A Framework Approach to Evaluate Cross-Cultural Adaptation of Public Engagement Strategies for Radioactive Waste Management – 13430

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ABSTRACT

The complex interplay of politics, economics and culture undermines attempts to define universal best practices for public engagement in the management of nuclear materials. In the international context, communicators must rely on careful adaptation and creative execution to make standard communication techniques succeed in their local communities. Nuclear professionals need an approach to assess and adapt culturally specific public engagement strategies to meet the demands of their particular political, economic and social structures.

Using participant interviews and public sources, the Potomac Communications Group reviewed country-specific examples of nuclear-related communication efforts to provide insight into a proposed approach. The review considered a spectrum of cultural dimensions related to diversity, authority, conformity, proximity and time. Comparisons help to identify cross-cultural influences of various public engagement tactics and to inform a framework for communicators. While not prescriptive in its application, the framework offers a way for communicators to assess the salience of outreach tactics in specific situations. The approach can guide communicators to evaluate and tailor engagement strategies to achieve localized public outreach goals.

INTRODUCTION

Too often, organizations rely on instinct or trial-and-error to define effective public engagement strategies. In the management of nuclear materials, the complex interplay of politics, economics and culture undermine attempts to define best practices in communications. Winning programs that build public support for radioactive waste projects offer few universal lessons that can be replicated across national boundaries.

To better understand this challenge, Potomac Communications Group (PCG) reviewed national public engagement strategies related to nuclear waste management issues and the siting of high level waste repositories. The study's objective was to develop recommendations regarding communications practices that could be considered worldwide and to identify specific activities that would need to be more culturally tailored.

Social dimensions of communications influence the complexity of nuclear waste discussions internationally. Significant literature regarding cultural frames exists and offers guidance to recognize culturally relevant communication influencers. [1] The "Hear, See, Say" framework provides a systematic way to gain insight from public engagement tactics demonstrated in other nations on radioactive waste issues. With recognition of the cultural, social and political differences, the inflection points that distinguish the success or failure of traditional communication techniques can be more easily identified.

As Landis and Bennett characterize years of intercultural research, their compilation reveals that the dimensions of diversity, authority, conformity, proximity and time must be considered to adapt successful public engagement techniques across cultures. [2]. Successful stakeholder engagement typically produces culturally tailored solutions that accommodate for these social norms. Replicating success is difficult community to community. Nonetheless, a framework approach to communications can provide a mechanism to better identify opportunities for cross-cultural adaptation of public engagement strategies that have had positive results in the arena of nuclear waste management.

At the most basic level, a framework helps nuclear waste managers observe, process and engage the communication activities that will resonate best with target audiences. The study of public outreach initiatives in 14 different countries over the last two decades offered insight into best practices and lessons learned. Patterns emerged that demonstrate three primary influencers on the viability of key communications tactics: political mechanisms at work, organizational behaviors in practice, and tactical actions in context. As a result, PCG developed a "Hear, See, Say" framework to evaluate the potential outcomes of traditional public relations and engagement activities in varied cultural contexts. The framework helps communicators work through a process to understand stakeholder contributions, recognize how their organizations actions may be interpreted and support action that will persuade.

PCG's "Hear, See, Say" framework approach draws from the emerging field of transdisciplinary research, pioneered by Roland Scholz at the Swiss Federal Institute of Technology. [3]. This academic field integrates proven models from sociology, cognitive science and economics into a holistic approach to understand the intersections of society and technology, humans and the environment. For communicators, this approach expands the importance of "framing" in science communication to areas of political, economic and cultural concerns. By systematically evaluating dimensions of culture on the spectrum of cultural attributes, organizations can better learn to how hear from their stakeholders, demonstrate their intent and communicate consistently in both word and action.

DESCRIPTION

Radioactive waste siting issues often remain resistant to resolution. Until recently, there has been little urgent interest for high-level waste disposal in final repositories. Operators have continued to accumulate used nuclear fuel at power plants while radioactivity decays to levels that make handling and storage easier. However, the events at Fukushima coupled with the emergence of nuclear newcomers have led to increased public discussion regarding long-term management of radioactive waste. Coupled with the desire of some countries to pursue new nuclear energy programs, there is increasing demand for successful communications strategies on these topics that benefit from the past experiences of other nuclear operators.

