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A framework analysis of the Action Plan for Import Safety (APIS)

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ABSTRACT

This study presents an analysis of the Action Plan for Import Safety (APIS) presented to the President of the United States to establish public policy to address the record number of foreign safety product recalls that occurred in 2007. In the US, there were 473 recalls of more than 100 million products in 2007, most of which involved Chinese manufacturers. A conceptual framework is presented that outlines the critical elements that must exist in quality management efforts that involve contractual agreements similar to those involving Chinese manufacturers. The framework is used to identify the points of intersection between the APIS and recent findings in quality management research and to delineate the overall strengths and weaknesses of the APIS.

Key Words: Action Plan for Import Safety, China recalls, Conceptual Framework for Quality-Management

INTRODUCTION

In 2007, in what the press referred to as "the year of China recalls", the Consumer Product Safety Commission recalled over 110 million Chinese products, the largest recall effort in recent history (Goodden, 2008). Recall efforts were not only focused on consumer products such as toys, but involved a wide range of other controversial and emotionally charged consumables such as foods and medicines (Field, 2008; Brockwell, 2008). The problem gained heightened public attention and resulted in calls for action at the federal level. In reaction to the crises, a multiple-agency federal working group was formed. Headed by Secretary of Human Services, the working group developed an action plan to implement policy and programs to address the issue. The working group presented their report to the President of the United States in November 2007 which outlines 14 major recommendations and 50 action steps to protect consumers from unsafe imported goods while continuing to encourage a prosperous global market economy (Action Plan for Import Safety, 2007). The report to the President was titled "Action Plan for Import Safety" (APIS). The complexity of the import safety problem is broad and encompassing and includes 13 major government agencies, food and drug administration, and various protection commissions. It also involved coordination and agreements with foreign nations, with special focus on China; $2 trillion in annual imports; 800,000 importers; countless manufacturers; and 300 ports-of-entry (Action Plan for Import Safety). The economic and safety impact is of such a magnitude that the implementation of responsible public policy is and should be a matter of careful scrutiny and testing.

The relative newness of the import safety problem addressed herein has resulted in a gap in research literature that will be addressed by this paper. A conceptual framework that presents the eight critical elements required to support quality management decision making – programs, measurement, contracts, decision support, continuous improvement, partnering, knowledge sharing, and multi-perspective viewpoint (Shehane, 2007) is utilized. The framework, called "Q8", was developed from research work addressing complex quality management problems such as product safety where the use of contractual agreements for the production of goods and services involves multiple perspectives of resolution that covers the field of law, contracting, technology, functional domains, multiple organizations, social, political, economic, ethical, and multilayered communication requirements (Shehane, 2007). Within each of the critical elements, the framework provides three layers of increasing definition of the various considerations that make up each of the eight critical elements. The Q8 framework is unique in research literature and is the only known framework to fill the void in research literature concerning the key concepts required for quality management in outsourced environments such as importing (Dean & Kiu, 2002; Kang & James, 2004; Lemak & Reed, 2000; Lundsgaard, 2002; Shehane, 2007; Silvestro, 1998; Sundarraj, 2004). The framework provides an overarching structure for making appropriate quality management choices concerning safety such as establishing quality management programs, policy, and support systems. The framework reveals the dimensions, dynamics, relationships, and principles that must be considered to support effective quality management efforts such as those involved in setting import safety policy and action initiatives.

The research question addressed in this paper is how well does the APIS match what is known in recent research findings on quality management in terms of completeness and approach? To answer this question, a comparative analysis will be made between the contents of the APIS and the Q8 framework of quality management. In addition, a follow-up review of the Import Safety – Action Plan Update (APUS) will be made to further validate the intentions of

APIS and ensure fairness in the analysis of APIS (Import Safety – Action Plan Update, 2008). Specific areas of interest are how completely the APIS provides coverage of the eight critical elements needed to support effective quality management decision making, which specific considerations and approaches specified in the eight critical elements are addressed by the APIS, and the overall strengths and weaknesses revealed by the comparison between APIS and the framework. The framework will also be used to develop greater insights into the complexities that must be considered in facing this major challenge.

The study capitalizes on the latest research findings in the quality management of contracted products and services and will tie this knowledge domain into the area of public policy analysis and development. The application of this cross-discipline approach will serve to expand the knowledge and research efforts in both fields and the interrelationship between them.

The remainder of this paper is organized as follows. The outline of the APIS and its development are introduced. Then a short presentation of the Q8 framework and its key elements are conducted. Following this the results of the comparative analysis of APIS using the Q8 framework supplemented by APU where applicable, are presented. The analysis will show both shortfalls and strengths in the U.S. governments approach to APIS and will reveal areas where the Q8 framework may be expanded in its applicability to public policy type problems. Finally a summary and discussion of future research implications in the study of US and China's supply chain quality issues are concluded.

