

an effort to adjust to the changes of the contemporary financial audits. Consequently, it is easy to assume that the Greek CoA is a complex dynamic changing system affected by its environment, a fact that requires constant adjustment to the any moment current circumstances. The current traditional structure of the CoA is not fully compatible with the new audit circumstances. A new organization process-oriented, risk-based structure tailored to the new audit methodologies would give the court the advantage of providing qualitative audit services.

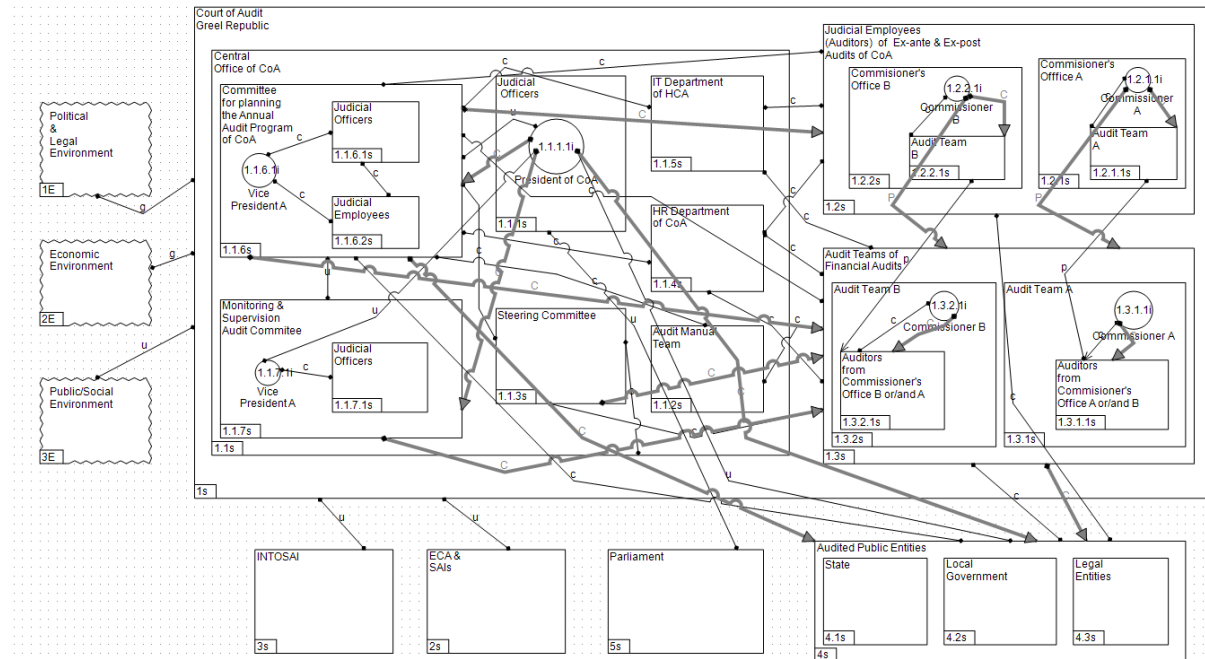


Figure 1. The CoA as viewed through the Design and Control Systemic Methodology (DCSYM)

5.4 Application of international standards & risk-based thinking for operational effectiveness

Most guidelines and standards published by prominent International Standards Organizations respond to the complexity that is embedded in any organization’s internal and external environments by embracing a process approach that relies on risk-based thinking. Ackoff (1971) defines a process as “a sequence of behavior that constitutes a system and has a goal-producing function”. Simply stated, a process may be defined as an integrated set of interrelated activities that uses resources to transform inputs into outputs. The quality of the transformation activity is dependent on the relationship that hold among the process variables (people, equipment, input material or information, methods, and energy), which interact in a given environment for the purpose of producing a desired output. The operational capability (performance) of a process depends on the manner in which the process variables interrelate and the manner in which they operate. A system is said to exist when a number of interconnected processes interact in such a manner that their input-output relationships constitute the operational utility within the overall purpose of the whole. That is to say, the output of a single process (or a set of processes) forms the input (or inputs) for another process (or set of processes), within the boundary of the defined whole, affecting the overall performance of the whole and being affected by the whole. It is important to stress here that the system is not the sum of the processes of which it is comprised, but rather the product of their interactions (Assimakopoulos & Varsos, 2015). Thus, through a process approach, a loose network of processes is turned into a coherent (integrated) system. A system of interrelated processes that is built on risk-based thinking within the context of a systems approach allows the organization to successfully apply systemic methodologies together with traditional

