ABSTRACT
Given that the rise of the Internet has greatly intensified information management problems in contemporary society, the historical perspective, or looking at the roots, is viewed by many as an indispensable component of the quest for practical solutions to information overload. This historical comparative study intends to narrow the gap in the existing knowledge about the impact of the Soviet military-industrial complex on the rise of the scientific and technical information management system in the mid-20th century United States, particularly in such agencies as the National Science Foundation (NSF) and the National Technical Information Service (NTIS). Along with a chronological analysis of primary and secondary documents, data are being collected via a series of interviews with prominent experts in the field whose research has revolved around both VINITI and the formative years of the U.S. scientific and technical information domain. Conclusions regarding the NSF and NTIS reactions to the Soviet developments are being made based on such indicators as organizational changes, budget allocations, and manpower changes.

Keywords
VINITI, NSF, NTIS, scientific and technical information management, Cold War, information explosion, information overload.

INTRODUCTION
It was over fifteen years ago that author David Shenk (1997) rightfully pinpointed one significant feature of the evolving information landscape: data smog, or the astounding wealth of information that, due to its sheer volume and alarming growth rate, can be both beneficial and harmful. It is only fitting that attempts to manage, if not combat, the seemingly imminent information crisis have brought about a renewed interest in the origins of the phenomenon of information explosion that dates back to the early decades of the 20th century. One can argue that the rapid expansion of scientific and technical advances across the world and the subsequent spread of modern technologies was the root cause of the unprecedented growth of the overall amount of data, particularly scientific and technical information. In the United States and the Soviet Union, the two leaders in the playing field, the growth of information output accelerated by the late 1930s and became truly explosive in the aftermath of the Second World War.

In the post-War United States, a number of scientists and information professionals in many fields attempted to develop their own strategies of keeping the information overload in check. Such increased attention resulted in the steady government support of research and initiatives related to information problems and solutions. Eastern Europe saw an almost parallel development as the Soviet Union had emerged by the 1950s as a powerful military and economic force that sought to establish its superiority over the U.S. in a number of areas, including management of its vast amount of information resources. The Soviets succeeded in the latter, particularly after VINITI (All-Union Scientific and Technical Information Institute of the Academy of Sciences of the USSR) came into existence in the early 1950s.

VINITY AND THE SOVIET INFORMATION HEGEMONY
It can be argued that as the leading information agency of the Soviet Union VINITI played a major role in, and gave impetus to, the evolution of information science. Founded in 1952, VINITI quickly developed and implemented a
ramified system of collecting and establishing bibliographic control of scientific and technical information from within the country and around the world. Soon after its establishment, VINITI turned into an impactful research center in the field of scientific information theory and practice, scientific communication, and information retrieval. The Institute owed much of its success to a great cadre of specialists it sought to bring in from the outside and develop from within.

As Foskett (1990) observes, in the post-War Soviet Union great attention was paid to formal professional training of information scientists and specialists. Additionally, VINITI established itself as the flagship institution charged with organizing a training program for industrial information officers and documentalists from developing countries of Asia, Africa, and Latin America. At the height of its power, the enormity of VINITI’s collection was truly unmatched, as the Institute amassed information records covering some 130 countries in sixty-six different languages.

In fact, the problems of international cooperation in the areas related to the spread of scientific and technical information formed a significant part of VINITI’s early agenda. Already at that time Alexander Mikhailov, VINITI director for thirty-two years, was actively considering the idea of a world-wide scientific and technical information system. Therefore, he promoted the Institute as a means of exchanging ideas and experiences among scientists of different countries to push forward informatics as a legitimate science. The premise behind VINITI’s rapid growth was the nationwide realization that only a centralized system of cataloging and analyzing journal literature could be effective in dealing with the volume and complexity of Soviet technical data (Pospelov & Pospelov, 1990).

INSTITUTIONAL RESPONSE FROM THE WEST
All these developments could not have gone unnoticed across the Atlantic. In the United States, too, there was a pronounced need to collect and declassify war technical reports or other publications and to capitalize on that information to enhance the commercial and scientific capabilities of the country. Ideologically, the U.S. saw the Soviets as a menacing force and a rival whose continued rise to power did not bode well for the capitalist world. The war effort prompted the production of files located in agencies and organizations all around the country.

