The *U.S. vs. Fiber Materials, Inc.*: A Case Study In Knowledge Failure

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Abstract. Through close examination of the *U.S. vs. Fiber Materials, Inc.*, this paper examines the documentation responsible for the overturning of a guilty verdict in one of the most highly acclaimed export control enforcement cases of the last decade. The jury's verdict in the case was derived from the organizational memory of the regulating agency. Ultimately, historical records were unearthed which proved the agency's memory to be egregiously inaccurate, and the defendants, after nearly twenty million dollars in legal fees and eight years in legal limbo, were subsequently acquitted of all charges. This case study highlights the disconnect between traditional record keeping practices and digital information systems. It identifies a knowledge-to-task gap in the policy area of export controls. It suggests a need for further refinement of the contextual qualities and attributes necessary for policy knowledge and reuse.

1 Knowledge Continuum

Multilateral implementation of policy is an exercise in coordination and collaboration. It is an information rich endeavor, requiring reciprocal information sharing between countries, government agencies, and individuals. Recent scholarship has suggested that one cause for poor policy coordination is due to poor information sharing.[1] In addition, emerging research in public administration suggests that interorganizational coordination and collaboration of public agencies requires a common knowledge base which must reside within a "sociotechnical system."[2] Information and knowledge are not mutually exclusive categories however. The specific environment in which workers produce information imposes meaning on information, thus increasing its knowledge value. Information has a trajectory, which is derived from the manner in which it is used and the specific context within which it is generated. This information-to-task alignment is imperative for knowledgable decision-making. On the continuum to knowledge, information moves further along as more and more situational context is impressed upon it.

But what salient attributes or qualities of a given context facilitate the metamorphosis of information into knowledge? What attributes are necessary in the context of multilateral policy efforts? Might these attributes change over time or remain static? These questions add insight into the development of robust knowledge systems, knowledge systems that may facilitate future policy efforts.

2 Knowledge Context

The court case *U.S. vs, Fiber Materials, Inc.* centered on the interpretation of two words, two words that appeared in hundreds of government regulations,"specially designed." The term was intended to mark the strategic threshold of many items in government regulations, dividing those items that required government licensing from those that did not. Unbeknownst to FMI executives or government officials, the terms had been defined some thirty years prior to FMI's export. The definition had been published in a government manual by the very government agency that brought the charges against FMI.

In 1987 FMI sold three pieces of equipment to the Indian government. The company later learned that the Defense Research and Development Laboratory in Hyderabad, connected a control panel from one piece of equipment to a larger, more strategic piece. And that, according to U.S. Government officials, is when FMI, its executives, and its subsidiary corporation Materials International, violated U.S. export laws. The U.S. Government's concern stemmed from the dual-use nature of the equipment. Carbon reinforced composite materials are exotic materials which may be used in the manufacture of commercial items, such as aircraft brake pads. Alternatively, carbon-carbon is used for making nosetips for strategic, ballistic missiles – those capable of carrying nuclear weapons. FMI was a preeminent supplier of this material, and the company had supplied all three missile-equipped branches of the U.S. military with product: Army, Navy, and Air Force.

3 The Method of Memory

The Judge presiding over the FMI case determined that the definition of "specially designed" was to derive from the testimony of government officials under whose regulatory jurisdiction the exports fell. According to a U.S. Department of Commerce export-licensing officer, the export violated U.S. export laws, because the control panel was "specially designed" to work with a highly sensitive, strategic piece of equipment. One National Security Council member and former Commerce Department employee testified in the FMI trial that, "India now has the ability to extend the geographic range for delivering a nuclear weapon, extending its delivery range beyond Pakistan and into China. India has moved from the short range of its Agni missile to an intermediate range missile – the Pithvi. India has that capability today because of FMI and its illegal export."

The official maintained that "specially designed" had been defined in the international regime in which export controls were negotiated: NATO's Coordinating Committee on Multilateral Export Controls. "Specially Designed," multiple witnesses testified, had always been understood to mean "capable of." He had "familiarized" himself with these administrative rules by word of mouth only. He stated that when questions arose, spoking with other engineers and inquiring as to what predecessors had done was the primary vector for communicating this regulatory knowledge, "so there would be a certain consistency to our judgment".[3]

Though subsequent arms control regimes adopted use of the term and defined it, the use of the term within CoCom prevailed in determining its meaning in the FMI case. The item was restricted for its dual-use nature and therefore CoCom precedent prevailed. The Missile Technology Control Regime, for example, defined the term to mean "exclusive use." This fact was irrelevant. Consistent interpretation and usage of the term given the history of usage in CoCom prevailed.