management tools for the purpose of achieving a level of effectiveness through fact-based decision making, which in turn gives the organization awareness of the long term consequences of actions taken or avoided (Varsos & Assimakopoulos, 2018).

Given the current level of complexity that is embedded in the CoA's operations (as illustrated through the DCSYM) the organization's management function will need to redefine the external and internal issues that are relevant to the organization's purpose and strategic direction, and augment its ability to achieve the intended result(s) of its stakeholders. For this purpose, a structured system will need to be developed through which management: (a) defines the systemic relations and interdependencies among the various subsystems (e.g., organizational functions, departments, functional teams, and the like) and the manner in which they interact so as to operate effectively as a structured functional whole (system); (b) identifies the information flows between these subsystems and recognizes their recurring patterns of behavior over time; (c) aligns its strategic priorities and tactical planning to the system's operational capabilities; and (d) develops and implements a monitoring and measurement scheme that will provide feedback relative to organization's overall performance requirements (objectives and goals).

The above can be accomplished through the implementation of a structured Quality Management System (QMS) that is designed consistent with the requirements of the ISO/IEC 17020:2012 international standard¹, and ISSAI 40 and ISSAI 1220². The QMS will serve as the organization's *Internal Rules of Procedure*, which will provide a coherent structure through which the CoA will control its key and enabling processes in a manner that assures conformance to legal and regulatory requirements and ensures the organization's uninterrupted capability to meet stakeholder expectations. Moreover, the QMS will provide a framework to the CoA to align its practices to both national and European benchmarks, and a systemic means through which to introduce corrective and/or preventive action in the event that stakeholder requirements are, for whatever reason, compromised. Moreover, the QMS will afford the CoA a coherent structure with which to: (a) demonstrate its impartiality and independence, (b) reinforce its structural requirements concerning its administrative and organizational and management processes, (c) provide adequate control of its resources (including personnel, facilities and equipment, and subcontractors), and (d) refine its audit activities (throughout their life-cycle), and standardize its complaint and appeals processes. Finally, the QMS will provide the structured mechanisms that will afford the CoA the operational agility to respond effectively to the complexity in its environment and to contribute to the economic and/or societal ecosystem of which it is an integral part. The section that follows makes use of a causal loop diagram to aid in visualizing how different variables in the proposed system are interrelated.

5.1. The CoA Viewed Through System Dynamics

System dynamics is a methodology and mathematical modelling technique developed by Jay Forrester of the MIT Sloan School of Management in the mid-1950s with the establishment of the MIT system dynamics group (Forrester, 1958, 1961). System dynamics has been successfully used to understand the dynamic behavior of complex systems. It uses information feedback and time delays that affect the behavior of a system as a means of evaluating business and other organizational and social contexts. A system dynamics approach places emphasis on structure and the processes within that structure which are responsible for the system's dynamic behavior. "Structure" within systems theory relates to the relationship between parts, elements, or variables within the system. These parts, elements or variables

¹ The ISO/IEC 17020:2012 international standard is published by the International Organization of Standardization and specifies requirements for the competence of bodies performing inspection and for the impartiality and consistency of their inspection activities.

²ISSAI 40 is published by the International Organization of Supreme Audit Institutions and deals with Quality Control for SAIs (assists SAIs to establish and maintain a system of quality control which is appropriate to their mandate and circumstances), while ISSAI 1220 is practice Note provides supplementary guidance on ISA 220 – Quality Control for an Audit of Financial Statement.

may be physical or abstract or both, depending on the nature of the system that dominates decision-making (Assimakopoulos & Varsos, 2015). Through the use of system dynamics tools, the practitioner identifies circular chains of cause-and-effect relationships that are difficult to describe verbally, thus recreating the structure and dynamic processes in an effort to understand what is causing a particular pattern of behavior (Sterman, 2000).

