bigram combination. The researchers then used Latent Semantic Analysis (LSA)² to reduce the TF-IDF matrix to a smaller version containing all of the relevant sections but only the columns that captured the most variance between sections.

We used the smaller matrix to identify the most likely source for each section of the DoD issuance and tagged the sections to note the part of the issuance they came from. The analysis focused on the sections of the issuance that actively placed requirements on DoD. The researchers then used a threshold variance of 1.07 to determine whether a difference was present between sections.

Our analysis answered four questions:

1. *What is the source of DoD issuance requirements?* Using the matrix that resulted from the LSA, we identified the most likely source for each section of the DoD issuance.
2. *What is the crosswalk from statute to DoD issuance?* For completeness, the DoD issuance was compared with all of the documents to determine how requirements flow from Congress to DoD. We applied an

agglomerative centering method to the matrix from the LSA to trace the requirements from the DoD issuance across the FACA policy landscape. The algorithm begins with the issuance and works its way outward, from more general documents to more specific documents.

3. *What is the potential impact of proposed legislation on the current statute?* We aligned sections of proposed legislation with the current legislation to reveal not only changes in language but also the locations of the language in the original and proposed statutes.
4. *What DoD issuances mention FACA and may be affected by any changes to the instruction?* We used the search capability in the IDATA document repository to identify all DoD issuances that cited FACA.

Similarities between sections suggest requirements imposed on DoD by legislation or other federal policy; differences between sections suggest DoD-imposed requirements. We found that the differences were primarily in the procedures sections of the documents.

Results and Impact

The algorithm ranked the sections according to three criteria: (1) the raw number of sections that registered as “significantly different”

² LSA is a method for determining the similarity in the meaning of words and phrases by analyzing a large corpus of text and producing a set of related concepts and terms. LSA is known to combat the effects of synonymy (a state in which a word is a synonym for other words) and polysemy (that a word or phrase may have more than one meaning).

from text in other guiding documents, (2) the percentage of sections that registered as “significantly different,” and (3) the extremity of the difference. Based on these criteria, we were able to interpret the results, identify the eight documents that contained binding guidance from other agencies, and compare those documents with DoD’s procedures. The numerical results also helped us find the sections of the DoD issuance that were most likely self-imposed requirements. Figure 2 shows a sample of the results. In the figure, “Issuance Text” refers to the DoD document and “Authority Text” refers to the other legislative and federal policy documents. “CFR” in the figure is the Code of Federal Regulations.

IDA’s work resulted in a change to DoD policy regarding FACA and associated procedures for vetting and appointing members to DoD’s advisory committees. The researchers performed this analysis in less than a week; without the IDATA capability, it would have taken significantly more time (months, at least) to manually collect relevant documents and identify sections in those documents that were pertinent to the questions posed. The IDATA capability enabled a timely, comprehensive, and unbiased analysis that afforded DoD the time needed to evaluate opportunities to improve and streamline its FACA processes while remaining compliant with federal policy and regulations.

Issuance Text	Similarity	Authority Text	Source
Committee and Subcommittee Meetings E3.12.2. Open-Meeting Requirements. All Committees shall ensure that their open meetings are held at a reasonable time and in a manner or place reasonably accessible to the public. Unless the Department of Defense has authorized the Committee to close the meeting under the provisions of section 552b(c) of Reference (i). Interested persons or groups, to the extent possible shall be permitted to attend the Committee’s meeting.	Low	Subpart D--Advisory Committee Meeting and Recordkeeping Procedures What policies apply to advisory committee meetings? The agency head, or the chairperson of an independent Presidential advisory committee, must ensure that: (a) Each advisory committee meeting is held at a reasonable time and in a manner or place reasonably accessible to the public, to include facilities that are readily accessible to and usable by persons with disabilities, consistent with the goals of section 504 of the Rehabilitation Act of 1973, as amended. 29 U.S.C. 794.	CFR
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Figure 2. Sample Output of FACA Analysis

Reference

Federal Advisory Committee Act (FACA), Pub. L. 92-463, 86 Stat. 770. October 6, 1972. tfidf.com. <http://www.tfidf.com/>. Accessed September 26, 2017.