Borrowing from existing literature on cross cultural communication, PCG began with an exploration of the dimensions of diversity, authority, conformity, proximity and time in the comparison of public engagement techniques. As shown in Fig. 1, these five dimensions present themselves in a spectrum of ways. First, the diversity of a community may range from low to high. It can manifest itself in economic, political or social attributes. Diversity increases the range of stakeholder interests that must be accommodated and adds layers of complexity to a communication program.

Next, cultural attitudes towards authority influence public expectations regarding the decision making process. These can be more clearly differentiated by the types of political mechanisms available to the public for participation. The relative dependencies that citizens have on each other characterize the conformist or individualistic societies. Proximity offers another dimension of cultural distinction that may change the significance of key audiences and how they intend to participate. Finally, timing remains an obvious and ever present factor in communications planning for nuclear waste management issues requiring understanding of the community level norms and creative calibration of near-term and future goals to meet stakeholder interests.

Spectrum of Cultural Attributes		
	Dimensions of Culture	
Low	**Diversity**	*High*
Decentralized	**Authority**	*Centralized*
Independent	**Conformity**	*Dependent*
Localized	**Proximity**	*National/Regional*
Immediate	**Time**	*Futuristic*

Fig. 1. Dimensions of Culture on the Spectrum of Attributes

Using the five dimensions of cultural influencers, PCG reviewed communication initiatives related to public engagement on radioactive material siting efforts. The “Hear, See, Say” framework draws from the emergent themes in the successes and failures of these past projects. First, stakeholders consistently sought to be heard. Stakeholders expect to be able to share their ideas on nuclear siting issues. The challenge comes in determining the most appropriate ways to facilitate that feedback. From the most democratic to the most autocratic situations, the success of public engagement activities stemmed from transparency and trust in the process.

The second factor demonstrates that stakeholders seek to “see” their feedback reflected back in action. Organizational behavior moves in parallel with political and social feedback mechanisms. This introduces another form of transparency. An organization’s operations must be consistent with not only what the organization says about itself, but also clearly show inclusion the ideas shared by stakeholders through the engagement process.

Finally, the selection of tactics and what nuclear communicators can “say” on behalf of their organizations integrates ground level knowledge of the norms for acceptable forms of participation with the selection of tactics such as media coverage, online engagement, advertising and other distribution channels. The spectrum of cultural attributes is not prescriptive, but offers insight into the trouble points most likely to emerge in building public support.

What Organizations Hear, See and Say in the Context of Public Engagement

Transparent communication with the public has helped Finland build support for nuclear energy as well as for waste strategies to dispose of the associated used fuel in country. Multiphase research programs helped launch Finnish support for both nuclear energy facilities and the associated spent fuel management. By providing research results on the technical issues, scientific details and social science issues, the government and energy-producing industry were able to build confidence directly and indirectly. The issue of public acceptance, as characterized in Finland, has not been an issue of educating on nuclear energy issues. Acceptance has been won through the decision-making process.

Time, proximity and authority play into the success of the Finnish approach. The first phase of the program began in 1989 and ran through 1993. It featured traditional technology and natural science research. Public opinion surveys were conducted at three potential sites for the repository. These surveys demonstrated high support (40 percent) at the Eurajoki site where TVO already had operations and revealed what types of information were needed for different groups of people. [4].

The second phase (1994 to 1996) initiated awareness efforts focused on the socio-political and societal issues. Legislative action translated the technical findings into policy and laid the foundation to begin to address the social implications of the technical and scientific issues identified. Rather than emphasizing technical performance-based assessments, these studies focused on reducing uncertainties associated with the basic science and main phenomena related to geological disposal.