ACTION PLAN

The APIS is organized around three key principles – prevention, intervention, and response. It is focused on the continual improvement of imported goods and emphasizes the importance of public-private collaboration and shared interests in improving import safety (Action Plan for Import Safety, 2007). The federal working group that developed APIS set a goal to depart from typical government approaches of "inspection/rejection" and to focus on a more cost-effective approach that involved identifying risk at points in the import chain that were likely to occur. This risk-based approach is a departure from typical government programs that depend upon an "inspection/rejection" philosophy that can be both costly and ineffective in zeroing in on high risk areas. The APIS contained the following 14 major recommendations: (1) Create New and Strengthen existing Safety Standards, (2) Verify compliance through Certification, (3) Promote Good Importer Practices, (4). Strengthen Penalties and Enforcement Actions, (5) Foreign Collaboration on Safety, (6) Establish Common Mission across Federal Government Agencies, (7) Interoperability for Exchange of Import Data, (8) Create Import-Safety Information Network, (9) Expand Lab Capacity and Develop Rapid Testing Methods, (10) Strengthen Intellectual Property Protection, (11) Maximized Effectives of Product Recalls, (12) Maximize Federal-State Rapid Response and Collaboration, (13) Expedite Consumer Notification of Product Recalls, and (14) Expand Track-and-Trace Technologies (Action Plan for Import Safety). The comparative analysis method used in this study will involve a cross-matrix comparison of each recommendation as compared to relevant requirements of the Q8 framework.

Q8 FRAMEWORK

Figure 1 shows the progressive relationship between the eight core requirements for quality management decision support through the main themes of the core requirements to an

outer layer of tools and approaches that typically support the main themes of the quality management decision making. An analysis of quality management and decision support research literature resulted in the development of the framework and provided a discussion of a rich array of the core requirements and supporting tools for knowledge-aware contract quality-management issues (Shehane, 2007). Although specifically directed to service quality in contract environments, the Q8 conceptual framework serves as a model of the most basic concepts that quality management efforts should address and as such serves as a basis for comparison.

A FRAMEWORK ANALYSIS

The following presents the results of the comparative analysis of APIS using the Q8 framework. The analysis highlights the shortfalls and strengths of the APIS recommendations in terms of quality management core principles. The analysis also provides an indication of the current Q8 framework suitability for analyzing public policy type scenarios involving quality issues.

Quality Management Program

A quality management program is a formalized approach to quality management that defines quality goals, quality monitoring approaches, measurement approaches, and an overall paradigm to be used in managing quality (Beckford, 2002; Juran, Godfrey, Hoogstoel, & Schilling, 1999; Montgomery, 2005; Oakland, 2003). Examples of quality management programs are SPC, ISO 9000, ANSI Z1.4-1993 (formally MIL STD), Six Sigma, TQC, and TQM. (Beckford; Juran et al.; Montgomery; Oakland).

Comparative analysis for quality management programs is listed in Table 1. There was no specific quality management program specified in the APIS. This could be anticipated since public policy at the international level focuses more on broader strategic initiatives rather specific quality programs. However, the APIS did place emphasis on certification programs in recommendations 1 and 2, which typically involve the selection and application of specific quality programs.

Acceptable quality levels are typically used in inspection programs to specify the percent of a product shipment or lot that can fail to meet standards and yet the lot or shipment still be accepted. The use of acceptable quality levels was specified in Recommendation 4 in the area of enforcement and penalties, and was also mentioned in Recommendation 11 in the area of effectiveness of recalls. The application of acceptable quality levels serves in an effective supportive role for these two recommendations since both recall efforts and enforcement actions rely upon some definitive standard of what is acceptable. Although addressed in only two areas, the coverage is adequately placed in the two most relevant areas of the APIS recommendations.

The APIS provided extensive coverage concerning the use of monitoring and inspection programs to detect import quality problems. The APIS took a risk-based approach to selecting imported goods to inspect rather than relying on previous shotgun approaches applied to a broad spectrum of imported products. Risk-based monitoring was a guiding principle behind the APIS to ensure efficient use of limited inspection resources for products with the highest implications on safety. The limited level of inspection resources can be best illustrated by the FDA's inspection effort which is currently less than 1% of food products coming into the U.S (Roth, Tsay, Pullman, & Gray, 2008).

