

Chapter 11. Organizational Culture¹

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The literature on organizational culture is as relevant to public science management as it is to the management of private sector business organizations. Given a rapidly changing environment and continuing insights into organizational effectiveness, science organizations, as most other organizations, are seriously rethinking what they do and how they can best define and accomplish their goals and objectives. Once goals are defined, it is necessary to address the type of culture that is necessary to advance these goals and objectives and ensure the successful implementation of the necessary changes. In addition, the organizational effectiveness literature has been increasingly emphasizing the importance of culture in motivating and maximizing the value of its intellectual assets, particularly its human capital. This is particularly important in knowledge intensive organizations, such as publicly funded scientific laboratories. This review of the organizational culture literature makes it clear that (1) culture is essential for both successful organizational change and maximizing the value of human capital (2) culture management should become a critical management competency, and (3) while the right culture may be a necessary condition for organizational success, it is by no means a sufficient condition. An important challenge for managers is to determine what the most effective culture is for their organization and, when necessary, how to change the organizational culture effectively.

Organizational culture became a business phenomenon in the early 1980s, triggered by four seminal books:

- ◆ Ouchi's (1981) *Theory Z: How American Business Can Meet the Japanese Challenge*
- ◆ Pascale and Athos's (1982) *The Art of Japanese Management: Applications for American Executives*
- ◆ Deal and Kennedy's (1982) *Corporate Cultures: The Rites and Rituals of Corporate Life*
- ◆ Peters and Waterman's (1982) *In Search of Excellence: Lessons from America's Best Run Companies*.

The first two books suggested that Japanese business success could be attributed in large part to Japanese corporate culture. All four books suggested that corporate culture was key to organizational performance and that corporate culture could be *managed* to improve a company's competitive advantage. They provided pragmatic prescriptions to American business leaders desperate for answers to help them remain successful in the face of increasing Japanese competition. These books were bestsellers; the last out sold all other non-fiction books for the year.

The concept of organizational culture also appealed to organizational scientists and practitioners who had grown disillusioned with the prevailing formalistic, quantitative organizational research. The emphasis on organizational culture shifted attention away from the functional and technical aspects (the so-called *hard* side) of management that could be more readily quantified and empirically analyzed to the interpersonal and symbolic aspects (the *soft* side) of management that required in-depth, qualitative studies of organizational life. This focus on the qualitative, symbolic aspects of organizations and management stimulated a large literature on *leadership*. In

¹ Related chapters include: Change Management; Knowledge Management; Competencies; Leadership; Innovation; Creativity.

addition, specialized literatures emerged around particular variants of organizational culture considered increasingly important for success in the modern business world, such as change-oriented culture, learning culture, innovating culture, team- and project-oriented cultures. More recently, attention has turned to identifying and creating an organizational culture that facilitates agility; promotes alliances, partnerships and networks; encourages knowledge management; fosters corporate responsibility and/or moral integrity; and embraces diversity. The concept of organizational culture has generated a massive literature with enormous popularity. By the 1990s, a literature search would generate over 2500 hits (Alvesson and Berg 1992). It is an extremely important literature because the concept of organizational culture has been central to much of the subsequent work on organizational effectiveness.

History

Although the concept of organizational culture was popularized in the early 1980s, its roots can be traced back to the early human relations view of organizations that originated in the 1940s. Human relations theorists viewed the informal, nonmaterial, interpersonal, and moral bases of cooperation and commitment as perhaps more important than the formal, material, and instrumental controls stressed by the rational system theorists (see Chapter 3: *Overview of the Management and the Organizational Effectiveness Literatures*). The human relations perspective drew its inspiration from even earlier anthropological and sociological work on culture associated with groups and societies (see Geertz 1973; Mead 1934; Durkheim 1964; Weber 1947, 1958).

Attention to organizational culture lost ground as organizational science, and social science in general, became increasingly quantitative. To the extent that research on organizational culture survived, its focus shifted to its more measurable aspects, particularly employee attitudes and perceptions and/or observable organizational conditions thought to correspond to employee perceptions (i.e., the level of individual involvement, the degree of delegation, the extent of social distance as implied by status differences, and the amount of coordination across units). This research, referred to as *organizational climate* studies, was prominent during the 1960s and 1970s (Denison 1990). The renewed interest in organizational culture that emerged in the late 1970s and resulted in the four books mentioned above suggested that a deeper, more complex anthropological approach was necessary to understand crucial but largely invisible aspects of organizational life. This renewed interest in organizational culture represented a return to the early organizational literature but it went far beyond this literature in contributing important new insights and ways of thinking about the role, importance, and characteristics of organizational culture. Also, research on the effect of culture on organizational performance and investigations into how organizational cultures are created, maintained, and changed received greater attention. The main difference was that organizational culture was now viewed less as a natural, organically emergent phenomenon and more as a *manipulable and manageable* competitive asset.

