

Louvain School of Management

COBIT 5 Implementation

COBIT 5 Case Study in Aetna Inc.

Project Master's Thesis submitted by
Tammy BUENAIRE ZAMBRANO

Supervisors
Hassan HAIDAR
Manuel KOLP

Reader
Jean VANDERDONCKT

Academic Year 2016-2017
Master in Business Engineering – Major in Supply Chain Management

ACKNOWLEDGEMENTS

I would like to express my gratitude to the academic staff for guiding me through my thesis, especially to my supervisors, Mr. Hassan HAIDAR and Mr. Manuel KOLP for their support and assistance.

I sincerely thank Mrs. Nuvia Zambrano, the person who always supported and encouraged me in carrying out this work. Without her, I could never have achieved any project. Thank you my lovely Mom!

Finally, the contribution of all my friends is very appreciated and gratefully acknowledged. The completion of this thesis could not have been possible without their participation.

Thank you from the bottom of my heart.

TABLES OF CONTENTS

| | |
|---|---------------|
| I. INTRODUCTION..... | V |
| II. COBIT 5..... | VI |
| 1. FRAMEWORK..... | VI |
| 1.1. COBIT 5 Presentation..... | VI |
| 1.2. Principles..... | VII |
| 1.3. Why COBIT 5?..... | VIII |
| 2. ENABLING PROCESSES..... | IX |
| 2.1. Stakeholder Drivers influence Stakeholder Needs..... | X |
| 2.2. Stakeholder Needs cascade to Enterprise Goals..... | XI |
| 2.3. Enterprise goals cascade to IT-related goals..... | XII |
| 2.4. IT-related goals cascade to Enabler Goals..... | XII |
| 3. IMPLEMENTATION..... | XVI |
| III. COBIT 5 CASE STUDY IN AETNA INC. | XIX |
| 1. INTRODUCTION..... | XIX |
| 2. AETNA DESCRIPTION..... | XIX |
| 3. COBIT 5 IMPLEMENTATION WITHIN AETNA..... | XX |
| .1. PHASE 1 [The year 2000]..... | XXI |
| .2. PHASE 2..... | XXIV |
| .3. PHASE 3..... | XXXI |
| .4. PHASE 4 [The year 2001]..... | XXXIV |
| .5. PHASE 5 [The Year 2002 – 2003]..... | XL |
| .6. PHASE 6 [The Year 2004]..... | XLIII |
| .7. PHASE 7 [The Year 2005 – 2006]..... | XLVI |
| IV. CONCLUSION..... | XLVIII |
| V. BIBLIOGRAPHY..... | XLIX |
| VI. APPENDIX..... | LI |
| A. ISACA FRAMEWORK – COBIT 5 COVERAGE..... | LI |
| B. GOVERNANCE VS MANAGEMENT..... | LI |
| C. ISO:IEC 38 500..... | LI |
| D. MAPPING COBIT 5 ENTERPRISE GOALS TO GOVERNANCE AND MANAGEMENT QUESTIONS..... | LVIII |
| E. MAPPING COBIT 5 ENTERPRISE GOALS TO IT-RELATED GOALS..... | LX |
| F. MAPPING COBIT 5 IT-RELATED GOALS TO COBIT 5 PROCESS..... | LXI |
| G. PROCESS REFERENCE GUIDE CONTENTS..... | LXIII |

| | |
|---------------------------|-------|
| H. METRICS | LXIV |
| I. IT SAVVY CONCEPT | LXVI |
| J. MONTHLY CLOSING | LXVII |
| K. BAI – IT PROGRAM | LXIX |
| L. DSS – IT PROGRAM | LXX |
| M. MEA – IT PROGRAM | LXXI |

I. INTRODUCTION

Nowadays, the significance of information and the pervasiveness of information technology – IT are increasingly widespread within every aspect of business environment and of public life. They become key resources for the companies within the governance¹ and management. So that the governance of enterprise IT – GEIT is currently considered as integral part of governance. GEIT mainly focuses on the benefit realization, risk optimization and resource optimization while establishing that the current IT functionality is aligned with business needs. In other words, effective GEIT grants companies to enhance business performances, on the one hand, by ensuring the compliance with external requirements such as laws, regulations, policies and contractual obligations. On the other hand, it provides this improvement by optimizing IT services and technologies costs, maintaining IT-related risk at an acceptable level, improving transparency of IT and its activities procuring, ensuring high-quality information that supports business decision-makings, generating business value from IT-related investments, and finally gaining competitive advantage, which are the most important aspects for companies. (PwC, 2011)

For many years, the Information Systems Audit and Control Association – ISACA mainly focused on IT governance, has researched to provide a framework evaluating, directing, and monitoring the enterprise IT. Hence the emergence of the Control Objectives for Information and related Technology – COBIT, a framework helping enterprises to create optimal value from IT through a range of enablers prescribing processes, roles, responsibilities, and accountabilities. The last version is COBIT 5 and we will deal with throughout the paper.

This document is structured as follows:

In section II, the COBIT 5 introduction resumes its scope and framework, the way whose IT activities meet the business goals, and a briefly discussion of its implementation. Indeed, the next section tackles the application at length

In section III, COBIT 5 implementation with Aetna reveals the success key factors to straighten a company by using GEIT and IT management activities.

¹ The governance refers to the establishment of policies and continuous monitoring of their implementation by the members of the governing body. It assures improvement in stakeholder value, transparency and effective management of enterprises risk, and finally a maximization in opportunities, cost and risk associated enterprises activities.

COBIT 5

1. Framework

1.1. COBIT 5 Presentation

COBIT 5 is a good-practice framework assisting enterprises in achieving their objectives for the GEIT and its management in terms of business, IT, risk, security, and assurance communities. (COBIT 5 Framework, 2017)

The major drivers of international association ISACA for the conception of COBIT 5 are:

- Helping stakeholders determine what they really expect from the IT, in other words, what IT benefits, at what acceptable level of risk and cost, as well as finding an agreement on their diverging opinions and purposes based on the company's priorities, and finally increasing the transparency regarding the company's status.
- Responding to the continuous dependency of the enterprise's success on external stakeholders (suppliers, clients, services...)
- Managing effectively and efficiently the increasing amount of information in order to improve the decision-makings
- Adapting much more to the pervasive technologies, environment, mores in order to make the company grow
- Providing further guidance in the area of innovation such as creativity, inventiveness, to reach new type of customers, developing new products, etc.
- Getting better information control
- Connecting to other frameworks and standards in the market such as ITIL², PMBOK³, PRINCE2⁴, TOGAF⁵, COSO⁶, ISO⁷ standards.
- Gathering all ISACA frameworks and guidance such as COBIT 4.1, Val IT and Risk IT as shown in the **appendix A**