One area of failure in the APIS was the lack of a plan for customer feedback. The import supply chain is complex and involves many individual elements that may serve the role of customer at different points in the entire process (Handfield & McCormack, 2005). Original product manufacturers are customers of parts suppliers. Intermediate product manufacturers are customers of original product manufacturers. Importers and distributers are customers of manufacturers. Finally, there is the consumer, who is the ultimate customer. The APIS addressed the collection of import safety information at the importer level, but failed to address the importance of feedback from the ultimate customer, the consumer, and the many customers in the middle of the supply chain. This failure to address the customer complexity of the supply chain leaves gaps in data collection and feedback.

Quality Measures

A survey of North American countries indicates that one of the greatest obstacles related to outsourcing is in developing measures for contract performance and product quality (Brown & Wilson, 2005). Without appropriate quality measures and some means of monitoring the quality of those services, quality cannot be adequately assessed. Quality measures are essential to managing quality and are recommended by the preponderance of quality expert in research literature (Blose & Tankersley, 2004; Brown & Wilson; Dean & Kiu, 2002; Domberger, 1998; Duening & Click, 2005; Fitzsimmons & Fitzsimmons, 2004). There are several types of measures addressed in research literature. The types of measures mentioned most in literature are input measures, output measures, and customer feedback (Blose & Tankersley; Brown & Wilson; Dean & Kiu; Domberger; Duening & Click; Fitzsimmons & Fitzsimmons). Output measures are quantifiable measures of the outcome of a production process. Input measures are task based and involve specifying that a contractor perform tasks in specified ways and/or meet certain accreditation requirements (Domberger). Customer feedback measures are based on the perception of quality provided by users of a product.

Comparative analysis for quality measures is listed in Table 2. The APIS coverage of quality measures was adequate and compared well with Q8 in the area of measure types addressed. APIS addressed the need for measurements and emphasized the need to strengthen measurements in recommendations 1 through 3. Both input and output measures were emphasized. Input measures were addressed in terms of using industry best practice to assess quality. However, a noticeable weakness of APIS was that customer feedback measures were ignored in the recommendations. This missing element coincided with the general shortfall of APIS in addressing the customer at any level of the import supply chain.

The APIS addressed using risk to identify areas to measure, but not risk sharing among participants in the import process. A critical element of an outsourcing relationship is the mutual determination of how much ownership and risk each party is willing to assume (Corbett, 2004; Domberger, 1998). If a product provider assumes too much of the risk of an operation and is not properly rewarded, then the relationship will suffer over time; and the provider will tend to take shortcuts and be less flexible in their reaction to changing requirements (Corbett; Domberger). Based on the importance of appropriate risk sharing, it would seem that APIS should provide some means of identifying and bringing risk sharing inequities into focus.

APIS did not address weighting of import quality measures (Adam, Fahy, & Murphy, 1998; Dean & Kiu; Duening & Click; Gunasekaran, Patel, & McGaughey, 2004). The application of weights or ranking measures provides a means of ranking preferences and

priorities. This approach could be of use to the government in ranking and applying discriminating emphasis to the quality measures used and could add another dimension to the overall risk-based approach recommended in APIS.

The APIS failed to address contract requirements, which serve as the basis for the development of quality measure in outsourcing ventures such as importing. This will be discussed further in the next section.

Contract

An essential part of the quality management of contracts is the existence of formal contract terms and requirements that specify the quality standards to be achieved (Corbett, 2004; Dean & Kiu, 2002; Domberger, 1998; Duening & Click, 2005; Federal Acquisition Regulation, 2006). Contracts can be expressed in both classical form and relational terms (Corbett; Domberger; Duening & Click; Federal Acquisition Regulation, 2008). Quality management situations, such as imported goods, involve many contractual and governmental agreements that make it imperative that the contracting perspective be considered (Fremlin, 2008).

Comparative analysis for contracting is listed in Table 3. The concept of contracting was inexplicably absent from APIS, although the very essence of the import business involves contract relationships and is considered an essential element of success (Fremlin,2008; Handfield & McCormack, 2005; Jin, E., & Lucy, G., 2008). A viable contract begins with setting forth the type of contract that best matches the requirement. To this is set forth the contractual requirements in classical contracting terms with their associated quality standards. The contract lays out legal quality standards and specifies the legal recourse available to each party when standards are not met. In addition a well designed contract sets forth the requirements of the relationship that is to exist between the contractor and purchaser and how much responsibility, risk, and sharing each will provide. The absence of any contractual reference in APIS is even more surprising when one considers that the federal government has substantial expertise and organizational prowess in the area of contracting. This expertise could be used to establish standards or develop best practices to improve the effectiveness of import contracting instruments that could help ensure import quality (Corbett; Federal Acquisition Regulation; Fremlin).