What is Organizational Culture?

Definitions of organizational culture initially focused on distinguishing levels of organizational culture and strong versus weak cultures.

Levels of Organizational Culture

Many definitions of culture give primacy to the cognitive components, such as assumptions, beliefs, and values. Others expand the concept to include behaviors and artifacts, leading to a common distinction between the visible and the hidden levels of organizational culture – a distinction basically corresponding to the *climate/culture* distinction noted above (Kotter and Heskett 1992). In contrast to the distinction between the visible and hidden levels, some theorists distinguished multiple levels. Schein (1985), one of the foremost experts in the area, identifies the following levels, as shown in Figure 1.

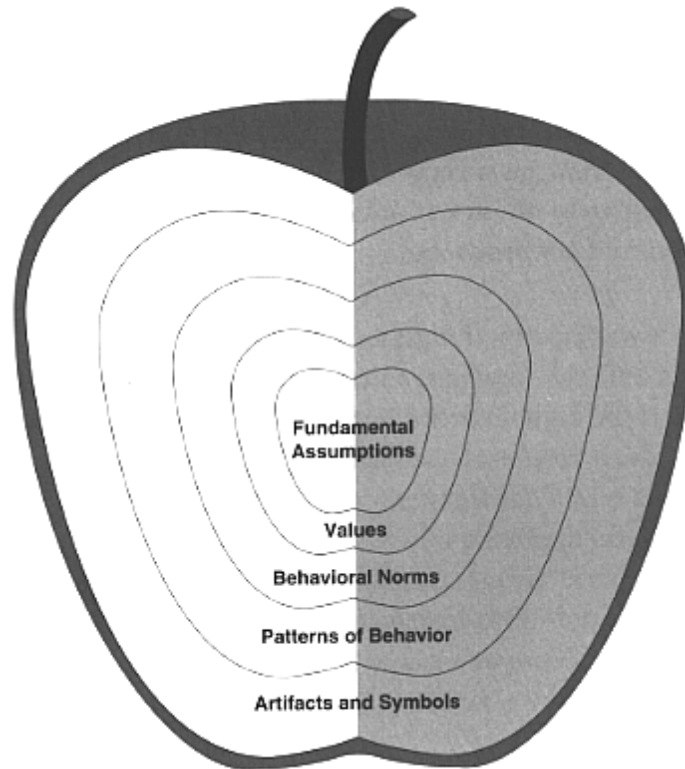


Figure 1. Levels of Organizational Culture (Adapted from Schein 1980; Schein 1985)

In Schein's view, fundamental assumptions constitute the core and most important aspect of organizational culture. Accordingly, he offers the following formal definition of organizational culture:

A pattern of shared basic assumptions that the group learned as it solved its problems of external adaptation and internal integration, that has worked well enough to be considered valid and, therefore, to be taught to new members as the correct way to perceive, think, and feel in relation to those problems (Schein 1992:12).

While the deeper levels may have been somewhat invisible in the past, this may no longer be the case. As a result of greater attention being directed at managing culture, organizations are recognizing the importance of articulating and stressing their fundamental assumptions. This is similar to what later happens with knowledge management – greater attention becomes directed at making the tacit knowledge within an organization more explicit and accessible (see Chapter 5:

“Knowledge Management”). This suggests a general trend toward more explicitly managing what previously was considered largely unmanageable.

Strong versus Weak Culture

Although all organizations have cultures, some appear to have stronger, more deeply rooted cultures than others. Initially, a strong culture was conceptualized as a coherent set of beliefs, values, assumptions, and practices embraced by most members of the organization. The emphasis was on (1) the degree of consistency of beliefs, values, assumptions, and practice across organizational members; and (2) the pervasiveness (number) of consistent beliefs, values, assumptions, and practices. Many early proponents of organizational culture tended to assume that a strong, pervasive culture was beneficial to all organizations because it fostered motivation, commitment, identity, solidarity, and sameness, which, in turn, facilitated internal integration and coordination. Some, however, noted that a strong culture might be more important for some types of organizations than others. For example, volunteer organizations may need to stress culture more than business organizations. Still others noted potential dysfunctions of a strong culture, to the point of suggesting that a strong culture may not always be desirable. For example, a strong culture and the internalized controls associated with it could result in individuals placing unconstrained demands on themselves, as well as acting as a barrier to adaptation and change. A strong culture could also be a means of manipulation and co-optation (Perrow 1979). It could further contribute to a displacement of goals or subgoal formation, meaning that behavioral norms and ways of doing things become so important that they begin to overshadow the original purpose of the organization (Merton 1957; March and Simon 1958).