In fact, COBIT 5 is a family product, see **figure 1**

² Information Technology Infrastructure Library

³ Project Management Body of Knowledge

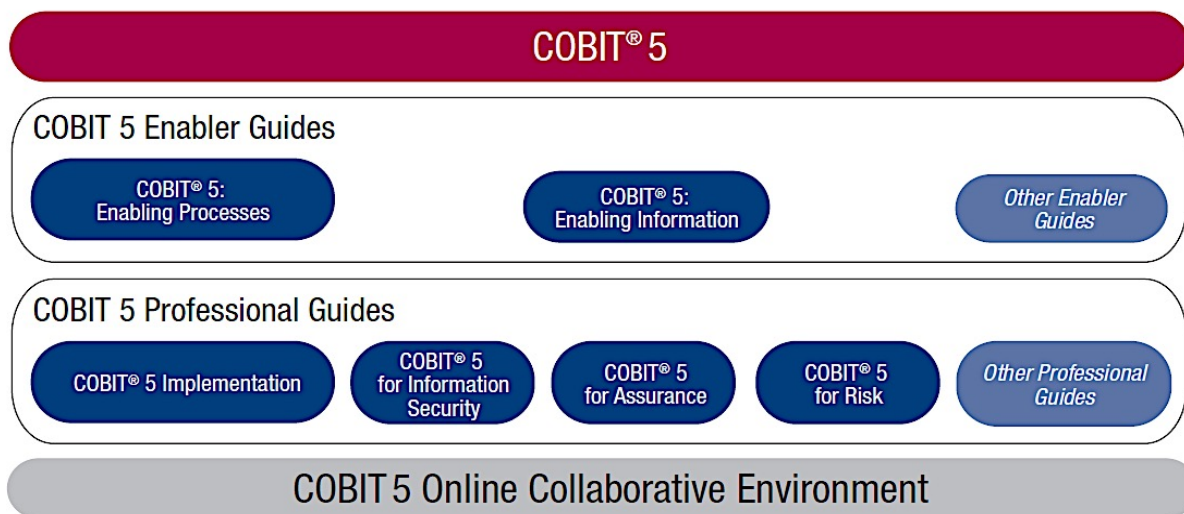
⁴ Project In Controlled Environments 2

⁵ The Open Group Architecture Forum

⁶ Committee of Sponsoring Organization of the Treadway Commission

⁷ International Organization for Standardization

Figure 1: COBIT 5 – Family Product



Source: COBIT 5 – Framework

Each row represents a product: COBIT 5 introducing the framework and the scope, COBIT 5 Enabler Guides addressing the governance and management enablers in details, COBIT Professional Guides putting into practices a COBIT 5 plan, and COBIT 5 Online Collaborative Environment being available to support the use of whole this framework.

In this paper, we will focus on COBIT 5 Framework, COBIT 5 Enabling Processes and COBIT 5 Implementation because they cover almost the entirety of business activities.

As already mentioned, thanks to COBIT 5, companies optimize their value from IT by maintaining a balance between realizing benefits and optimizing risk levels and resource use. This tool perfectly fits any companies of all sizes and types, commercial, not-for-profit or in the public sector.

1.2. Principles

This framework follows five principles:

1. Meeting stakeholder's needs: regardless of enterprises' objectives, COBIT 5 ensures that there is a negotiation amongst different stakeholders' value interest. The created value can be either a financial product or a financial service, depending on the company's type.
2. Covering the enterprise end-to-end: COBIT 5 covers all functions and processes, not just the IT function. It treats information and related technologies as assets that the entire executive can access.
3. Applying a single, integrated framework: COBIT 5 gathers all IT related-standards,

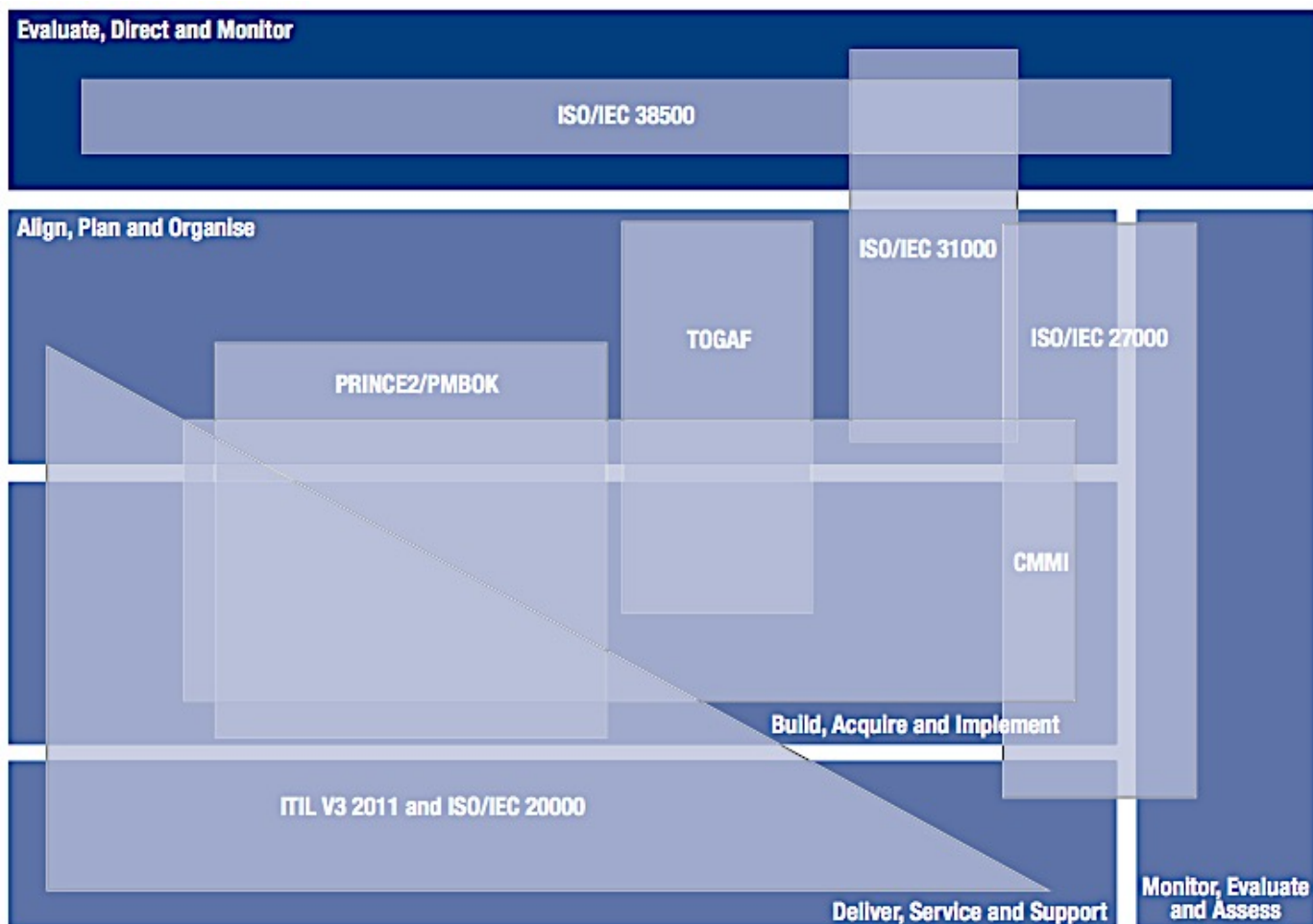
best practices to align with other relevant standards and framework at high level in order to use them as overarching global framework for governance and management of enterprise IT.