The only area of contracting adequately expressed, when compared to Q8 requirements, was the use of incentives and penalties to encourage improved performance. However, the approach taken in APIS emphasized penalties over incentives. One of the exceptions was Recommendation 2 in which the APIS proposed that incentives be offered to foreign producers that volunteered for certification programs. The nature of the incentive offered was to permit certified producers quicker entry of their products at ports and faster processing of laboratory results. The APIS pointed out that this approach offered two advantages - it would facilitate trade and permit the government to focus inspection resources on riskier companies that were not certified.

Recommendation 4 was totally focused on penalties and stronger enforcement actions, and Recommendation 11 focused on legal penalties related to recalled goods. Research literature supports the need for the application of both incentives and penalties to adequately support quality improvement efforts, especially in contractual relationships involved in importing. A contractor assumes the performance of the services for a profit and incentives that reward for exceeding standards (Dean & Kiu, 2002; Domberger, 1998; Duening & Click, 2005;

Lundsgaard, 2002). The penalties recommended in APIS come in the form of forfeiture of property, civil penalties, refusal of admission of imports, and destruction of products where certain safety standards were not followed.

Decision Support

Decision support and decision support tools are a critical requirement when dealing with large and complex quality issues – especially those involving multiple layers of supply such as importing (Eom et al., 1998; Holsapple & Whinston, 1996; O'Donnell & David, 2000; Raghunathan, 1999; Turban et al.; 2005). Considering both the enormity and complex nature of the international trade process, one would expect that decision support tools and systems would be addressed in some form in a public policy forum.

Comparative analysis for decision support is listed in Table 4. The APIS was essentially silent concerning the need for decision support. In fact, the basics of decision analysis were not considered in the problem formulation or framework of APIS. The problem formulation in APIS was void of consideration of decision goals, decision strategy, or decision types involved in import safety. As can be seen in the analysis above, decision support requirements were addressed in only a very basic manner. The APIS recommended informational type reports and systems rather than addressing decision tools that can best assist quality management efforts. One especially glaring weakness is the lack of any causal analysis tools which provide government officials with a means of following recurring problem areas, summarizing and reporting causes in formats which highlight causes of problems and support risk analysis, which is a basic principle of the APIS.

Holsapple and Whinston, (1996) discussed types of support that may be provided to decision-makers. The types of support provided varied based on the characteristics of the decision-making situation: decision context, basic decision type, and the decision-maker (Holsapple & Whinston). The following types of decision support should have been considered for the import quality issues addressed by APIS: problem identification and alert tools; tools that enable or extend user's capability to process and use knowledge; tools that provide advice, evaluations, and analysis; tools that enhance the user's perspective; and tools that improve interactions and communication among participants. In addition, the inclusion of decision tools and aids that assist in assessing incentives, penalties, and quality decisions are of utmost importance in managing and improving import quality (Federal Acquisition Regulation, 2008; Neely, 1999; Duening & Click, 2005).

Continuous Improvement

A basic concept of most quality management efforts is the idea of continually improving quality in a systematic and strategic manner (Beckford, 2002; Crosby, 1984; Deming, 1994; Feigenbaum, 1983; Ishikawa, 1985; Juran et al., 1999; Montgomery, 2005). Continuous improvement consists of an organization's efforts to encourage a climate that focuses on constantly improving the process to achieve quality. Silvestro (1998) indicated that this concept is more entrenched in manufacturing quality literature with the application of long standing scientific management concepts in manufacturing.

Comparative analysis for continuous improvement is listed in Table 5. The APIS offered extensive coverage of the many aspects of the important concept of continuous improvement.

One especially strong point of the APIS was its emphasis on empowering government agencies. Examples of empowering actions recommended in APIS include increasing the consumer product safety commissions reach through mandatory certification programs, providing the FDA with additional authority to prevent contaminations, additional authorizations and laws to strengthen agencies, and most importantly permitting cross-agency use of resources in addressing unsafe products.

One distinguishing aspect of the continuous improvement focus of the APIS was the process design orientation taken in developing the recommendations. An important aspect of continually improving quality is to focus on the processes involved in producing the product (Feigenbaum; Ishikawa; Juran). An example of this was Recommendation 5 focus on "streamlining bureaucratic processes" and reviewing overseas programs for improvements. An even more impressive example of the process focus of the APIS was in Recommendation 6 where the development of "uniform interdepartmental procedures" for controlling and clearing shipments was recommended. Another indicator of the APIS process design focus was represented in the introductory remarks of Recommendation 8 where the APIS addresses the many critical points in the import process from the manufacturer, to the country of export, to the carrier, and finally to the importer.

Of lesser note to the consideration of continuous improvement was APIS's inclusion of the concept in the measurement, monitoring, and reporting elements. Examples of the concept of continuous improvement being applied to these areas included the enhancement of exchange of data throughout the import process in Recommendations 7 and 9.