Culture was initially seen as a means of enhancing internal integration and coordination, but the open system view of organizations recognized that culture is also important in mediating adaptation to the environment (see Chapter 3: *Overview of the Management and the Organizational Effectiveness Literatures*). The traditional view of a strong culture could be contrary to the ability of organizations to adapt and change. Seeing culture as important for facilitating organizational innovation, the acceptance of new ideas and perspectives, and needed organizational change may require a different, or more nuanced, view of organizational culture.

Schein (1992) notes that, indeed, a strong organizational culture has generally been viewed as a conservative force. However, in contrast to the view that a strong organizational culture may be dysfunctional for contemporary business organizations that need to be change-oriented, he argues that just because a strong organizational culture is fairly stable does not mean that the organization will be resistant to change. It is possible for the content of a strong culture to be change-oriented, even if strong organizational cultures in the past typically were not. He suggests that the culture of modern organizations should be *strong* but *limited*, differentiating fundamental assumptions that are *pivotal* (vital to organizational survival and success) from everything else that is merely *relevant* (desirable but not mandatory). Today’s organizations, characterized by rapidly changing environments and internal workforce diversity, need a strong organizational culture but one that is less pervasive in terms of prescribing particular norms and behavioral patterns than may have existed in the past. This view was supported by Collins and Porras (1994) in their famous study (*Built to Last*) of companies that had strong and lasting performance.

Theories of Organizational Culture

Just as there are differing perspectives on what organizational culture is, there are differing perspectives regarding how it functions. Denison (1990) identifies four basic views of organizational culture that can be translated into four distinct hypotheses:

- ◆ The consistency hypothesis – the idea that a common perspective, shared beliefs and communal values among the organizational participants will enhance internal coordination and promote meaning and a sense of identification on the part of its members.
- ◆ The mission hypothesis – the idea that a shared sense of purpose, direction, and strategy can coordinate and galvanize organizational members toward collective goals.
- ◆ The involvement/participation hypothesis – the idea that involvement and participation will contribute to a sense of responsibility and ownership and, hence, organizational commitment and loyalty.
- ◆ The adaptability hypothesis – the idea that norms and beliefs that enhance an organization’s ability to receive, interpret, and translate signals from the environment into internal organizational and behavioral changes will promote its survival, growth, and development.

These hypotheses focus on different aspects of culture but more importantly, they stress different functions of culture. The first two hypotheses tend to encourage/promote stability; the second two allow for change and adaptability. The first and third hypotheses see culture as focusing on internal organizational dynamics; the second and fourth see culture as addressing the relation of the organization to its external environment.

	Stability/Control	Change/Flexibility
Internal	Consistency	Involvement/participation
External	Mission	Adaptability

These hypotheses about organizational culture correspond closely to Cameron and Quinn’s (1999) categorization of organizational effectiveness perspectives and associated types of organizations, as shown below.

	Stability/Control	Flexibility/Discretion
Internal Focus/ Integration	<i>Hierarchy</i>	<i>Clan</i>
External Focus/ Differentiation	<i>Market</i>	<i>Adhocracy</i>

Handy (1995), well-known for his characterization of four dominant types of leaders as corresponding to gods of Greek mythology, also distinguishes key types of organizational cultures that correspond to different organizational forms. He asserts that clearly distinguishable organizational cultures give rise to four types of leaders, which he characterizes as: Zeus, Apollo, Athena, and Dionysus. These distinct cultures (just as clan-based, hierarchy-oriented, market-

based, and adhocracy-based cultures) are associated with organizations that have congruent attributes across multiple technical/functional dimensions.

In contrast to identifying distinct types of organizational cultures, there has been a growing tendency to recognize and emphasize cultural complexity (Denison et al. 1995). One approach to incorporating greater cultural complexity is to recognize that most organizations today will have some aspects of all of these cultures. This view of culture focuses on the need to balance and manage the mix. The problem with this view is that culture tends to lose any sense of coherency. It is difficult to see culture, in this sense, as providing meaning or motivating/inspiring organizational members to behave in particular ways.

