



Technical Communication on Controversial Projects

An Online Continuing Education Course for Engineers

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Technical Communication on Controversial Projects

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1 Introduction

This course responds to the challenges faced by scientists and engineers when working on controversial projects involving diverse stakeholders, both in the public realm and in private corporations. It is designed to help various technical experts, agency decision-makers, and the public engage in problem solving processes that can overcome the root causes of the controversy and enable high quality decisions to emerge within a socially constructive process. Chapter 2 provides a scholarly understanding of the nature of the problem that supports the increasingly more practical methodologies and tactics that are presented later in the course.

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Consistent with generally recognized norms, this course uses the term **stakeholder to refer to anyone who has a stake in the outcome of a decision**. Stakeholders may include various technical experts representing different interests, agency decision-makers, and members of the public who are potentially affected by the decision and who are actively engaged in some way with the process. **Stakeholders do not include audiences, which are defined as those who may be interested in a topic enough to follow the news but who are not otherwise actively involved in influencing a project decision**. Oftentimes, audiences may be relying upon other agency and private leaders to represent their interests. **The focus of this course is on achieving effective communication with stakeholders.**

Effective stakeholder communication is a challenge of increasing difficulty and importance in contemporary American society, business and government. Certain democratic values and practices are increasingly difficult to sustain in an ever more technically sophisticated world. On the one hand, there is a social interest to ensure active stakeholder participation in decisions that affect them. On the other hand, the increasingly technical way problems are understood and responded to makes it difficult to ensure that stakeholders are adequately

informed to participate effectively and effect wise decisions. However, the implications of ineffective communication are potentially dire. Over time, failure to achieve effective stakeholder understanding of technically complex issues can compromise effectiveness in applying technical expertise to knowledgeably solve problems because the public will fail to understand and therefore support the work of technical experts.

Public participation in government decisions is a form of stakeholder communication that is at the normative core of American democracy – a government of, by, and for the people. Numerous and wide ranging mechanisms have been established for the public to participate in government. Some of these require little direct engagement between citizens and government representatives, such as voting or providing financial support to candidates for public office. Others allow for direct engagement of citizens with government representatives or personnel, like attending a public meeting on a specifically proposed project or policy decision. However, **the term “public participation” is increasingly recognized to focus on more direct forms of engagement, whereby citizens are brought together with government decision-makers in an organized process** (National Academy of Sciences, 2008).

In accordance with its recognized importance to democratic government, public participation has become infused at all levels of government in the United States today. Guidance on the proper role for public participation exists to guide agency decisions in policy formulation (Presidential/Congressional Commission on Risk Assessment and Risk Management, 1997; National Research Council, 1996), as a mandate from the President (The White House, 2004; Bolten and Connaughton, 2005), and is established in agency guidance that direct project level processes (e.g. Council on Environmental Quality, 2007; U.S. Environmental Protection Agency [EPA], 1999). Similarly, successful businesses are now experiencing the same benefits that modern democratic societies have found by the deployment of ideas ranging from self-directed work teams to flattened organizations, with a broader range of expanded participatory decision making methods.

Despite broad support for the idea of public participation and copious guidance on how to conduct public participation, how best to design and conduct public participation is often contentious and challenging (National Academy of Sciences, 2008). **Numerous different ideas prevail about what public participation is, or should be, and how best to conduct it. These differences are further exacerbated when the issues involve scientific complexity.** While there are many conceptual constructs that define the ideals of what constitutes “good” public participation, there appears to be limited common understanding in practice (Sexton, et al., 1999; Teske, 2000; Webler and Tuler, 2002; Gray, 2004; Fischer, 2000). Different ideas about how best to conduct public participation can lead to controversy, make implementation of

public participation efforts more challenging, and limit the effectiveness of public participation efforts (Wells & Margand, 2006). These challenges can lead some agency managers to question the efficaciousness of public participation efforts, which can lead to minimizing public participation to the bare minimum prescribed by regulation (Johnson & Chess, 2006; EPA Office of Inspector General, 1996).

This class will explain why effective stakeholder engagement is a key strategy for effective communication. Strategies for implementing effective stakeholder engagement are presented that seek to transcend the ongoing debates about how best to do it. Whereas in government, the term public participation is widely used to refer to stakeholder engagement strategies, in this class we emphasize the term stakeholder engagement. The intent is to make the course more broadly applicable to those working on controversial projects within and outside of government and business.

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This class makes frequent reference to environmental projects and issues to exemplify course principles. This reflects the educational background, professional experiences, and focus of the instructor. However, the principles taught are applicable to controversial projects in other specialties and other kinds of communication challenges where technical complexity and social controversy are involved.

2 Understanding the Causes and Characteristics of Controversy

Why is controversy so prevalent when our private and public institutions make decisions on issues involving scientific complexity? What do we know about the causes and characteristics of this controversy? An understanding of the causes and characteristics of controversy is needed to anticipate and proactively design effective stakeholder engagement processes. Accordingly, this chapter describes current knowledge on the causes and characteristics of science-intensive controversy surrounding public decisions, particularly as they pertain to technically complex environmental and public sectors projects.

2.1 Stakeholder Engagement Challenges in an Age of Technical Complexity

Communication with stakeholders is more challenging on projects that involve complex and uncertain scientific or technical information (Nakamura & Church, 2003; Folk, 1991). The different ways that experts and lay stakeholders think about technical problems and describe their needs and interests can lead to frustration during stakeholder engagement processes (Fisher 2000; Tesh, 2000; Edelstein, 2004; O'Brien, 2000; Hamilton, 2003).