Partnering

Partnering on contracts and agreements is a relatively recent term in research literature that represents an agreement between a contractor and buyer to openly share information and to work together toward common goals rather than being adversarial (Corbett, 2004; Domberger, 1998; Gunasekaran et al., 2004; Oakland, 2003; Webb & Laborde, 2005; Youngdahl & Kellogg, 1997).

Comparative analysis for partnering is listed in Table 6. The APIS verbally espouses partnering and sharing throughout its structure. However, the emphasis and approach of the government is somewhat different than that of the Q8 framework. Although the APIS expresses the tenant of "shared interest" between public and private-sectors and discusses sharing and collaboration between the sectors; it falls short in fully partnering with the private-sector and importing community. Rather than emphasizing the complete principles of partnering and sharing, the APIS represents a form of partnering that is more "one-way" than "share" in its approach. As a result, the APIS fails to take full advantage of the "significant interest" that private industry has in producing safe products. Instead, APIS leaves a mixture of strengths and weaknesses associated in the area of partnering. This overall weakness continues to be evident in the Action Plan Update (APU) (Import Safety – Action Plan Update, 2008). The APU highlighted both government and private sector successes. However, a review of the successes still reveals the absence of a two-way working relationship. Instead, the APU touted successes that were either governmental or private-sector but did not reflect the "symbiotic approach" espoused in the APU.

The APIS appears to be strong in the area of collaboration across all sectors of government, foreign entities, and the private import sector. Recommendations 2 and 3 propose

collaboration with the import communities to implement voluntary certification programs. Recommendation 3 addresses collaborating with the import community on developing good importer practices. Recommendation 5 proposes collaborating with foreign governments on streamlining and developing cooperative investigation and enforcement. Recommendation 6 presents the need for improved collaboration between government agencies. Recommendation 9 enhances laboratory capacity and proposes collaboration with public and private sectors to develop analytical approaches for rapid testing. Recommendation 12 recommends optimizing federal and state collaboration on local point-of-sale actions related to safety recall efforts.

In the area of information sharing, the APIS offers mixed results in terms of applying the full partnering concept. Under the partnering concept, all parties actively share information and quality assessments with the belief that this will promote improved overall performance by both parties (Corbett, 2004; Oakland, 2003). The underlying principle is two-way sharing of information. The APIS appears to fall short in its sharing activities with the private sector and import community. Recommendation 7 proposes sharing data from the import community with the federal government. However, this appears to be a one-way sharing arrangement in favor of the federal government. This is understandable, given the enforcement nature of government policies, but it fails to take advantage of the financial and marketing incentive that an importer and others in the import business have at stake in producing safe products. This same failing to incorporate private sector motivations for import safety also plagues Recommendations 7 and 8. Recommendation 7 proposes to interchange and share data between federal agencies and the import community that will assist in identifying risk and making enforcement determinations. However, a closer reading of the recommendation indicates a one-way sharing relationship. Recommendation 8 proposes to share the importing community's recommendations and best practices and product information with other federal departments and agencies for import safety and security reasons. This also appears to be one-way and not a partnering principle of full sharing. More thought needs to be applied to APIS to fully incorporate sharing and the use of information by the private-sector as well as the public sector in a positive and motivating way.

The APIS fully applies the principle of sharing with foreign governments. Recommendation 5 proposes the development of information sharing arrangements with key foreign governments. The APIS also provides for acceptance of foreign laboratory findings. Recommendation 6, 7, 8, and 10 propose full sharing of import and counterfeit information among government agencies. Recommendation 12 implements a full sharing relationship with state governments of point-of-sale transactions.

Risk distribution is critical to effective partnering efforts, but is not addressed in APIS. Effective relationships require an equitable allocation of risks between the provider and buyer. The allocation of risk should be based on the amount of control that the provider has over the process involved. With greater control comes a greater assignment of risk. When the assignment of risk is out-of-balance in favor of the buyer, the partnering relationship suffers and providers fail to fulfill their obligations.

A means of problem escalation is an important aspect of partnering. APIS did not address this concept in areas where it may be applicable – between government and importers, or manufacturers, or countries. Duening and Click (2005) discussed that there should be a systematic approach to both problem identification and problem resolution. Duening and Click recommended a proactive manner of approaching problems before they surface. Dispute resolution mechanisms are required to accommodate the more formal terms of the classical agreement that specify formal mechanisms for resolving conflicts and agreement failures

(Corbett; Duening & Click; Webb & Laborde, 2005). Dispute resolution processes should also be supportive of the less formal alternative dispute resolution of relational agreements. Partnering should include procedures that define the process by which unresolved problems of varying degrees of severity should be escalated within the management structure (Corbett, 2004; Oakland, 2003). The escalation and resolution process should be in writing and agreed to by all parties so that all know the process and their roles (Corbett). When an escalation process is not included in partnering or contractual agreements, parties tend to assign blame rather than trying to resolve problems (Corbett)

The need for buyer/provider needs and teams was only partially addressed by APIS with Recommendation 13. The APIS addresses the need for the consumer (buyer/provider needs) to have information concerning product safety in Recommendation 13. However, the APIS addressed providing recall information on a one-way basis to consumers and failed to assess the need for two-way sharing.