There is an alternative approach to cultural complexity that avoids the problem that culture will fail to provide meaning and a sense of corporate identity. This approach moves beyond differentiating cultures in terms of technical/functional orientations (i.e., external versus internal orientation, stable versus change orientation, control versus individual discretion, directive versus participative, autocratic versus democratic, task-oriented versus relationship-oriented, integrative versus adaptive, sameness versus differentiation, transactional versus transformational). Rather than seeing the role of organizational culture as balancing competing technical needs and, thus, becoming a complicated mix of cultural types, organizations are viewed as consisting of multiple, differentiated cultural orientations directed at critical ways of thinking and behaving as a member of the organization. These cultural orientations can include ways of thinking and behaving with respect to change, diversity, conflict, innovation, organizational learning, knowledge management, partnership or alliance building, relationship formation, and corporate responsibility. This cultural differentiation perspective sees cultures being developed around various critical organizational aspects rather than based on competing orientations. The key is to identify and effectively manage key cultural orientations, develop synergies between them where possible, and prevent them from conflicting with one another. Although, in many cases, these various orientations can be highly interrelated and mutually reinforcing, there is not necessarily a need for a single overarching culture that incorporates everything. Perhaps, at most, there may be a coherent set of shared basic assumptions and values.

This notion of cultural differentiation is similar to but not the same as the notion of subcultures. Cultural differentiation refers to somewhat distinct, though not necessarily conflicting, cultures associated with different organizational aspects, while organizational subcultures refer to different cultures developing among distinct organizational occupational groupings or professions (such as blue collar/white collar/management subcultures; subcultures of engineers/ production workers/ marketing and sales/managers; and/or cultures associated with various scientific or professional disciplines). Subcultures often refer to informal emergent cultures whereas differentiated cultures are more likely to refer to more formal and managed cultures, but this is a hazy distinction.

Increasing Importance of Organizational Culture

Schein (1992) suggests that organizational culture is even more important today than it was in the past. Increased competition, globalization, mergers, acquisitions, alliances, and various workforce developments have created a greater need for:

- ◆ Coordination and integration across organizational units in order to improve efficiency, quality, and speed of designing, manufacturing, and delivering products and services
- ◆ Product innovation

- ◆ Strategy innovation
- ◆ Process innovation and the ability to successfully introduce new technologies, such as information technology
- ◆ Effective management of dispersed work units and increasing workforce diversity
- ◆ Cross-cultural management of global enterprises and/or multi-national partnerships
- ◆ Construction of meta- or hybrid- cultures that merge aspects of cultures from what were distinct organizations prior to an acquisition or merger
- ◆ Management of workforce diversity
- ◆ Facilitation and support of teamwork.

In addition to a greater need to adapt to these external and internal changes, organizational culture has become more important because, for an increasing number of corporations, intellectual as opposed to material assets now constitute the main source of value. Maximizing the value of employees as intellectual assets requires a culture that promotes their intellectual participation and facilitates both individual and organizational learning, new knowledge creation and application, and the willingness to share knowledge with others. Culture today must play a key role in promoting

- ◆ Knowledge management (see Chapter 5)
- ◆ Creativity (see Chapter 15)
- ◆ Participative management (see Chapter 10)
- ◆ Leadership (see Chapter 12).

Effects of Organizational Culture

There has been a great deal of anecdotal evidence and some empirical evidence regarding the performance effects of organizational culture. Anecdotal evidence begins Peters and Waterman's *In Search of Excellence* (1982). This book basically stimulated the now familiar business school case study approach. More recent anecdotal evidence regarding the most successful companies in the last several decades has also been proffered. According to Cameron and Quinn (1999), many of the most successful companies, including Southwest Airlines (21,775% return on investment [ROI]), Wal-Mart (19,807% ROI), Tyson Foods (18,118% ROI), Circuit City (16,410% ROI), and Plenum Publishing (15,689% ROI), score low on well-established critical success factors (i.e., entry barriers that prevent organizations from competing for the same market, nonsubstitutable products, low levels of bargaining power on the part of buyers due to customer dependence, low levels of bargaining power for suppliers because they have no alternative customers, a large market share that promotes economies of scale, and rivalry among the competition that deflects head-to-head competition with a potential dominator). These unlikely winners have strong leadership that promotes unique strategies and a strong culture to help them realize these strategies. There is also strong anecdotal support indicating that the primary cause of failure of most major change efforts (such as TQM and reengineering) has been the failure to successfully change the organizational culture (CSC Index 1994; Caldwell 1994; Goss et al. 1993; Kotter and Heskett 1992).