4. Enabling a holistic approach: COBIT 5 enables IT to be governed and managed in a holistic manner by taking into account several interacting components as:
 - a. Principles, policies and framework:
 - b. Processes, organizational structures
 - c. Culture, ethics and behavior
 - d. Information
 - e. Services, infrastructure and applications
 - f. People, skills and competencies.
 - g. These are the seven categories of enablers defined by the COBIT 5 framework, later we will develop the enabler concept.
5. Separating governance from management: See the **appendix B** to see the difference between those concepts. COBIT 5 framework makes a clear difference because they include different activities, thus organized according to different structures and having different aims.

1.3. Why COBIT 5?

Finally, I chose COBIT 5, on the one hand, because it almost is as a monopoly in terms of governance and management. Indeed no other framework only focuses on enterprise IT while offering numerous business objectives. Moreover, it contains the latest idea in enterprise governance and management techniques. (ISACA, 2017) On the other hand, it integrates other frameworks in order to cover more whole enterprise activities, such as PMBOK and PRINCE 2 for the project management, ITIL for the management of system information, TOGAF for IT architecture, COSO for the internal control and the ISO standards.

Nevertheless, there is a framework that could be worthy of comparison because it also focus on the IT governance, it is ISO/IEC 38 500. (COBIT 5 Framework, 2017). See the **figure 2** to see the COBIT 5 and other standards coverage and framework. In **appendix C**, there is more information about this standard.



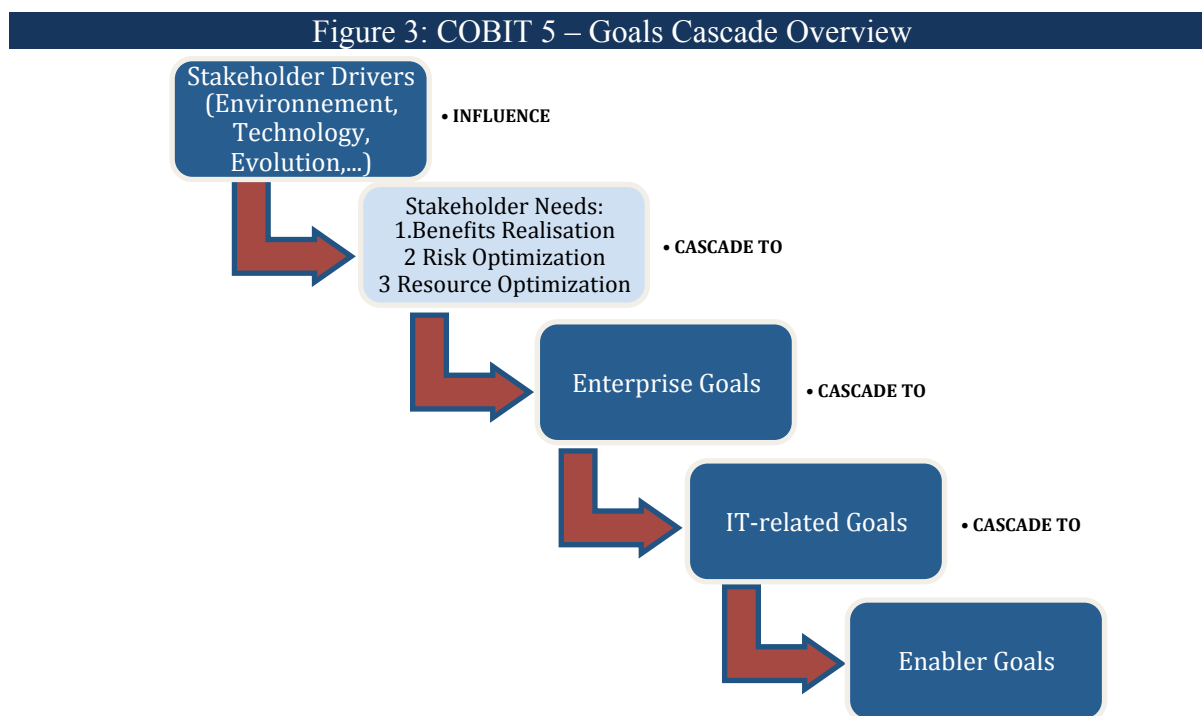
2. Enabling Processes

This part introduces the COBIT 5 process reference model with 37 IT processes distributed in 5 domains forming the structure for the detailed COBIT 5 process guidance. That is preliminary study, based on the assessment of the business state, before the COBIT 5 implementation.

The evaluation triggers may be the desire to adapt to external environment (law, technology evolution, exceed competitive position) or to solve a series of pain points within the company such as repetitive IT anomalies or inefficient IT services.

COBIT 5 process operates according to a goal cascade mechanism transforming stakeholders' needs into specific, actionable and customized enterprise goals, then into IT-related goals and finally towards enabler goals that define concrete IT processes. In other words, it allows an alignment the enterprise needs with detailed IT activities.

In fact, COBIT 5 goals cascade operates in different steps as shown in **figure 3**.



Source: COBIT 5 – Framework

The benefits of COBIT 5 goals cascade mechanism for the companies are:

- They can highlight relevant and tangible objectives at numerous levels of responsibility.
- They can filter the knowledge base of COBIT 5 in order to draw relevant guidance for implementation, based on business goals.
- They can identify why enablers are essential in the achievement of enterprise goals

All those benefits lead to a priorities determination for implementation and a GEIT improvement by taking account of business objectives and related risks

In the following sections, there will be a description of every step of COBIT 5 goal cascade process.

2.1. Stakeholder Drivers influence Stakeholder Needs

As we can notice, there are stakeholders drivers influencing the stakeholders' needs. They could be either external, such as environment, market, technology evolution, geopolitics, or internal, such as enterprise culture, organization, risk aversion, strategy changes.

Moreover, the stakeholders' need in turn lead to the fixation of governance objective and value creation by considering benefits realization, risk optimization, and resource optimization.

2.2. Stakeholder Needs cascade to Enterprise Goals

The stakeholders' needs are related to the enterprise goals that were developed using the Balance Scorecard –BSC⁸ dimensions, and they represent common goals that an enterprise could have. Obviously, this list is not exhaustive and may vary according to the company objectives. Here we have a model of enterprise goals classified by BSC dimension as well as the relation to governance objectives, see **figure 4**.

| Figure 4: COBIT 5 – Enterprise Goals | | | | |
|--------------------------------------|---|-----------------------------------|-------------------|-----------------------|
| (IT) BSC Dimension | Enterprise Goal | Relation to Governance Objectives | | |
| | | Benefits realization | Risk optimization | Resource Optimization |
| Financial | 1. Stakeholder value of business investments | P | | S |
| | 2. Portfolio of competitive products and service | P | P | S |
| | 3. Managed business risk (safeguarding of asset) | | P | S |
| | 4. Compliance with external laws and regulations | | P | |
| | 5. Financial transparency | P | S | S |
| Customer | 6. Customer-oriented service culture | P | | S |
| | 7. Business service continuity and availability | | P | |
| | 8. Agile responses to a changing business environment | P | | S |
| | 9. Information-based strategic decision making | P | P | P |
| | 10. Optimization of service delivery costs | P | | P |
| Internal | 11. Optimization of business process functionality | P | | P |
| | 12. Optimization of business process costs | P | | P |
| | 13. Managed business change programs | P | P | S |
| | 14. Operational and staff productivity | P | | P |
| | 15. Compliance with internal policies | | P | |
| Learning and Growth | 16. Skilled and motivated people | S | P | P |
| | 17. Product and business innovation culture | P | | |

Source: COBIT 5 – Enabling Processes

*P = primary relationship

S = secondary relationship

Blank = inexistent relationship

COBIT 5 is not an efficient method whether we choose all of enterprises goals to resurge faster. In fact, reaching each enterprise goal needs money, time and commitment from executives. Indeed, the implementation requires hiring adequate employees, investing in new

⁸ BSC allows the translation of strategies into actions

products or services, however financial, human and business resources are limited. Therefore, a list of priorities goals should be made in order to focus firstly on most major issues. Once, the first goals achieved, we can spotlight some new.