Knowledge Management and Sharing

Numerous research works expound upon the advantages of knowledge management and sharing in complex decision support situations such as quality management operating in complex environments (Baiman et al., 2000; Bose, 2003; Corbett, 2004; Dean &Kiu, 2002; Duening & Click, 2005; Fitzsimmons & Fitzsimmons, 2004; Greaver, 1999; Oakland, 2003). Knowledge as used in this report is more than information. It is information that has context, relevance, and can be acted upon (Turban, Aronson, & Liang, 2005).

For the purposes of this paper, knowledge management is defined as the processing, representation, and reuse of an organization's aggregated expertise in such a manner that it provides value to the organization and its entities (Holsapple, 2001). Knowledge sharing refers to the transference of knowledge from one entity to another (Shehane, 2005). Holsapple (2001) observed that decision support processes and knowledge management are "intrinsically linked" and argued that decision making is driven by knowledge processes. Courtney (2001) also stressed and demonstrated the need to incorporate knowledge management principles into decision processes. As a result, any study involving decision support mechanisms as complex as those involved in quality management should include knowledge management and its supporting mechanism, knowledge sharing.

Comparative analysis for knowledge management and sharing is listed in Table 7. The concepts of knowledge management and knowledge sharing are well represented in APIS in several key areas. Organizational sharing was stressed in Recommendation 6 as an effort to "harmonize" government procedures among different agencies. Recommendation 6 also emphasized the need for sharing among government agencies by improving coordination, uniformity, and common protocols among the various agencies involved in import safety. However, although there was mention of information sharing at a basic level, the concept of organizational sharing and integration of knowledge was not set forth for the interaction between government and the private-sector.

The concept of buyer-provider sharing was addressed in Recommendations 11 and 13 in terms of product recall efforts. The most pronounced use of this concept was applied to Recommendation 13 in which the government not only proposed providing context specific information to buyers, but proposed voluntary exchange of point-of-sale information between consumers and government.

Another knowledge management and sharing aspect to consider in contract quality management is the need for early detection of quality defects in high risk products (Fitzsimmons & Fitzsimmons, 2004; Moody & Shanks, 2003). This principle is particularly applicable to areas such a food, drugs, and toys where risk of injury and public visibility is very high (Goh & Tay, 1995; Hart, 1997; Li, & Benton, 2003; Zografos, Vasilakis, & Giannouli, 2000). Under these circumstances it is important that the knowledge concerning a defect be shared quickly so that corrective action can be effectively taken (Greaver, 1999). Early detection was one of the concepts frequently addressed in the APIS and covered the critical areas where early detection is most useful in protecting the public. Recommendation 6 suggested a plan for rapid response to safety problems when they occur, while Recommendation 9 addresses rapid test methods to more quickly surface quality issues. Recommendation 11 addressed agencies' abilities to provide quick response in follow-up recalls of faulty products.

Another aspect of knowledge sharing that must be considered for quality management in outsourcing environments is the need to establish some means for the security of data, information, and knowledge that will or will not be shared (Duening & Click, 2005; Webb & Laborde, 2005). Duening and Click pointed out that security considerations should include: what proprietary and procurement sensitive data will be shared between parties, how the data will be protected, what means will be used to ensure against data corruption, what will be data backup arrangements, and how security breaches will be handled. Recommendation 8 addressed the issue of what knowledge would be shared and the Recommendation even recognized this as a mutual decision between the government and importer community. Although still somewhat a "one-way" sharing situation, Recommendation 8 addresses the security concept in a manner very similar to Q8 because it is part of a mutual decision between the government and importer.

An interesting aspect of communicating tacit knowledge involves the concept of understanding. Desanctis and Mongue (1999) explained how physical and language "co-presence" are used by individuals in making inferences from each other's communication of knowledge. DeSanctis and Mongue pointed out how electronic communication can often interfere with the true conveyance of knowledge due to the lack of face-to-face contact and the inability to detect subtle meanings conveyed from this type of contact. This is an especially critical concept in quality management where expert and functional expertise may be shared face-to-face (Corbett, 2004; Dean & Kiu, 2002; Greaver, 1999; Hernandez, Ossowski, & Garcia-Serrano, 2001; Webb & Laborde, 2005). Since this is one of the more obscure concepts in knowledge management and sharing, it was not expected to be found at the strategic policy levels of APIS. However, APIS addressed this concept in two recommendations. Recommendation 5 included this concept where it stressed the need to establish field presence at key foreign ports and liaison presence with certain countries. Recommendation 6 recognized co-presence at an even more basic level with the proposal to co-locate border officials from multiple agencies to enhance decision making and targeting efforts.