A second witness had led the Capital Goods Technology Center in Commerce, an office devoted to the analysis of export licenses of capital goods equipment such as machine tools. Whether an item was "specially designed" was subject to the interpretation of the licensing official. The leader of Capital Goods testified that "the 'capable of' interpretation was used consistently within the Department of Commerce"[3]. Both witnesses testified that they had grown familiar with the term relative to the licensing of control panels for other pieces of capital goods equipment. Both officials maintained intimate familiarity with regulations of Capital Goods items such as those covered under regulations ECCN 1091 and ECCN 1312, the latter the regulation at issue in the case. Though not written down, he explained that "the meaning of specially designed was in my head and the heads of others."[3] With only the evidence of human memory, the jury returned with a guilty verdict in June 1995.

4 Organizational Structure And Memory

At the time of the FMI export, The US Department of Commerce was a decentralized body consisting of several offices, technology sections, and divisions. The Bureau of Export Administration–the office responsible for licensing dual-use exports–was divided into several smaller divisions. Each was further sub-dived to cover specific areas of technology: computer equipment, metalworking machinery, chemical, biological, nuclear, and missile technology, each with specific offices devoted to licensing operations.

Multiple organizations were involved in the classification process of strategic and benign commodities. Many of these organizations produced many documents and manuals that circulated throughout the U.S. government and nonproliferation community. Pervasive throughout these documents were the terms "specially designed." Despite the widespread presence of the term, its meaning existed solely in the memory of policy officials.

5 The Form Of Policy Memory: Records & The History Of Specially

Government records provide one mechanism through which one can gain access to the history and administrative structure behind policy knowledge. Public records such as regulations, manuals, forms, congressional hearings, oversight reports, legislation, acts, and amendments, as well as declassified government

documents were all crucial in ascertaining the administrative history of the interpretation of "specially designed." These records depict a pattern of interpretation and usage that extended throughout the U.S. government, through NATO's CoCom, and across the globe.

Lawyers emphasized the right to a fair trial under the due process clause of the 14th Amendment of the U.S. Constitution, under which the criminal charges were unconstitutional. The defendants could not be charged with violating a regulation the government itself could not define.

The prosecution countered that the language of the regulation and the use of "specially designed" was quite regular. Over the fifty years of its use; however, the numbering system of the regulations, as well as the facetted technology categories to which these numbering systems were paired, changed considerably. The export control commodity number, the alphanumeric number used to identify specific, individual regulations, underwent a series of changes over the five decades. Those changes reflected shifts in bureaucratic structure and changes in decision making authority among, across, and between government agencies and international organizations.

Prior to 1965, the United States relied on the classification and indexing scheme produced within the Census Bureau for identifying and statistically collocating exports into group. In 1965, the United States switched to the classification and indexing scheme used within NATO's CoCom in order to standardize internationally the categories, documentation, and description of export regulations. This change in authority, administrative function, and of documentation had inter/intra national ramifications on export enforcement. Enforcement personnel, government agencies, nor exporters had any way of ascertaining the meanings between these terms when the switch between indexing and classification systems was made. No public concordance was ever published, nor is there any evidence to suggest that one was used within government. The intellectual linkage and continuity underpinning the area of export controls been severed, and, along with it, so too was the meaning of "specially designed."

Without analyzing the indexing and classification schemes within the export regulations themselves, it would be impossible to ascertain the differences between the regulations over time, such as the pre-1965-post switch in terms, as well as any semantic differences between regulatory language. This switch is critically important. Time series analysis of the content of export regulations chronologically revealed that "specially designed" appeared more frequently after 1965. Prior to that time, the term "specially fabricated" was used. A review of the various Schedule B classification manuals revealed that "specially fabricated" was defined in a 1952 Schedule B Manual. The definition of which differed dramatically from that of "specially designed" offered via the testimony of government witnesses in the FMI trial.

The domestic indexing scheme of Schedule B, when compared to the international scheme of CoCom, constituted only a linguistic difference. No clear evidence suggested a semantic difference between the two terms. Put simply, did "specially fabricated" mean the same thing as "specially designed?" Multi-

ple documents proved critical for determining the semantic similarities between these two terms. Many depicted a pattern of synonymous use of the two words in the capital goods item of vacuum pumps.