For further details about the way that the stakeholder needs and enterprise goals are related, see the **appendix D**.

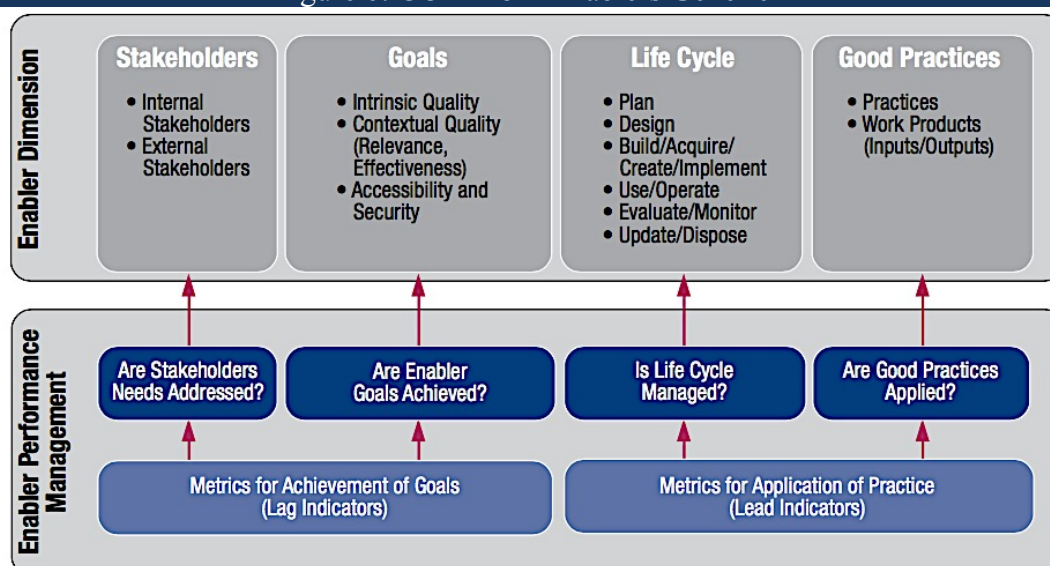
2.3. Enterprise goals cascade to IT-related goals

Achieving of IT enterprise goals needs a number of outcomes from the IT related goals. In the **appendix E**, there is a mapping table of the correlation between the enterprise goals and IT related goals. The purpose is mapping the way that each enterprise goal is supported by IT-related goals. The table use a particular scale; P, S and blank. That means there are IT-related goal that must be put into practice, it is mandatory. Concerning the others, they are either in option, S, or are not correlated to the business goals. In others words, if and only if the business goal is not achieved, the S IT-related goals should be taken in account.

2.4. IT-related goals cascade to Enabler Goals

Achieving IT-related goals depends on the choice and the successful application of enabler goals to the efficiency of enabling process. An enabler is a factor that individually and collectively, influences the governance and management of the enterprise IT, see **figure 6**.

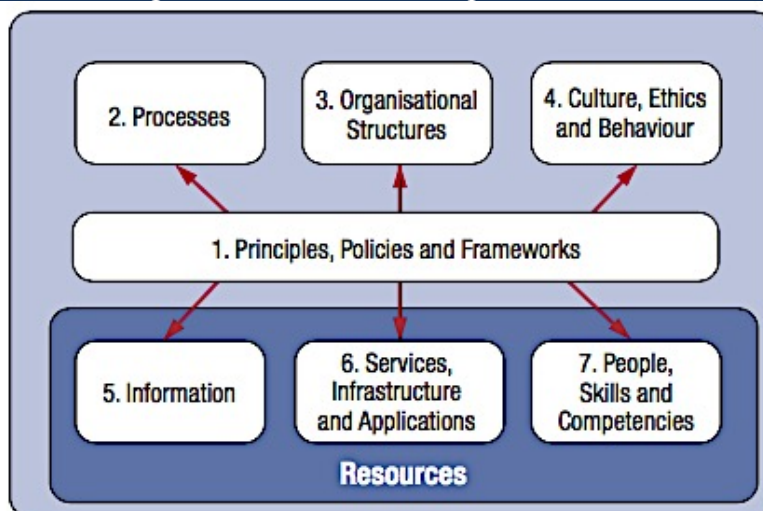
Figure 6: COBIT 5 – Enablers Generic



Source: COBIT 5 – Enabling Processes

Companies group them into seven categories as shown in **figure 7**.

Figure 7: COBIT 5 – Enterprise Enablers



Source: COBIT 5 Framework

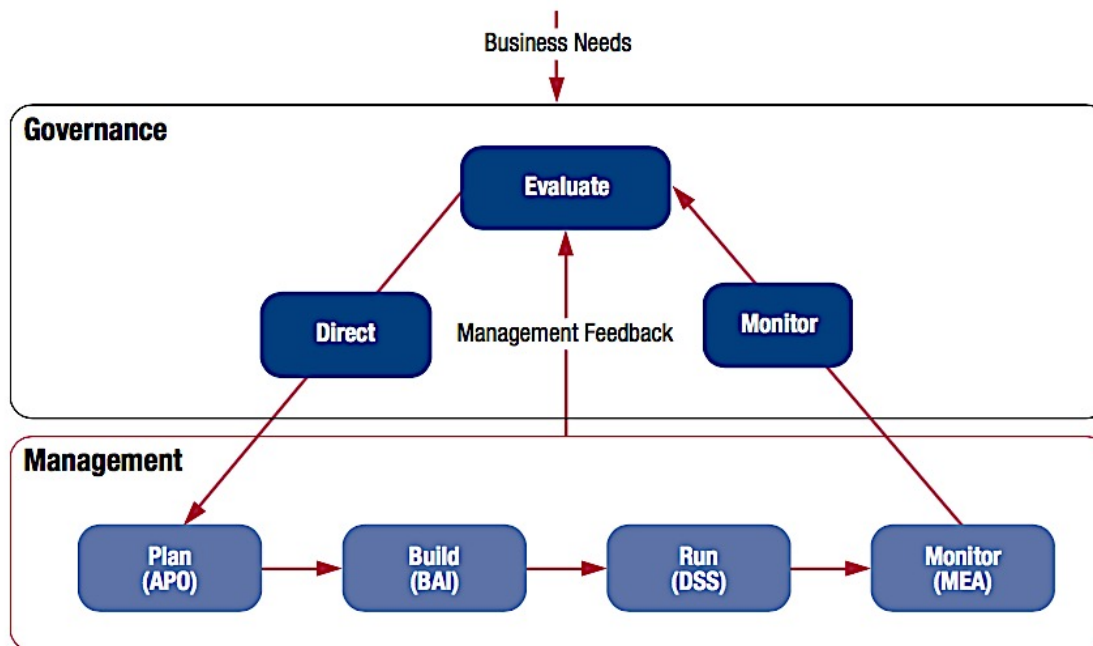
A category is connected with others and ensures an interconnection amongst all enablers, it is principles, policies and frameworks group. Moreover, every enabler needs the input of other enablers and delivers output to be fully effective. This means when we want to achieve enterprise goals or to deal with any stakeholders needs, all enablers have to be taken into account and closely analyzed. In this paper, we will focus more on process enabler.

