

# INFORMATION SYSTEMS GOVERNANCE USING ISACA COBIT© 2019

*Yue Zhang, David Liu, Tao Hu, David Nazarian College of Business and Economics  
California State University, Northridge, 18111 Nordhoff St., Northridge, CA 91330-8372  
[Jeff.zhang@csun.edu](mailto:Jeff.zhang@csun.edu), [David.liu@csun.edu](mailto:David.liu@csun.edu), [Eric.hu@csun.edu](mailto:Eric.hu@csun.edu)*

## ABSTRACT

Information Systems/Information Technology (IS/IT) governance (ITG hereafter) is an important emerging issue for businesses across industries. ITG is a field with great breadth involving all business functions, thus requires careful plan and painstaking execution. An effective and well-designed ITG system must be based on a thorough and directorial framework. ISACA's COBIT© 2019 (COBIT 2019 or simply COBIT hereafter) provides such a framework. This article presents the core structure of COBIT 2019 with attempts of logical organization and interpretation that would help to bring a large and complex framework to one that easily makes sense and is easier to be commanded and implemented.

## INTRODUCTION

IT governance (ITG) is defined as the processes that ensure the effective and efficient use of IT in enabling an organization to achieve its goals (Gartner, 2019), or "an integral part of enterprise governance and consists of the leadership and organisational structures and processes that ensure that the organisation's IT sustains and extends the organisation's strategies and objectives." (ITGI, 2003).

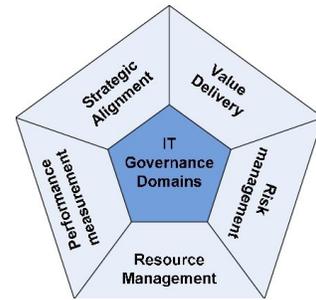
IT governance is becoming increasingly important, with the trends of IT in businesses that

- IT applications are pervasive and many are mission-critical;
- IT power has increased to such a level that it can do great good and harm;
- IT spending is skyrocketing that the control of IT budget frequents board room agenda;
- IT security incidents and threats frequent news headlines;
- IT-related laws and regulations demands more and more compliance efforts from businesses and organizations.

To address the above pressing issues, and to effectively align the IT function with the strategic goals of the organization, so as to reap the full benefits of IT applications in business, organizations have been struggling to find effective ways and mechanisms. IT Governance (ITG) is the way and the mechanism. In fact, effective ITG has been proved to bring comparative benefits to organizations adopting similar strategies (Weill, P. and Ross, J.W., 2004). Recent studies continued to support the observation that good ITG enables firms to achieve IT-related benefits and reduce IT-related risks (ISACA, 2019).

IT Governance encompasses five main domains (ISACA, 2004):

- Strategic alignment of IT with the business
- Value delivery of IT
- Management of IT risks
- IT resource management
- Performance measurement of IT



The above is referred to as the "ITG Pentagon":

Figure 1: Five domains of IT governance

The Information Systems Audit and Control Association (ISACA, now only go by the acronym) developed an ITG framework COBIT, grown out of an audit and control framework first introduced in 1996 (CobiT 1) and is now in its six major edition (COBIT© 2019), through the evolution from IT auditing to IT control to IT management, then to IT governance (CobiT 4.1), advanced to enterprise governance of IT (GEIT, with COBIT 5), and now to the newest COBIT© 2019, focusing on enterprise governance of information and technology (EGIT).

With its over twenty-three years' evolution and wide adoption base, COBIT has developed to a very comprehensive system, encompassing all areas of ITG. However, the completeness and the all-encompassing of COBIT also makes it a bit intimidating to people and organizations exploring possible adoptions. This article attempts to provide a highly organized presentation of a sufficiently simplified synopsis of COBIT (2019), with the best and brightest parts of this new generation of COBIT highlighted and organized, so that COBIT would presents its main logic to someone first encountering it, that it would be embraced with clear understanding by this possible new adopter. This article would also attempt to suggest the application of COBIT to such specific arena as information security (InfoSec) for organizations.

### BRIEF HISTORY OF THE EVOLUTION OF COBIT

COBIT was first developed in 1996 by ISACA as an IT auditing framework. It has gone through six generations of evolution. The distinct features of each generation of COBIT are summarized below:

Generation	Year	Focus	Remarks
CoBiT1	1996	IT auditing	after-the-fact auditing of the IT functions
CoBiT2	1998	IT control	expanding from after-the-fact auditing to in-progress control
CoBiT3	2000	IT management	including management guidelines for IT function
CoBiT4.0/4.1	2005/7	ITG framework	adding information and communication technology (ICT) governance components
COBIT5	2012	Governance of IT	takes ITG to a newer level of "enterprise governance of IT."
COBIT2019	2019	Governance of I & T	enterprise governance of information and technology (EGIT)

Table 1: Key Focuses of COBIT Generations

COBIT 2019, the current version of COBIT, has a distinction from the previous version COBIT 5: the word "information" is here separated from the word "technology," so it is NOT "information technology" but "information AND technology," emphasizing the age of "big data" when data has become the most important asset of any organization.