In 1994, the national legislature passed a law that required nuclear waste be managed and disposed of within Finland. Planners sought the public's input on siting a nuclear waste repository. Today, Finland is one of the few countries now constructing a deep underground repository for its used nuclear fuel. Plans call for the repository on Olkiluoto Island, in Eurajoki, to open in 2020.

Proximity and an egalitarian approach to authority unified a multitude of groups whose relative lack of diversity aided in plotting a solution. In planning for a nuclear waste repository, Finnish researchers asked local communities to identify factors that needed to be studied. Issues of interest included the internal image of residents in the selected community and the external image projected to businesses, tourists and potential residents outside the site community. Safety, real estate values, agricultural and forestry impacts, and maintaining a good place to live were priorities. Among cultural dimensions affecting the process, proximity accounted for not only local issues, but the site's proximity to existing low-level waste disposals. Public involvement shaped the research and provided ways for residents to express the factors they wanted to be considered in siting decisions. Results of these scientific studies were shared. The success of the Finnish multiphase process for the repository siting has made it an often-cited model for public participation. [5].

The willingness of authorities to decentralize the process and to engage the public continued to show immediate results and long-term future possibilities. The third phase from 1997 to 2001 focused on stakeholder outreach and social science issues. Concerns regarding the reprocessing, import of foreign waste and transportation were identified early in the process and final decision making proceeded in this period.

The municipality of Eurajoki used the SWOT (Strengths-Weaknesses-Opportunities-Threats) four-field analysis technique to open meaningful discussion on specific issues and resolve concerns. This tactic emphasized the equal role of all stakeholders in the decision making process.

Like Finland, France has engaged in continuous, long-term investments in public education, focusing on the benefits of nuclear energy. With the exception of some opposition protests in the early days of its nuclear energy program, France has enjoyed solid support for this source of electricity. In contrast, France struggled in its attempt to site an underground geological storage facility for long-term storage of nuclear waste toward the end of the 1980s. Communities that supported nuclear energy were against hosting a storage facility to the point of expressing their opposition through civil unrest. Parliament, surprised by the opposition, appointed a politician to investigate the matter.

In this case, the dimensions of diversity and proximity interfered with the success of early engagement efforts. The spectrum of cultural attributes between local residents and government officials spanned too much range. Government officials with deep technical expertise communicated to largely rural residents in stark terms of "burying the waste permanently underground." This terminology spoke to cultural archetypes (e.g., permanent burial means death; permanent burial was interpreted as the waste would be abandoned by authorities). To counter these unfortunate archetypes, the French government essentially introduced the idea of monitored retrievable storage with a commitment to apply technological advances to the waste. In fact, the politician who studied the opposition introduced legislation to build laboratories at the possible sites to study nuclear energy waste. This approach, emphasizing stakeholder interests and moving from an independent to more conformist approach, proved to be far more successful. [6].

These examples demonstrate how the "Hear, See, Say" framework uses the spectrum of attributes that exists within the five dimensions of culture to reveal influences on the success or failure of various communications tactics. Taiwan presents another useful example because public acceptance has become more volatile there in recent years. In 1979, the first 2-unit nuclear power station was completed. The total nuclear energy capacity tripled by 1985, making it the dominant energy source for the country throughout the 1990s. A fourth nuclear power facility called Lungmen is currently under construction, but it is plagued by domestic opposition and delays. Related politics and project management issues also threaten the government's efforts to develop high-level nuclear waste repositories. [7]

Taiwan's unique relationship with the People's Republic of China places their siting issues on the high side of the diversity spectrum, factoring in the diverse array of international stakeholders and recalibrating the notion of proximity in related discussions. This has generated controversy and delay in its nuclear energy ambitions since the inception of the program. With four research reactors, the country explored fuel fabrication in the early 1970s, but international proliferation concerns brought the program to a halt. Although Taiwan signed the Treaty on the Nonproliferation of Nuclear Weapons (NPT) in 1968, China nullified its ratification after replacing Taiwan in the United Nations in 1971. Currently, nuclear safeguards are applied in Taiwan through bi- and tri-lateral agreements among countries and the IAEA.