In fact, COBIT 5 describes an IT process reference model containing all others processes in order to successful align enterprise goals with IT actions. In **appendix F**, there are the connection between the IT-related goals and COBIT 5 process.

In this section, we will develop the IT process suggested by COBIT 5 framework.

There are five process domains in COBIT 5, one in the governance level and four in the IT management, see **figure 8**.

Figure 8: COBIT 5 – Governance and Management Key Areas

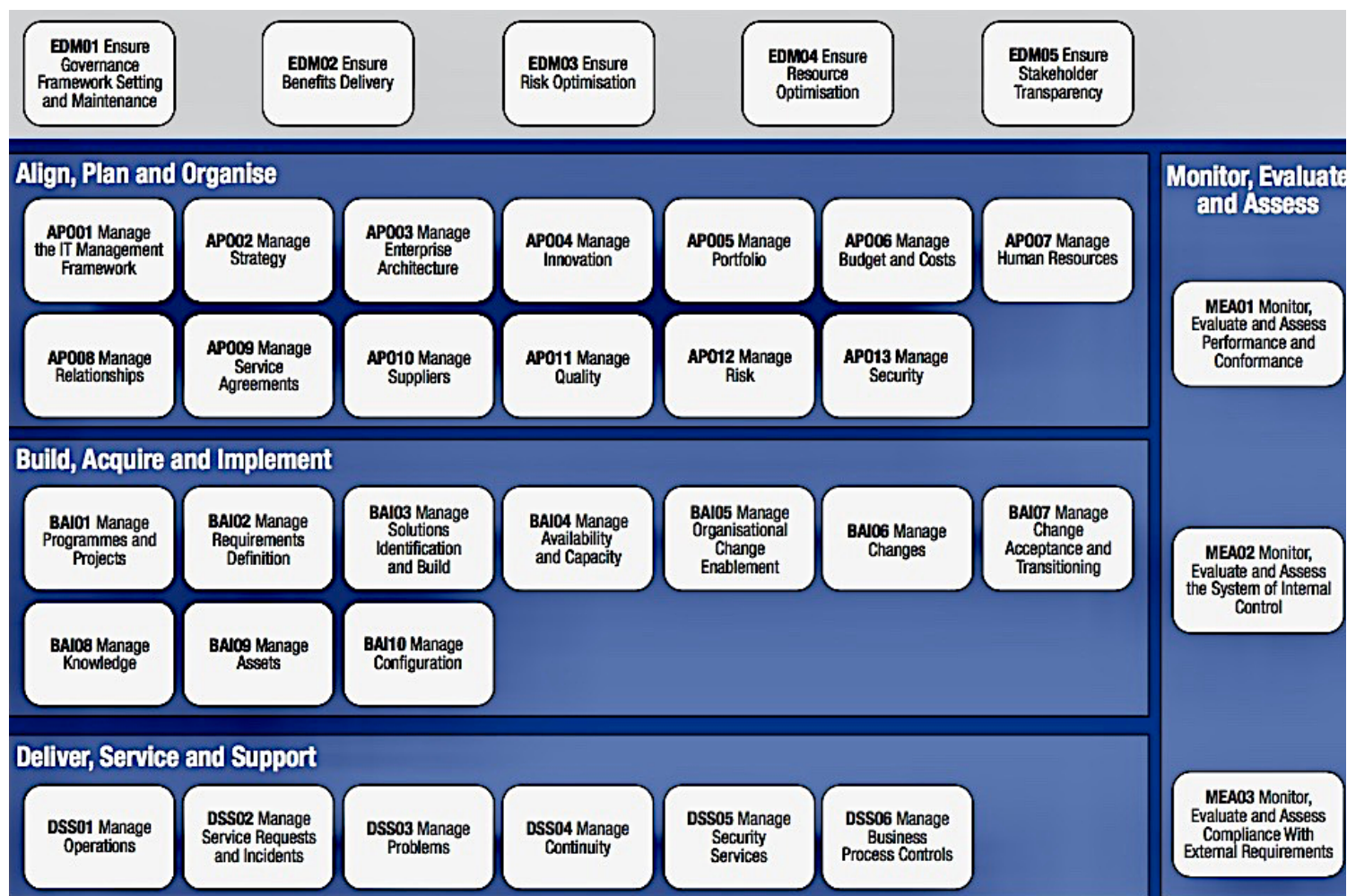


Source: COBIT 5 – Enabling Processes

- Governance: EDM – Evaluate, direct and monitor
- Management: APO (align, plan, organize), BAI (build, acquire, and implementation), DSS (deliver, service, support), MEA (monitor, evaluate, assess).

As we can see, all these processes work together; they need inputs and they create outputs. Moreover, their execution forms a cycle, see the **figure 9**, to have a global vision of IT processes.

Figure 9: COBIT 5 – Process Reference Model



Source: COBIT 5 – Enabling Processes

In **appendix G**, there is the reference guide of every process. It will be developed in detail in the study case in order to see every step of their implementation clearer.

Furthermore, we must keep in mind that not all of these mapping tables and COBIT 5 enablers contain the universal truth and users should not use them in a purely mechanistic way, but rather as guidance. Every enterprise has different size, areas, goals, and priorities that may change over the time. In other words, the enterprises should build its own goals cascade taking into account their specific situation, compare it with COBIT 5, and then refine it.

Finally, COBIT 5 lists the sample metrics for every enterprise goals and IT related goals in order to measure the achievement of each goal, see **appendix H**. The enterprise should review the list and choose relevant and achievable metrics for its own environment to set up its own scorecard system.

3. Implementation

The implementation of COBIT 5 program emphasizes on the GEIT by gathering business and IT-related activities. In other words, the governance and management of enterprises IT should be implemented as an integral part of enterprise governance, so as covering the whole business and IT functional responsibilities. Furthermore, GEIT implementation requires an executive management to define attainable objectives, to scope the GEIT out otherwise the GEIT implementation could fail, and not realize the expected benefits. Once IT-related goals are reached, governance is improved, and the companies gained significant benefits, the implementation program can be considered as closed. Keep in mind that this is a just guide assisting in the creation of successful governance and management outcomes and each enterprise should adapt it according to its own needs and structure.