Multi-Perspective Decision Paradigm

The multi-perspective decision paradigm is a relatively new concept that was discovered in research literature that appears to apply to quality management where many different viewpoints must be incorporated to arrive at optimal decisions (Cil, Alpturk, & Yazgan,., 2005; Courtney, 2001; Corbett, 2004; Dean & Kiu, 2002; Harland Knight, Lamming, & Walker, 2005; Webb & Laborde, 2005). The APIS was reviewed in terms of the different perspectives that were

considered in its development and the degree to which a multi-perspective approach was taken in formulating the problem being considered.

Comparative analysis for multi-perspective decision paradigm is listed in Table 8. APIS took a decidedly multi-perspective approach to developing import safety policy. Multi-perspective concepts and viewpoints were the most cited area of agreement between APIS and Q8. Having said that, APIS had one glaring omission; and that was its lack of consideration of the contracting viewpoint. This omission is especially obvious since the area of importing is founded upon the principles of outsourcing and contractual issues. It is difficult to surmise the cause of this omission, since there were no statements of explanation – just silence. It appears that the APIS authors just failed to see this. The government is well suited and staffed to address contract issues. There are major agencies in the federal government that are dedicated to developing and defining contractual matters (Corbett, 2004; Federal Acquisition Regulation, 2008). APIS could have addressed the elements that should be in contracts, or guidelines for them, or best practices that should be emphasized in producer/buyer relationships (Corbett, 2004; Federal Acquisition Regulation, 2008). Fremlin (2008) stressed that well written contracts are an essential element in helping to avoid the risks of importing from China. Per Fremlin, "a good contract sets legally required quality standards and the legal recourse that the US buyer has against the Chinese supplier if quality requirements are breached".

Some of the more interesting aspects of agreement between the APIS and Q8, which were gleaned from the analysis, are included in the following discussion. The Q8 framework did not specifically address "government" as a viewpoint, but included more generic and generalized descriptors which were meant to include multiple types of viewpoints related to problem areas. As part of this study it was found to be convenient to include "government" as a specific viewpoint category to represent the US government or the mention of government(s) and incorporation of their viewpoint in general. Some form of government viewpoint was incorporated in every APIS recommendation. Since APIS is a public policy statement involving multiple government agencies, this should not be surprising. In general the governmental viewpoints covered by APIS can be categorized in the following ways: clarifying or enhancing governmental authority; implementation or enhancement of laws and penalties; revisions to negotiation goals; directives to agencies to enhance their information networking capabilities; and optimization of federal- state collaboration.

The expert perspective was represented by the government's willing reliance on the expertise of independent certification programs and third party organizations to evaluate quality compliance. Another representation of the expert perspective was the government's acceptance of industry best practices. The final indication of the expert perspective was APIS recognition of needed contributions from the academic community to enhance import quality programs.

The remaining perspectives of functional input from the import community, technical innovation applications, and legal applications were somewhat expected. However, the number and extent of technical innovations mentioned in the APIS was commendable and ranged from the application of network and information systems to gather import data to sophisticated use of electronic track-and-trace technologies to identify points of production and distribution.

CONCLUSIONS AND RECOMMENDATIONS

The Q8 framework proved to be useful as a comparative tool for analyzing the APIS and delineating potential strengths and weakness in terms of quality management principles. The

comparative analysis revealed many similarities and a few key differences. Overall the APIS compared well with Q8 quality precepts.

One of the more significant points of agreement was where APIS not only addressed monitoring and inspection, but took a risk-based approach in identifying areas to monitor. The risk-based approach in combination with APIS reliance on third party certification programs offers the potential of not only improving the effectiveness of monitoring efforts, but could significantly optimize the use of limited government inspection resources. Another key area of agreement between APIS and Q8 was in applying the concept of continuous improvement to quality improvement efforts. The empowerment of government agencies to facilitate continuous improvement was a particularly prevalent concept put forth in the APIS recommendations. The concepts of knowledge management and sharing, and incorporation of multiple perspectives in addressing quality management were also well represented throughout APIS.