For example, The strategic characteristics of vacuum pumps were discussed as early as 1958 in CoCom.[4] Negotiations on the definition of vacuum pumps were widely circulated internationally and within several agencies of the U.S. Government including, Departments of State, Commerce, and Defense.[5] "Specially fabricated" was included in the definition of these items in 1959.[6] A recommendation was added that the term be added to CoCom's International or "Dual Use" list that same year.[7] The term was purposefully used to delineate the strategic threshold of an item. Moreover, documents went so far as to state that "special machines" were those only applied to the use for which they were designed.[8]

CoCom's documents were corroborated via numerous records obtained from several U.S. Presidential Libraries. A report from Secretary Luther Hodges papers from the Bureau of International Commerce, U.S. Department of Commerce dated July 30, 1963 examined special aspects of export controls for technical data, prototypes, components, parts, and materials. The report defined "specially designed" to mean any item that was intentionally designed to meet or achieve the desired outcome of the export. More importantly the report discussed the general policy shift from quantitative control of manufactured goods or those "fabricated" to control of intellectual design know-how inherent in the "design" of items.

Of all of the records associated with the trial, the Department of Commerce's own administrative records were the most damaging to the prosecution. A 1952 report from the U.S. Department of Commerce's Operations Division explained how licensing officers should interpret export regulations, particularly when dealing with parts and components for machinery.[9] "Specially fabricated" the report argued was to be interpreted to mean "exclusive use." "Specially fabricated" and "specially designed," the report stated were to have identical meanings.

6 Knowledge Failure

Multiple documents vigorously impeached the testimony of the prosecution's witnesses, proving no semantic difference between "specially fabricated" and "specially designed." On August 14, 2003, the Judge granted a longstanding Motion to Dismiss. The court's guilty verdict was overturned. Eight years after the guilty verdict in the case and after millions of dollars in legal fees Fiber Materials, Inc. and its executives were acquitted of all charges.

7 Knowledge Attributes

Government records were at the heart if this case study, and at the center of a pathological deficiency in knowledge building and retrieval. Despite lengthy

discussions of organizational memory and knowledge management in the research literature, little exists to describe the attributes of contextual knowledge. Moreover, the problem of semantic differences and its effects on regulatory interpretation is rampant with the domain of export controls, arms control, and nonproliferation more generally.

Form

Public organizations reside and operate within policy domains. These domains may cross national, jurisdictional, semantic, and organizational boundaries. What is important in the preservation of this contextual knowledge is a heightened awareness to the wide array of information inputs and the multiple forms they might take. Considerations of information form will enable more thorough consideration of a wider collection of information inputs come time for decision making, systems development, and resource sharing.

Evidence

Access to information is said to open government and hold public officials accountable. Government rule by law should limit that of men. Evidence of government action not only provides an accountability mechanism, but also allows for decision-makers to ascertain an order to decisions within and across organizations. Records are valuable evidence. However, evidence derives its value from its authenticity or provenance. Preserving the original order of records and the diligence of the record keeper will fortify this evidential quality.

Taxonomy

Record keeping systems and the languages and manner in which they describe objects provide interorganizational links within policy domains. Common terms or "controlled vocabularies" enable access to common areas shared between and across organizations. These taxonomies structure knowledge for future use and reuse.

Versatility

Information must be versatile. Systems must enable users to go beyond the limits of the information's original form. The records of the FMI case formed a noncomputerized database. Government decision-makers were limited in their ability to pull knowledge from the information due to technical limitations of the form of policy knowledge.

Endurance

Systems must maintain knowledge structures of time. Simply providing access to knowledge is not enough. These structures must endure organizational, jurisdictional, and functional changes. The FMI case depicts continuous changes in function across organizations. What provided access to this knowledge was the endurance of the knowledge in records.

8 In Sum

Records professionals, librarians, and information professionals have long wrestled with the attributes of information that facilitate the development of knowledge. However, the division of professions frequently separates and divides the

principles necessary for the generation of knowledge systems in public policy. Information sharing is critical for coordination and collaboration. Both are key aspects of the effective enactment and enforcement of international agreements. When placed in the broader context of the policy area of arms control and nonproliferation, the degree of effort needed to join these disparate principles within the information professions for the generation of knowledge systems are minuscule when compared to the price of information failures in export controls.

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