First, the enterprise recognizes pain points and trigger event indicating a need for new or revised GEIT. At this moment, the whole analyze of COBIT 5 enabling process comes into play and determine which IT activities are necessary.

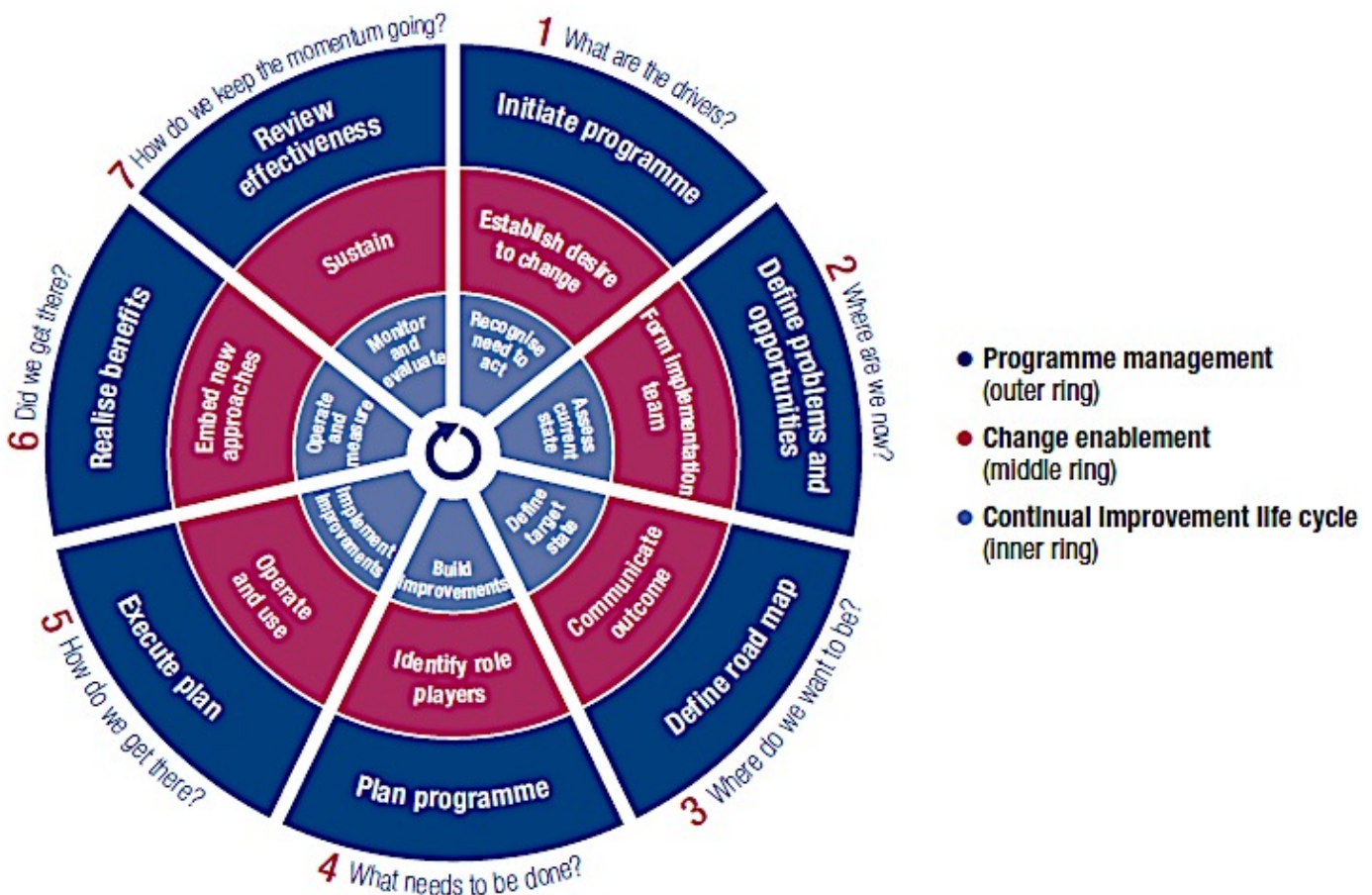
Implementation must to understand the enterprise context and take into account different factors in the internal and external conditions in order to create an appropriate environment. The external conditions resume the context within which enterprise operates and its strategies are developed and implemented, for instance, society's ethics and culture, laws, regulation, policies, international standards, industry practices, competitive environment. Concerning the internal ones, they are distinctive features of the company, its resources and capabilities having influenced the ability to act or create outputs, such as mission, vision, goals and valued governance policies and practices, culture, management style, models for roles and responsibilities, business plans, strategic intentions, operation model and level of maturity. Appropriate environment is important, otherwise the implementing GEIT improvements will fail because of inadequate direction, support and oversight. Therefore, the implementation will be different for every enterprise and the framework needs to be analyzed to lay out the optimal GEIT environment.

The governance framework should be set and maintained by the IT executive committee, that means specifying the structures, IT processes, practices for GEIT but also roles, and responsibilities in line with agreed governance principles, decisions-making models, and authority levels. Thanks to the COBIT 5 framework that provides a common language for executives to communicate goals, objectives and agreed results, the IT executive committee can make IT-related decisions with the opinion and collaboration of business and IT

managers, auditors, chiefs' officers. The committee is set up by the executive order.

The implementation requires a continual an iterative improvement life cycle approach in order to reduce the complexity and challenges related to GEIT implementation. It takes place in 7 phases as shown in the **figure 10**.

Figure 10: COBIT 5 – Seven Phases of the Implementation Life Cycle



Source: COBIT 5 - Implementation

Every phase is distinct and correctly divided, however they have common features;

- Every phase is divided into three groups having role players; the Continual Improvement life cycle – CI, Change Enablement – CE, and Program Management – PM.
- A description table containing:
 - Phase objective
 - Phase description

- Continual improvement tasks
- Change enablement tasks
- Program management tasks
- Examples of the inputs likely to be required
- Suggested ISACA and other framework items to be utilized
- The outputs that need to be produced
- A RACI chart⁹ summarizing the responsibilities of the players in each group and their key activities.
- Note this is a generic structure and it should be adapted according to enterprise. In other words, not every phase, role or feature necessarily exists and the description table is not comprehensive

⁹ RACI Chart lists the enterprise roles and responsibilities of stakeholders within an IT process and IT activity. The letters mean R = responsible (who is getting the task done?), A = accountable (who accounts for the success of the task?), C = consulted (who is providing input?) and I = informed (who is receiving information?)

COBIT 5 Case Study in AETNA Inc.

1. Introduction

This part will address the Aetna case, a renowned health care insurance company that knew a difficult financial situation at the end of the 20th century. I chose Aetna on the one hand because they were one of the first companies to focus on IT management as main strategy to restore their financial position. On the other hand, the results of those IT changes are already known and they totally are profit making.

Therefore, a question remains; how was it actually done? In reality, no one knows the detailed processes they used at least being Aetna's members. Evidently, they do not reveal such information because this remains a professional secret.

Nevertheless, I will try to answer this question by using the COBIT 5 framework. In other words, I will illustrate how this company pulled through by using IT management methods. I am going to determine the effective strategies they might use thanks to their obtained results.

