

Chapter 28

Political Context Elements in Public Policy of Radio Frequency Information Technology and Electromagnetic Fields

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ABSTRACT

There are widespread uses of radio frequency information technology (RADFIT) including applications related to communications, security, big data, military, transportation, space exploration, oceanography, agriculture, medical sciences, and more. Regulation of RADFIT is challenging and controversial as agencies and stakeholders struggle to balance benefits and costs. This powerful and invisible technology has the capacity to achieve breakthrough solutions by utilizing electromagnetic fields to collect, analyze, and transmit data, or to enact stimuli to create interventions for machines or living matter. However, the prevalence of RF base stations and electromagnetic fields has altered the environment and results in unintended absorption by human subjects. The public policy and politics of RADFIT, including the processes for base site installation and acceptable levels of absorption, have come to the forefront of discourse. This chapter discusses the political narratives that dictate public policy stances on the issue, bureaucratic considerations, and the response by communities.

INTRODUCTION

A pinnacle in e-governance was reached with the development of information systems that utilize radio frequency technologies. For example, Radio Frequency (RF) towers' capabilities as communication and monitoring devices enable efficiency maximization and real-time solutions. Also, Advanced Imaging Technology (AIT) allows for quick and reliable information processing for purposes of tracking and surveillance. There are several advantages to government's use of Radio Frequency Information Technology (RADFIT) such as the ability to quickly communicate across a wide range of global positioning

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systems, management of communication portals, and survey of visitors entering secure environments in the case of millimeter wave scanning.

The main issue with the presence of radio frequency electromagnetic fields (RFEMF) is balancing the benefits provided from supporting the RADFIT systems with the environmental effects of electromagnetism. Regulation of technologies is controversial as agencies and stakeholders struggle to weigh benefits and costs. Hood et al. (2001) presents a framework for understanding regulatory policy domains by classifying benefits and costs of Information Technology (IT) sciences according to competing political systems: interest group, entrepreneurial, client, and majoritarian. The interaction of these political context elements influences the corresponding regulatory regimes, which are ideographs that describe the track of reasoning of RADFIT systems consumers, producers, and regulatory bodies. By examining regulatory regimes of the RADFIT sphere, public policy implications and future research directions emerge that may improve participatory confidence and informational effectiveness while mitigating threats to communities.

The main purpose of the manuscript is to discuss political context elements and their impact on the public policy arena surrounding RFEMF issues, in addition to touch upon organizational initiatives and public management alternatives. Political context elements of regulatory regimes are presented first. According to the *interest group* political system, incrementalism and the status quo are introduced as encumbrances to policy change. Lack of organization in the public policy arena limits viable alternatives and contributes to government lethargy. The *entrepreneurial system*, indicative of rational choice and new public management, is subsequently discussed as the prompt and elicitor of RADFIT solutions. Modernism and progression serve as societal themes that steer entrepreneurialism in IT and public sector activities in general. Next, the *client system*, which involves administrative responsibility, is highlighted as the regime offering the most potential for bureaucratic discretion and inquiry. The opportunities for interaction between regulatory agencies and resident stakeholders, creates inconsistencies and marginalization of particular societal participants. Then, the *majoritarian system*, serving as the basis for democratic forms of governance, is detailed so as to review the unresolved paradoxes involved in representative decision rules such as voting. Subsequently, organizational and community leadership initiatives, despite the obstacles posed by political context elements, are illustrated to show the current state of organized opposition to RADFIT proposals. Recommendations and areas for further research follow in an attempt to consolidate diffuse community efforts.

There are several objectives of this entry. The controversy over RADFIT solutions is examined to explain how political context elements dictate regulatory regimes of the RFEMF sphere. This entry aims to provide an overview of the bureaucratic considerations underlying RADFIT guidelines and public policy as well as the response by communities. Public administration theory and recommendations for future action serve to provide frameworks for additional policy analysis. The goal is not to provide a comprehensive review of the RFEMF regulatory arena but instead to illuminate indicators that create the onset and resonance of various regulatory regimes, or ideographs, that dictate the decision-making of public policy participants of RADFIT applications including RFEMF, along with implications for communities.

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