According to Caponio, Bracken, and Feinstein (1990), in the years immediately following the war, it became necessary to develop a systematic framework of handling the annual accumulation of tens of thousands of scientific and technical reports in an organized, efficient manner. This necessity caused substantial modernizations within the already existing Office of the Publication Board (OPB), an agency created by President Harry Truman during World War II to collect, review and distribute previously classified technical information. The OPB reform was completed in September 1970 when an act of Congress established the National Technical Information Service (NTIS) (National Technical Information Service, 1985).

While the direct influence of VINITI on the evolution of the OPB into NTIS has not been formally determined, the two agencies followed similar paths in their development. Besides broader conceptual similarities, the two information management superpowers, VINITI on the Soviet side and OPB/NTIS on the American side, also had alike visions of key practical tasks to be performed related to the automation of information analysis and delivery—a fundamental mission for national level STI facilities (Caponio, Bracken, & Feinstein, 1990).

The example of OPB/NTIS speaks to the growing U.S. interest in the Soviet scientific and technical information. A more complete perspective of the U.S. reaction to the development of scientific and technical information in the 1950s-1970s Soviet Union could be gained from examining the work of the National Science Foundation (NSF) during the same time period. When the NSF was created in 1950, support for major areas of research had already become dominated by a number of designated agencies. That pattern would continue after 1957 when the U.S. anxiety over the launch of Sputnik led to the creation of the National Aeronautics and Space Administration and the Defense Advanced Research Projects Agency. However, the NSF still found its niche as its scope and funding rapidly expanded over the late 1950s-1960s to encompass many areas that were not in its initial purview, including the social and behavioral sciences, engineering, and science and mathematics education (National Science Foundation, n.d.).

KNOWLEDGE GAP
In the framework of the Cold War, VINITI was repeatedly brought up in the Western world as a challenge needing a response, although much of its operations remained hidden behind the “Iron Curtain.” Therefore, little is known about the influence of the Soviet experience on the development of American scientific and technical information. There is also a lack of systematic knowledge regarding the reactions of the U.S. side to the Soviet scientific and technical information.

METHODS
This research aims to close the bi-directional gap in the understanding of the issues surrounding the burgeoning “race for information superiority” between the U.S. and the Soviet Union. To accomplish this goal, a comparative historical study is being conducted that involves a chronological analysis of historical documents coupled with a series of face-to-face interviews with prominent scholars in the information science field whose research has revolved around both VINITI and the formative years of the U.S. scientific and technical information domain.
Apart from the interviews, which provide invaluable sources of primary information, document analysis of primary and secondary sources, including Russian language publications, is also being carried out to obtain data on the formation, growth, and the significance of VINITI in general as well as to investigate the reaction of the NSF and NTIS to VINITI operations. In particular, the following data sources are being examined: NSF/NTIS annual reports from 1950s-1970s, NSF authorization papers, and NSF appropriation documents. Specific indicators of the U.S. reaction to the Soviet scientific and technical information evolution are being analyzed, such as organizational changes, budget items changes for certain areas of science, manpower changes, and changes in NSF/NTIS public statements. The data analysis plan entails tracking the changes over time and comparing and contrasting information from various sources through coding and data categorization.

CONCLUSION AND IMPLICATIONS

This research intends to bridge the gap between what is already known and what is still unknown about the type of society we now live in, the information society. It is the new reality where the creation, distribution, integration, and manipulation of information is a significant economic, political, and cultural activity. This type of comparative research has seldom been undertaken before, and the purpose is to take yet another look at the past, at the time when the Soviet Union and the United States—two superpowers holding diametrically opposed views on how to organize human society at both the state and the international level—fought to establish their hegemony in the information realm as a means of advancing their political and social agendas.

It is unquestionably important to retrospectively analyze and understand the roots of the battle for information supremacy that transpired in the latter part of the 20th century. To quote Confucius, “study the past if you would define the future.”

The adage holds true today, too, as we are witnessing a truly global effort to master the art of information management and reduce (to the best of our abilities) what David Shenk has defined as “data smog.”

The initial findings indicate a close relationship between the growth of the Soviet scientific and technical information and the founding of the NSF and NTIS as a response from the United States. Understanding the work of the Soviet VINITI and the U.S. NSF, NTIS, and other agencies that fifty years ago pioneered the uncharted territory of scientific and technical information management has the potential to inform our judgment about current challenges and opportunities brought to us by the global information age. The significance of this research lies in the fact that it sheds light on many of the information problems of the past, and the context of those problems remains with us today, for better or worse.

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REFERENCES