Furthermore, it was difficult to obtain a recent case or in process because on the one hand, it is confidential information of companies under a non-disclosure agreement – NDA¹⁰, only company's members and COBIT 5 auditors or experts in governance and management have access. On the other hand, even though I was part of an audit team, as an intern, it will take many years to implement the whole COBIT 5 activities and examine the results. And as you already know, the COBIT 5 process is a cycle that requires money and time.

Furthermore, taking an outdated case does not change anything in the way COBIT 5 is implemented. Moreover, I am going to use the last version of COBIT, not the same as the one they employed, in order to reach Aetna's results by using distinct strategies.

2. Aetna Description

AETNA is an American health care insurance company. These offer traditional and consumer directed health care insurance plans and related services, such as medical, pharmaceutical, dental, behavioral health, long-term care, and disability plans. (Aetna, 2017)

About 20 years ago, the company experienced numerous difficulties as excessive IT expenditure, waste and major malfunctions in the IT including theft and loss of data, and legal actions against the company. Those had negative impacts on the business, loss of customers

¹⁰ The NDA is legal contract protecting the proprietary information in order to maintain the business's competitive advantage. (<https://www.rocketlawyer.com/form/non-disclosure-agreement.rl#/>)

and market shares, and their net earning knew a loss of nearly \$280 million. (MIT Sloan Management, 2006)

From 2001 to 2006, Aetna experienced a dramatic business turnaround in term of net earnings, stock price, and annual growth rates of earnings and revenue. Indeed, it made significant investments and changes in IT, more precisely in each of three IT assets i.e. technology, business and partner relationship, and human resources. (MIT Sloan Management, 2006)

Therefore, the company became profitable while being at the forefront of innovation and competitiveness.

Note that their strategies are based on two main axes;

1. Persistent controls of the IT enterprise via COBIT 5 and iterative implementation of the COBIT 5 activities and methods, finally the utilization of PMBOK for the project management , TOGAF for the architecture, and ITIL for the IT services and incident management
2. Ensure that every head of business unit, head of department, project manager has high level IT knowledge and skill in order to use IT systematically (in projects, application development, implement security, etc.) for the benefit of the company. It is IT-savvy concept. See the **appendix I** to have further information.

3. COBIT 5 implementation within Aetna

Suppose that we are in 2000 and Aetna becomes aware of the gravity of its financial statement and decides to put new employees at the head of the enterprise in order to reform whole Aetna's functioning and organization. The most relevant leaders are John Rowe as CEO and Chairman, Ron Williams as Executive Vice President and Head of Operation, and Wei-Tih Cheng as CIO. (MIT Sloan Management, 2006) Furthermore, the business leaders involved in every steps of COBIT 5 implementation are the board representative, IT executive committee, CIO, business executive, IT managers, IT process owners, IT auditor, risk and compliance agent and executive steering committee. Note that they can contact COBIT 5 experts at any time, but in this paper, we will not take into account extern contributors.

The following sections will address the different phases covering all Aetna's turnaround period. These phases were set based on the GEIT boards, audit committee, and risk committee

program supervised by the previous described business team.

.1. PHASE 1 [The year 2000]

We proceed to the development of the business case that is required to justify, support, and ensure Aetna's successful outcomes as well as to convince the Boards of Directors to invest in IT changes.

3.1.1. Executive Summary

Aetna currently knows a financial crisis mainly characterized by a loss of membership and market shares. We will list the numerous pain points within the enterprise and possible solutions.

First, there are poor IT performance, governance problems, information flow issues, IT operations, and hidden and rogue IT spending leading to competitive problems in term of bids for plans and loss of membership and market shares. Those are the reasons we are looking for a new IT system helping the governance improve where there is a continuous IT supervision and monitoring.

Second, we noticed that numerous projects failed certainly because of a lack of coordination between the order executive's decisions and IT-related needs of divisions. We can therefore see there are significant incidents related to enterprise IT management. Furthermore, the development of IT projects and their implementation are causing loss of efficiency and time, so IT agility issues. Therefore, the best decision should be that departments build by themselves their own projects, in other words, creating a kind of organizational silos. In short, we suggest a new structure of the project's governance management.

Obviously, directors' representatives should evaluate those projects before being put into practice. Afterwards, we will analyze the business environment, decompose it into manageable parts using the PESTEL Analysis¹¹ and then SWOT Matrix¹² that summarizes the current situation.

¹¹ PESTEL Analysis– Political, Economic, Sociological, Technological, Ecological, Legal analysis, is a model to identify the positive or negative influences in macro-environmental affecting an organization. Thanks to PESTEL analysis, the organization can carry out an external analysis more simply in order to realize a SWOT matrix.

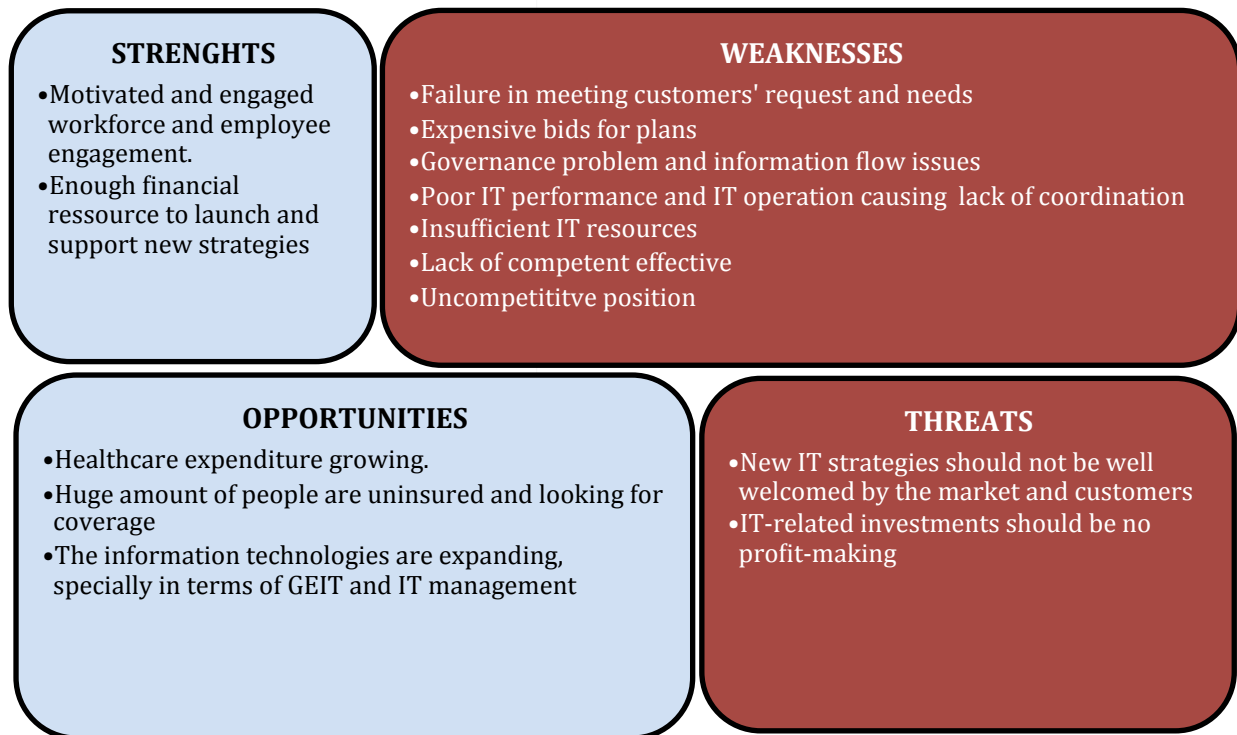
¹² SWOT Matrix– Strengths, Weaknesses, Opportunities, Threats analysis, is a business strategy tool to determine the conceivable strategic options in the Strategic Business Areas – SBA. SWOT matrix combines the study of the strengths and weaknesses of an organization, a territory or a sector with the opportunities and threats of its environment, in order to help define a strategy of development.