The areas of critical difference between APIS and Q8 need further study and consideration for future inclusion in the government's import-safety strategy. One of the major areas of difference involved the APIS exclusion of any recommendations concerning contracting. The basic structure of importing rests upon the principles of contracting between importing companies and foreign producers. Therefore, the omission of contracting from the APIS represents a serious flaw. A second major area of concern, coming from the APIS analysis, was its silence concerning quality management decision requirements and the need for decision support tools to support those decisions. One particularly obvious omission was the lack of any consideration of causal analysis tools to assist the government and the import community in identifying and isolating the causes of import-safety problems. The remaining major area of weakness in the APIS was in its espousal of the virtues of partnering and sharing between the government and private sector which it failed to follow. APIS's shortfall in meeting the partnering premise of two-way working relationships and the full sharing of information and knowledge is considered a flaw. APIS recognized the strong interest that the private-sector and import community had in resolving the import-safety problem, but did not go far enough in fully partnering with the private-sector and empowering them with a two-way working relationship.

Additional research is needed in the area of import-safety of products from China that will not only include further analysis of the quality management aspects of APIS, as addressed above, but that will incorporate the historical and cultural facets of China that may impact on efforts to improve the quality of imports. For example, there is evidence that China's cultural and historical background is not supportive of the "openness" involved in full partnering efforts (Zhao, Flynn, & Roth, 2007). In addition, there are findings that China's cultural views on safety are different than those in the U.S. culture (Roth, Tsay, Pullman, et al., 2008). None of the cultural and historical influences appear to be insurmountable, but they do need to be addressed. In addition, further study is needed to assess the role that U.S. industry needs to play in ensuring import-safety. One must ask the question as to what role weak engineering design played in the Mattel toy scare and what types of U.S. company inspections were employed to avoid lead paint content and other dangerous qualities in imported goods. There are examples that suggest the need for a greater portion of "sharing of the blame" on the U.S. companies part versus the Chinese (Field, 2008; Goodden, 2008).

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Figure 1. Conceptual Framework for Quality-Management. Note. From *Outsourcing Management – Implementing Quality and Performance Decision Support*, by R.F. Shehane, 2007. Saarbrücken, Germany: VDM Verlag Dr. Müller reproduced with permission.

Table 1. Quality Management Programs

Framework Elements	Action Plan Recommendations													
	1	2	3	4	5	6	7	8	9	10	11	12	13	14
Specific Programs Mentioned														
Acceptable Quality Levels				X							X			
Monitoring/Inspection		X		X		X	X	X	X					X
Formal Customer Feedback														
Certification and Recognition	X	X												

Table 2. Measurement

Framework Elements	Action Plan Recommendations													
	1	2	3	4	5	6	7	8	9	10	11	12	13	14
Contract Requirements														
Customer Feedback														
Input (Best Practices)	X	X	X											
Output	X													
Weighting (Risk Emphasis)														

Table 3. Contracting

Framework Elements	Action Plan Recommendations													
	1	2	3	4	5	6	7	8	9	10	11	12	13	14
Classical Terms														
Relational Terms														
Contract Type														
Incentives/Penalties		X		X							X			

Table 4. Decision Support

Framework Elements	Action Plan Recommendations													
	1	2	3	4	5	6	7	8	9	10	11	12	13	14
Decision Strategy														
Decision Support Goals														
Decision Types														
Graphical/Trend Analysis														
Reports						X	X	X			X			
Causal Analysis														X
Incentive Analysis														

Table 5. Continuous Improvement

Framework Elements	Action Plan Recommendations													
	1	2	3	4	5	6	7	8	9	10	11	12	13	14
Measurement	X													
Monitoring		X				X	X	X	X					X
Reporting										X			X	
Empowerment	X	X	X	X		X		X		X	X	X		
Process Design Focus	X				X	X	X	X	X		X	X	X	X

Table 6. Partnering

Framework Elements	Action Plan Recommendations													
	1	2	3	4	5	6	7	8	9	10	11	12	13	14
Sharing (info)			X		X	X	X	X	X	X		X	X	
Collaboration		X	X		X	X			X			X		
Risk Distribution (Risk Sharing)														
Partnering Agreement					X							X		
Buyer/Provider Teams														
Problem Escalation														
Buyer/Provider Needs													X	

Table 7. Knowledge Management/Sharing

Framework Elements	Action Plan Recommendations													
	1	2	3	4	5	6	7	8	9	10	11	12	13	14
Organizational Sharing						X								
Buyer-Provider Sharing											X		X	
Early Detection						X			X		X			
Security Information Sharing								X						
Co-Presence					X	X								

Table 8. Multi-perspective

Framework Elements	Action Plan Recommendations													
	1	2	3	4	5	6	7	8	9	10	11	12	13	14
Government	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Expert		X						X	X					
Functional	X	X	X	X			X	X		X	X		X	X
Technical							X	X	X				X	X
Legal				X	X		X	X		X	X			
Contracting														
Perspective Problem Formulation	X	X	X	X	X		X	X	X	X	X	X	X	X