Kotter and Heskett (1992) have attempted to make this intriguing, but admittedly inconclusive, anecdotal evidence more systematic and empirical. They had financial analysts identify the firms they considered most successful and then describe the key factors discriminating these firms from those that were less successful. Seventy-four of the seventy-five analysts indicated that

organizational culture was a key factor. In addition, Denison (1990) found empirical support for the participation/involvement view of culture – higher levels of employee participation were correlated with better organizational performance.

In contrast to this supporting anecdotal and empirical evidence, it has become well known, and a point of great contention, that the exemplary companies identified by Peter and Waterman (1982) did not remain exemplary. The general explanation for this is that these companies failed to change with the times – perhaps the very strength of their culture and their past success prevented them from quickly and successfully adapting to new environmental requirements (Christensen 1997). This paradox suggested the need for more longitudinal investigations of the effects of organizational culture. Growing evidence that excellent companies do not remain excellent for long also suggests that the traditional notion of a strong culture may need to be replaced with a more discerning understanding of the types and role of culture and the need to change culture over the life cycle of the organization. For example, perhaps a strong consistent culture is useful in the beginning start-up phase of an organization but a mature organization may need to become more differentiated as well as more oriented to change and learning. What is important for long-term organizational success may not be a particular type of organizational culture per se but the ability to effectively manage and change the culture over time to adjust to changes in the situation and needs of the organization. This understanding has pointed to the need for a more dynamic understanding of culture and the role of organizational leaders in ensuring that the culture contributes both to the organization's current and future success.

Schein (1992) argues that leadership today is essentially the creation, the management, and at times the destruction and reconstruction of culture. In fact, he says, “the only thing of importance that leaders do is create and manage culture” and “the unique talent of leaders is their ability to understand and work within culture” (1992:5). Leaders must be able to assess how well the culture is performing and when and how it needs to be changed. Assessing and improving organizational culture as well as determining when major cultural transformations are necessary is critical to long-term organizational success. Managing differentiated cultures and creating synergies across these cultures is also a critical leadership challenge. Effective culture management is also necessary to ensure that major strategic and organizational changes will succeed. Basically, culture management is a key leadership and management competency.

We are all aware of successful leaders (Herb Kellerher of Southwest Airlines, Lee Iacocca of Chrysler, Alfred P. Sloan of G.E., General Robert E. Wood of Sears, Roebuck & Co.) who have succeeded in transforming the culture of the organization. In addition, a study of U.S. presidents found that charismatic presidents had better performance on a variety of dimensions, including economic and social performance (House, Spangler, and Woycke 1991).² However, effective cultural management does not depend on great individual leaders and charisma. Charisma may be an advantage in times of crisis and change, but solid instrumental leadership can be as, or more, effective in more normal circumstances (Collins and Porras 1994:7-8). Critical instrumental mechanisms for changing and managing culture include

- ◆ Strategic planning and the identification of necessarily cultural requisites (see Chapter 3. “Strategy”)
- ◆ Ensuring consistency of culture with mission, goals, strategies, structures and processes
- ◆ Creating formal statements of organizational philosophy and values

² Charismatic leaders were not more effective in international relation, however, indicating that charisma may be more effective at home the abroad and/or that international relations may involve more factors outside of presidential control.

- ◆ Establishing consistent incentives, recognition systems, and performance measurement (see Chapter 6. “Performance Assessment of Publicly Funded Science”)
- ◆ Maintaining appropriate error-detection and accountability systems (Schein 1999)
- ◆ Coaching, mentoring, informal and formal training, and identifying role models (Schein 1999)
- ◆ Embracing appropriate rites, rituals, symbols, and narratives (Schein 1999)
- ◆ Taking advantage of the growth of subcultures (Schein 1999)
- ◆ Managing and promoting strong communities of practice (Wenger and Snyder 2000, also see Chapter 5. “Knowledge Management”).

Emerging Cultural Mandates

Schein (1992) notes several requisites for organizational success that organizational culture must now take into account:

- ◆ The organization must be proactive, not just reactive.
- ◆ The organization must influence and manage the environment, not just adapt.
- ◆ The organization must be pragmatic, not idealistic.
- ◆ The organization must be future-oriented, not predominantly present/past oriented.
- ◆ The organization must embrace diversity, not uniformity.
- ◆ The organization must be relationship-oriented, not just task-oriented.
- ◆ The organization must embrace external connectivity, as well as promote internal integration.