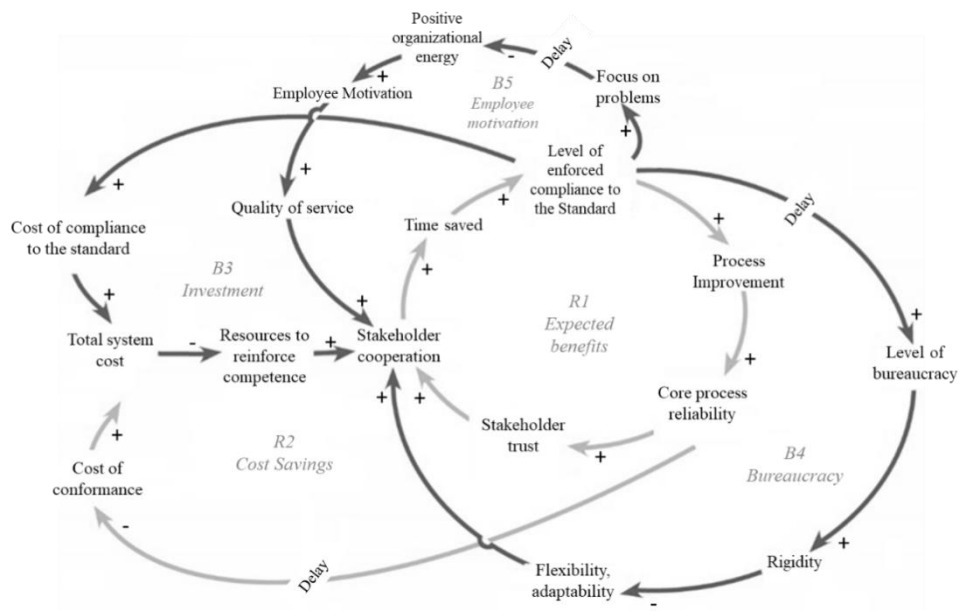


Figure 2: Causal Loop Diagram of expected results of implementing the QMS (Source: D. Grahn & L. Keller Johnson (2018), adapted for an organization in the public sector)

As reflected in Figure 2, the positive reinforcing cycles of compliance to the international standards will improve stakeholder/supplier relationships. The negative impacts of increased costs of compliance (B2), the unavoidable rise in bureaucracy (B4), and a focus on problems brought about by employee motivation (B5) is balanced by the expected benefits, and the reinforced competence of the staff (R1 and R2).

6. CONCLUSIONS

Following the three consecutive Eurozone emergency loan programs, Greece is on the steep road to economic recovery. The massive debt that currently stands at above 180 percent of the country's GDP, however, will be a national liability for many years to come. Moreover, the structural problems that contributed to the crisis, remain for the most part unimpeded, making it harder for the country's economy to fully recover. The CoA can be instrumental in the nation's economic recovery and a key preventing measure to arrest financial mismanagement in the future. Thus, the need to continually challenge and expand the CoA's effectiveness within its current legal and regulatory framework has never been more important. In this context, the CoA needs to carry out its activities making use of innovative management practices and tools that reinforce its capacity to continually improve its key and enabling processes, and its ability to align its practices to both national and European benchmarks. The CoA's ability to respond effectively to the complexity in its environment is a key contributor to operational effectiveness and its net contribution to the economic ecosystem of which it is a part. In fact, the organization's capacity for change in a dynamic environment is an essential competency that must be imbedded in every aspect of its operations and an important prerequisite that is required to achieving sound results that meet the needs of both the organization and its stakeholders. The CoA's processes, culture and politics, employee required and emergent systems, existing and potential stakeholder needs are all essential elements of a unified system. The product of the interaction of these

interdependent elements needs to be approached and understood as a unified whole. Understanding the fundamental systemic relationships which affect the behavior of the system over time will augment the CoA's capacity to manage the system's complexity.

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