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Technical experts tend to seek efficiency of their work using established procedures and standards. These procedures and standards rely upon technical terms and concepts, and complex and lengthy assessments are often produced. These technical assessments are conducted to meet the applicable regulatory requirements and communicate with other technically-minded experts and agency decision-makers.

Conversely, lay stakeholders can be critical of the use of technical assessments as a primary means of informing decisions. Lay stakeholders can have a difficult time communicating with technical experts when the problems, analyses and solutions are addressed only in technical terms. Such technical assessments rely upon technical terms and concepts that are not widely understood. More than that however, **the technical assessments do not necessarily address the perspectives and concerns that lay stakeholders have about the problem, the methods of analysis, or the possible solutions.** Lay stakeholders may seek to address concerns that extend beyond existing regulations. Such challenges to the status quo are a needed component to continually assessing, improving, or adapting existing norms and regulations to meet evolving needs. **Lay stakeholders may also be mistrusting of designated experts or critical of existing**

norms by which experts conduct their assessments and make decisions in conditions of uncertainty or incomplete knowledge. Differences of opinion between experts on assessment methods or interpretations of facts amidst uncertainty can increase lay stakeholder's sense of uncertainty and erode their trust in experts.

With the rise of technical knowledge and expertise throughout the 20th century, there has been a trend toward the transfer of public policy development and decision-making from political deliberation processes to expert assessment processes. Increasingly larger and more complex technical assessments are dominating the decision-making process such that it is increasingly difficult for non-technical stakeholders to participate in the deliberations and politics that are pertinent to the decision-making process. Associated with this trend toward expert dominated assessment is a decline of confidence in professionals and technology. Portions of the public have become dissatisfied with the pace of progress on environmental issues and the increasingly privileged role of experts in the decision-making process. Some have come to perceive experts to be more interested in increasing their own authority, power and wealth (Fisher, 2000; Beck, 1992). Similarly, in business, high level executives and remote board members often intervene in technical projects due to a perceived sense of low return on investment, ignoring all the complex benefits that may be providing value to the organization and organizational learning, sometimes judging the team experts to be wasting time on projects of technical interest instead of projects leading to higher business profit. Contemporary stakeholder engagement embodies the ongoing challenge of integrating the diverse perspectives and concerns of lay stakeholders and technical experts into constructive decision-making processes (McKinney and Harmon, 2002; Carpenter & Kennedy, 2001).

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optimize costs versus benefits in public participation processes (Moynihan, 2003). The instrumentalist perspective focuses on deriving decisions from directly applicable regulatory or other appropriate criteria, which must be addressed to legally justify their decisions. For agency personnel holding an instrumentalist view, public participation can be perceived as inefficient by adding cost and sometimes having uncertain benefits (Thomas, 1995). Hence, the minimum required effort may be expended toward public participation. With such instrumental decision making, the agency's needs may be met, but the needs of other stakeholders may not be. When such differences are left unresolved, the perceived ability of the agency to effectively respond to the will of the public is diminished. The normative core of democracy - a government of, by, and for the people - is not achieved.

The notion of robust and meaningful public participation stands in contrast to the instrumentalist view. **This alternative view has been labeled as “normative” (Moynihan, 2003). Under this view, meaningful public participation requires enhanced citizen participation in agency decisions. Public participation, principally through direct interaction and discourse, is essential to achieving a healthy civic community.** A notion of robust and meaningful public participation is seen to best meet the needs and interests of diverse stakeholders, result in more widely accepted decisions being made, and achieve better outcomes. Accordingly, ample guidance if provided, encourages public participation in all aspects of agency decision-making (e.g. EPA’s Office of Public Participation on Environmental Quality, 2007). This notion of public participation is seen to best meet democratic ideals over the long-term over the more instrumentalist view.

Achieving less controversy and more common ground between these competing perspectives is at stake. If the agencies fail to engage the public in their decisions, they risk undermining their legitimacy. If the EPA consistently fails to make decisions that are coherent to those living in or around the corridors, they may lose the support of the legislative program they may lose. If the EPA fails to engage the public in their decisions, they may lose the support of the legislative program they may lose. If the EPA fails to engage the public in their decisions, they may lose the support of the legislative program they may lose. If the EPA fails to engage the public in their decisions, they may lose the support of the legislative program they may lose.

Conversely, if the public fails to engage the agency in decision authority to experts and fostering the public’s trust in the agency who make decisions in an increasingly hierarchal and authoritarian method of governance. In other words, if the public becomes disinterested or despondent about public participation, the agency’s perspective, including the beliefs, values and problem-solving frames that accompany that perspective, becomes unchallenged. This outcome obviously devalues the role of the citizen in the development of robust and legitimate decisions. Furthermore, it disregards the scientific uncertainty and the subjectively-based tradeoffs inherent in the decisions. Where technically expert agencies are given autonomous decision-making authority, decision-making becomes conflated to a naive perspective of complete objectivity.

2.2 A Historical Account of Science-based Decision-making

Few would deny that the modern technological era is providing a high quality of life for many, but it is also creating an ever-growing list of potential risks that must be managed. Environmental contamination, climate change, genetically engineered foods, and resource-

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