This major advancement in COBIT2019 demonstrates ISACA's vision in leveraging business data analytics ("Big Data") for the strategic advantage from the governance of information & technology. COBIT 2019 has as its emphasis the enterprise's governance of "information and technology", having information/data as an object of governance, giving data a center spot, as a prominent corporate asset.

From Table 1, we can see that with the rollout of every generation of COBIT, the COBIT framework is becoming

- More encompassing in the temporal logic (from after-the-fact to in-progress to life-cycle management and governance);
- More encompassing and comprehensive in the actions regarding IT: from auditing to control to management to governance;
- More encompassing in its involvement of personnel in the organization: from specific types of personnel in the IT department to the whole IT department, then to the top-level executives, and now to practically all personnel in the organization;
- More encompassing in its involvement of business functions, from within the IT department to all those related to the IT function and IT use, to all those involving the use of "information AND technology".

## STRUCTURE AND OUTSTANDING FEATURES OF COBIT 201

### COBIT Principles

COBIT®2019 was developed based on two sets of principles: Principles that describe the core requirements of a governance system for enterprise information and technology; Principles for a governance framework that can be used to build a governance system for the enterprise.

The first set of principles describe the core requirements of a governance system:

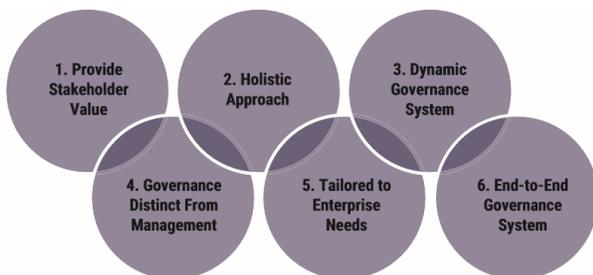


Figure 3: Governance System Principles

The second set of principles are for a governance framework:

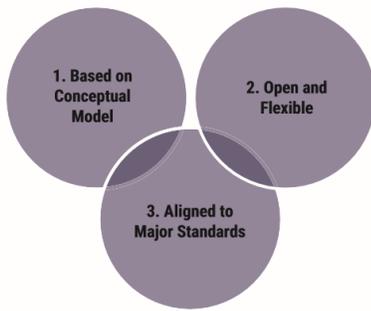


Figure 4: Governance Framework Principles

Under the above principles, the COBIT product family is open-ended and designed for customization. ISACA's COBIT2019 has a family of the following publications as of now:

- COBIT2019 Framework: Introduction and Methodology;
- COBIT2019 Framework: Governance and Management Objectives;
- COBIT2019 Design Guide: Designing Your Information & Technology Governance System;
- COBIT2019 Implementation Guide: Implementing and Optimizing an Information and Technology Governance Solution.



Figure 5: Major publications of COBIT2019 family

More publications will be added to the family.

### Components of the Governance System

To satisfy governance and management objectives, each enterprise needs to establish, tailor and sustain a governance system built from a number of components. Figure 5 shows COBIT's components for a governance system. These components are factors that, individually and collectively, contribute to the good operations of the enterprise's governance system over I&T.



Figure 6: COBIT Components of a Governance System

## COBIT 2019: A PRESCRIPTIVE FRAMEWORK

### COBIT 2019 Focus Areas

A focus area describes a certain governance topic, domain or issue that can be addressed by a collection of governance and management objectives. Focus area is a new feature of COBIT2019. The number of focus areas is virtually unlimited. That is what makes COBIT open-ended.

### COBIT 2019 Design Factors

Design factors are factors that can influence the design of an enterprise’s governance system and position it for success in the use of I&T. COBIT2019 proposes eleven design factors as follows:

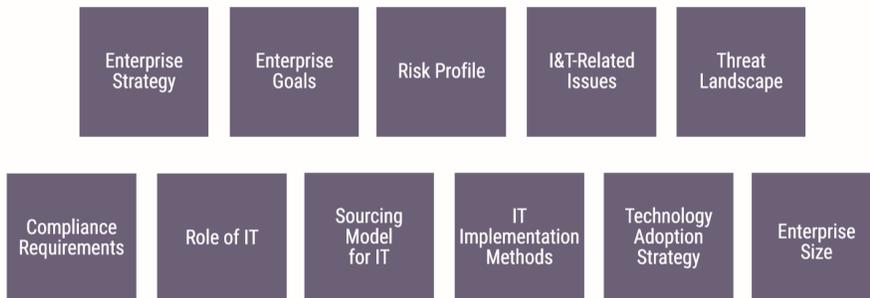


Figure 6: COBIT design factors

These factors will be used in the governance system design workflow.

## CONCLUSION

IT Governance is an emerging field with increasing importance. Top business executives as well as all business professionals using IT and using data must be adequately educated and sufficiently involved in ITG. Training and education on ITG is an urgent need for all organizations as well as for the curriculum update for business and information systems programs.

The complexity and all-encompassing nature of ITG poses a great challenge to the achievement of the above training goals. A logically organized simplification is called for the accomplishment of the training/education regarding ITG.

COBIT 2019 is a very complete and effective ITG framework; a proper understanding for all business professionals using IT and information, and a good command of the framework for those deeply involved in ITG and in IT functions would greatly benefit businesses and organizations in their leveraging information AND technology for the strategic advantage for the organization.

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