These fundamental assumptions are key to eliminating obstacles that will inhibit the kinds of internal and external organizational adaptations necessary for future success. They are not, however, sufficient. They must be reinforced by values, behavioral norms and patterns, artifacts and symbols, as well as accompanied by a particular mission, set of goals, and strategies.

Others emphasize more specific cultural mandates, such as that the modern organizational culture must be:

- ◆ Team-oriented (Sherriton and Stern 1997)
- ◆ Knowledge and learning oriented (see Chapter 5)
- ◆ Alliance and partnership oriented (see Chapter 9).

Another emerging mandate is to

- ◆ Know when to emphasize and how to balance cultural maintenance and cultural innovation (Trice and Beyer 1991; Collins and Porras 1994).

Managers must actively work to keep the existing organization culture relevant to the present and future while maintaining some sense of continuity with the past. Collins and Porras (1994) found that companies with long-term success had a limited but strong set of timeless core values that did not prevent organizational change over time. These companies were able to preserve the core while stimulating progress.

Cultural Change

Cultural change typically refers to radical versus limited change. It is not easy to achieve; it is a difficult, complicated, demanding effort that can take several years to accomplish. There are three basic types of cultural change (Trice and Beyer 1991):

- ◆ Revolutionary and comprehensive efforts to change the culture of the entire organization
- ◆ Efforts that are gradual and incremental but nevertheless are designed to cumulate so as to produce a comprehensive reshaping of the entire organizational culture
- ◆ Efforts confined to radically change specific subcultures or cultural components of the overall differentiated culture.

Strategies for effecting cultural change include (Schein 1999):

- ◆ Unfreezing the old culture and creating motivation to change
- ◆ Capitalizing on propitious moments—problems, opportunities, changed circumstances, and/or accumulated excesses or deficiencies of the past
- ◆ Making the change target concrete and clear
- ◆ Maintaining some continuity with the past
- ◆ Creating psychological safety through a compelling positive vision, formal training, informal training of relevant groups and teams, providing coaches and positive role models, employee involvement and opportunities for input and feedback, support groups, and addressing fears and losses head on
- ◆ Selecting, modifying, and creating appropriate cultural forms, behaviors, artifacts, and socialization tactics
- ◆ Cultivating charismatic leaders
- ◆ Having a realistic and solid transition plan
- ◆ Exercising risk management by understanding and addressing the risks and the benefits as well as the potential inequitable distribution of these risks and benefits.

The Application of Organizational Culture to Public Science Management

In understanding the role of organizational culture in achieving the desired changes in public science management, the various public science organizations will need to understand not only their internal culture but the cultural attributes best suited to promoting desired behaviors on the part of the science system as a whole. An important role for public science management is to help define and bring about the cultural orientations that will provide the context and promote the behaviors, values, and relationships that foster effective science, including scientific collaborations. This literature suggests it would be worthwhile to (1) identify how science funding and directing organizations could promote appropriate cultural orientations and a favorable cultural environment for publicly funded science organizations (laboratories, universities, and private R&D centers) and (2) determine the cultural orientations and cultural environment needed within the funding and directing organizations to make this happen. In organizations responsible for both science and national security, such as the US Departments of Energy and Defense, a significant challenge is to balance the cultural requirements of creativity and collaboration with those of regulatory compliance and the protection of classified information. Relevant questions for managers of publicly funded science include:

1. Have the goals and strategies for effecting effective and efficient scientific development changed over time?
2. What culture attributes are necessary to help achieve the goals and strategies on the part of publicly funded science organizations (public and private laboratories, universities, R&D centers, etc.) as well as the goals and strategies necessary to achieve effective and efficient scientific development for the system as a whole? Is there potential conflict between these two sets of goals and strategies? How could this conflict be addressed?
3. How can public science funding and directing organizations (such as the National Science Foundation, the DOE Office of Science, etc.) contribute to bringing about desired cultural attributes in these publicly funded science organizations? What are the obstacles to doing this?
4. Will the culture (and perhaps goals, strategies, structures, and practices) of public science funding and directing organizations need to change in order to for them to be successful in effecting desired change within the publicly funded science organizations? If so, what changes may be necessary?
5. How can desired cultural (as well as strategy, structure, and practice) changes be identified by and promoted within the many public science funding and directing organizations? Will this require a collaborative effort among these organizations? If so, how can this collaboration be encouraged? What are the obstacles to successful cultural change?

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