About six weeks after Fukushima, more than 13,000 protesters convened in Taipei to rally against nuclear energy. The protestors called for the government to close Taiwan's nuclear power plants, but an op-ed for Taipei Times offered a deeper interpretation in that the government has "failed to set up real and effective channels for dialog with the public, nor have they proposed a concrete and complete energy policy package." [8]. Despite opposition, the national government continues to build support among third party stakeholders. Local voter referendums are being used in the siting of two waste storage facilities. A majority vote is needed in a host community to move forward with the project and the results remain to be seen. The Atomic Energy Council makes a wide variety of documents available through its website to maintain a transparent process. [9]. These efforts are designed to recalibrate the proximity of the debate to local issues and refocus stakeholders' attitudes about time onto Taiwan's future.

Helping Organizations To Be What They Say They Are

Transparency is a watch word in public engagement activities. Stakeholders want to share their ideas and they desire access to information so they can determine whether or not what they see happening matches what they are told is happening. Transparency has a range of implications along the five cultural dimensions: How many ways is an organization expected to customize communication to make it accessible to diverse audiences? Who has authority to hold others accountable and on what issues? How well can operators conform to transparency demands before security threats emerge?

In this sense, the "Hear, See, Say" framework provides a lens that offers a closer look at organizational behavior during a public engagement campaign. Good public relations cannot fix bad safety culture or poor management. Communicators need to recognize culturally relevant differences in what is expected from those in positions of authority in their scenarios versus past examples. Leadership from the top will influence what is possible in terms of communication choices and outcomes. Nuclear communicators need some level of access to both information and decision-making to understand the dimensions of culture within their own organizations. With those insights, they can plot an organization's situation on the spectrum of cultural attributes to make good choices regarding tactics.

For example, public awareness about the Finnish program's expertise and research results supported activities by demonstrating the safety of the program. The research experience of Finland reveals three primary principles for successful public engagement by the utility:

1. All parties were taken seriously by balancing social and technical concerns
2. Impartial facilitators with no financial or political stake in the decision were developed through a multiphase process in order to introduce new opinions to the discussion
3. Community questions were addressed through a deliberative (SWOT) process rather than by the simple delivery of facts

Each of these principles reinforces the lesson that a sophisticated and well-educated population requires adequate opportunity to provide input on issues they care about. Homogeneity and conformity can facilitate increased communication success.

Making sure stakeholders see the desired input into the decision-making process has been a goal in Slovenia as well. Slovenia's nuclear energy experience is unusual in that it shares its nuclear power plant with another country, the Republic of Croatia. The two countries divide the basic capital of the Krsko nuclear power plant into two equal shares owned by GEN energija (Slovenia) and Hrvatska Elektropriveda (Croatia). Each has the right to use 50 percent of the plant's total output.

For years, Slovenia has maintained strict regulation of the plant and achieved outstanding safety and productivity reviews. This effort has helped Slovenia develop their long-term energy plan and list nuclear as a major part of this plan. Slovenia's prominent and consistent public information activities show the importance of training and public outreach for countries with a small nuclear program. Developing these communication tools has paid off in achieving a well-informed public as well as public trust in its country's nuclear organizations.

Regularly polling visitors has provided the Nuclear Training Centre (ICJT) with benefits beyond public opinion. These polls have also revealed that environmental friendliness of nuclear energy continues to be recognized as the reason why nuclear energy should be used over other energy sources. Also, the most significant disadvantage of nuclear energy, as seen by Centre visitors, is the disposal of radioactive waste.

Independent polls demonstrate the tangible results of Slovenia's public information activities. A Eurobaromoter poll in 2005 tested the factual knowledge of European Union country residents on radioactive waste. Slovenian respondents earned third best in their knowledge of radioactive waste. Poll results demonstrate that the increased knowledge and better attitude of Slovenia's youth can be attributed to the generations of students who have visited the information center.

Planning What to Say: Communication Tactics on Radioactive Material Management

In June 2010, the European Atomic Forum (FORATOM) stated that "*Recent developments in the United Kingdom and Finland show that if the political decision to include nuclear in the energy mix is taken in an open and democratic way, people tend to become more favourable to nuclear power*." While businesses, residents, consumers had different attitudes about final waste disposal, the Finnish approach relied on unique cultural traits to engage and cater to these interest groups. The efforts yielded a variety of outcome that demonstrated commitment by the operator to the local stakeholders.

Through the construction of a new home for elderly people, renovation of a historic mansion as a tourist attraction and a new reputation for the city of Eurajoki as a business friendly city attractive to businesses, jobs, tourists and residents, residents saw the influence of their input and the benefit of the site to their community. Working through the local community, the technical plan engaged nuclear waste management experts and set the stage for practical decision making about the options for spent fuel in Finland.

Public engagement tactics relevant in France or Finland need special attention for use cultures where the dimensions of diversity, authority and proximity differ. For example, Malaysia has had challenges applying some communication techniques. Concerns over historical dumping of thorium waste related to rare earth processing and a new proposed rare-earth plant in Pahang have created an energized public against all things radioactive. The recent IAEA probe of the Lynas

Rare Earth facility has further heightened nuclear concerns. Nonetheless, efforts to introduce a new nuclear energy program in the country have inspired increased public communication on issues of radioactivity.

Malaysia's long-term investigation of the necessary enablers for a strong nuclear energy program dates back to the 1980's and 1990's and included international exchanges with nuclear trade groups and vendors. However, their approach did not initially include communications planning. In August 2011, public relations industry website, the Holmes Report, reported that the Malaysia Nuclear Power Corporation (MNPC) shortlisted three firms for a multi-million dollar PR contract. The effort to boost support for nuclear energy was derided by critics as a display of form over function. The skepticism was fueled by FBC, a London based production company that was found to be supplying pre-approved content to broadcast networks. The company was revealed to be doubling as a PR firm for Malaysian leaders. [10]. The conflict-of-interest scandal affected high profile television broadcasters which ran promotional content as journalistic news reports.

The incident highlights the sensitivity of communications regarding nuclear issues and the need to approach public outreach initiatives with high regard for the actual process of public engagement.

CONCLUSIONS

Using five dimensions of cultural influencers - diversity, authority, conformity, proximity and time - PCG reviewed communication initiatives related to public engagement on radioactive material siting efforts. The "Hear, See, Say" framework offers communicators a systematic way to evaluate communication tactics for public engagement across cultural boundaries and increase the likelihood of successful implementation.

Conclusions were drawn from the review of national examples by asking these questions in relation to each of the five dimensions of culture. Success emerges in the cases where there is resonance among the three elements of the framework – when public feedback shows up in operational standards and is reinforced through familiar communication channels. In every example, stakeholders consistently sought to be heard. From the most democratic to the most autocratic situations, the success of public engagement activities stemmed from transparency and trust in the decision making process, regardless of how democratic the process itself might be.

Stakeholders also consistently sought to "see" an affirmative connection between what organizations were saying and doing. To varied degrees, they sought to their feedback reflected back to them in the actions of the responsible organization. Organizational behavior moves in parallel with political and social feedback mechanisms. Understanding the anticipated role of citizens, decision-makers, and government authorities is essential to adapting traditional communications activities across cultural boundaries. Mechanisms for political decision making must be recognized in the culture where they are implemented. Finally, the selection of tactics and what nuclear communicators can "say" integrates ground level knowledge of the norms for acceptable forms of participation into available tactics such as media coverage, online engagement, advertising and other distribution channels.

Frames are structures that help arrange facts, anecdotes and examples. They hold a story together, giving audiences a way to follow a dramatic arc from start to finish, providing context and resolution to move a story along. The "Hear, See, Say" framework defines a narrative that helps communicators compare and adapt public engagement strategies across cultures. It links how politics interplays with the behavior of nuclear companies, regulators and consumers and forecasts the relevance of tested communications tactics for those situations. The framing technique is a human tradition that extends beyond generational and national boundaries. Therefore, it is useful in determining what lessons can be considered universal and what aspects of public engagement need to be more culturally tailored.

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