The **figure 11** contains a non-exhaustive list of factors that should influence Aetna's strategies

| Figure 11: PESTEL Analysis – Phase 1 | |
|--------------------------------------|---|
| Factors | Influenced Events |
| Political | Health Insurance politics, senior health regulations, prescription drug reimbursement, lawsuit's impact on medicine, national health care strategy, |
| Economic | Economic situation, per capita expenditure, unemployment |
| Social | People longevity, senior population, rising disease, improvement scientist, consumers awareness thanks to easier access to medical information via Internet |
| Technological | Enterprise systems, software integrated to provide global view, decision support, management skills, mobile communication, Internet, E-prescriptions |

Based on those factors and the pain points, the SWOT matrix will be built in order to have an overview of the Aetna's situation, see **figure 12**. This analysis will help us to determine the trigger events that could launch business strategies.

Figure 12: SWOT Matrix – Phase 1



As we can notice, Aetna has numerous failures, the main problems are at the level of IT structure and organization. That could be the reason there are no cost-effective and high quality health care delivery. Moreover, poor IT management should be cause of non-competitive bids for plans. In other words, we need better understanding of current customers' needs in order to build products and services suited for them while mainly focusing on the IT management of Aetna.

However, in the external environment, there are some opportunities that we must not neglect, those could become the framing means and support of future strategies.

Therefore, the strategy suggested is to develop IT systems in order to take advantage of GEIT and IT management while satisfying current customers. Moreover, we desire as well to differentiate us compared to our competitors in order to gain a competitive position to get new membership and to conquer new markets.

3.1.2. Proposed Solutions

We need a tool covering whole IT management activities such as GEIT, IT risk, IT operation,

IT service in order to ensure a good supervision and management of activities. COBIT 5 sounds like the best choice because it has better coverage of capabilities and can ensure the GEIT program. Indeed, COBIT 5 defines processes and activities, which surely are in relation with the capabilities of Aetna, whose aim is to achieve the GEIT improvement.

The objectives of the GEIT improvement program are to set up an adequate governance structure in order to satisfy current clients while generating profit by the optimization of costs, risk, and resources.

Finally, the business leaders' team already has concrete IT ideas. In fact, we want to implement a new information system that will help the governance to have an easier access to activities data from every department. The governance will obviously be changed, thus requiring the creation of new manager's positions. A new data center operation will be established in order to change its architecture and infrastructure in Aetna. Furthermore, thanks to the technological boost, we plan to create an innovative web navigator that is a kind of online medical self-diagnostic tool for individuals. The aim is to differentiate us from our competitors and to reach a new client and marketplace.

If the last suggestions give successful outcomes, we can consider new strategies to improve Aetna's situation.

.2. PHASE 2

This phase contains the detailed COBIT 5 process from the business goals to the IT-related goals to IT processes and finally to IT activities.

3.2.1. Enterprise Goals

The determination of the enterprise goals is necessary to trigger the goals cascade principle. Thanks to the previous business case, we can establish a priorities list of main enterprise goals, see **figure 13**.

| Figure 13: Enterprise Goals – Phase 2 | | | | |
|--|---|--|--------------------------|------------------------------|
| (IT) BSC Dimension | Enterprise Goal | Relation to Governance Objectives | | |
| | | Benefits realization | Risk optimization | Resource Optimization |
| Financial | 1. Stakeholder value of business investments | P | | P |
| | 2. Portfolio of competitive products and service | P | P | S |
| | 3. Managed business risk (safeguarding of asset) | | P | S |
| | 4. Compliance with external laws and regulations | | P | |
| | 5. Financial transparency | P | S | S |

| | | | | |
|---------------------|--|---|---|---|
| Customer | 6. Customer-oriented service culture | P | | S |
| | 7. Business service continuity and availability | | P | |
| | 8. Agile responses to a changing business environment | P | | S |
| | 9. Information-based strategic decision making | P | P | P |
| | 10. Optimization of service delivery costs | P | | S |
| Internal | 11. Optimization of business process functionality | P | | S |
| | 12. Optimization of business process costs | P | | P |
| | 13. Managed business change programs | P | S | S |
| | 14. Operational and staff productivity | P | | S |
| | 15. Compliance with internal policies | | P | |
| Learning and Growth | 16. Skilled and motivated people | S | P | S |
| | 17. Product and business innovation culture | P | P | |

We select those where the columns of the relation to governance objectives have at least two mandatory options because, on the one hand, the financial resources are quite limited, we are in a difficult period. On the other hand, we want to focus on significant problems and then tackle other issues. The selected enterprise's goals are:

- Stakeholder value of business investment
- Portfolio of competitive products and services
- Information-based strategic decision-making
- Optimization of business process costs
- Product and business innovation culture

3.2.2. Enterprise Goals to IT-related Goals

The next step in the goals cascade is analyzing which IT-related goals correspond to these business goals, see the **appendix E**. Only the IT-related goals having “P” are considered in the goals cascade process. Those having an “S”, they are still strong relationship with the business goals, but less important. As already mentioned, if and only if the business goal is not achieved, the S IT-related goals should be taken in account. From there, the following P IT-related goals are suggested as most important:

- **Alignment of IT and business strategy**
- Commitment of executive management for making IT-related business risk
- **Realized benefits from IT-enabled investments and services portfolio**
- Transparency of IT cost, benefits and risk
- **Delivery of IT services in line with business requirements**

- **IT agility**
- **Optimization of IT assets, resources and capabilities**
- Enablement and support of business processes by integrating applications and technology into business processes
- Delivery of programs delivering benefits on time, on budget, and meeting requirements and quality standards
- Availability of reliable and useful information for decision making
- **Knowledge, expertise, and initiatives for business innovation**

At this step, among the selected P IT-related goals, we retain those having more priorities, given that Aetna is in times of crisis and the investment is quite limited. Our choice focuses on those that are more pertinent for this case and related to numerous desired business goals. In bold, there are the IT goals that continue in the process.

Furthermore, we may implement the other ones during the first global review or once the cycle has ended.

3.2.3. IT-related Goals to Enabler Goals

Achieving IT-related goals requires the fixation of enabler goals that means to determine:

1. Principles, policies, and frameworks
2. Processes
3. Organizational structures
4. Culture, ethics, and behaviors
5. Information
6. Services, infrastructure and applications
7. People, skills, and competencies

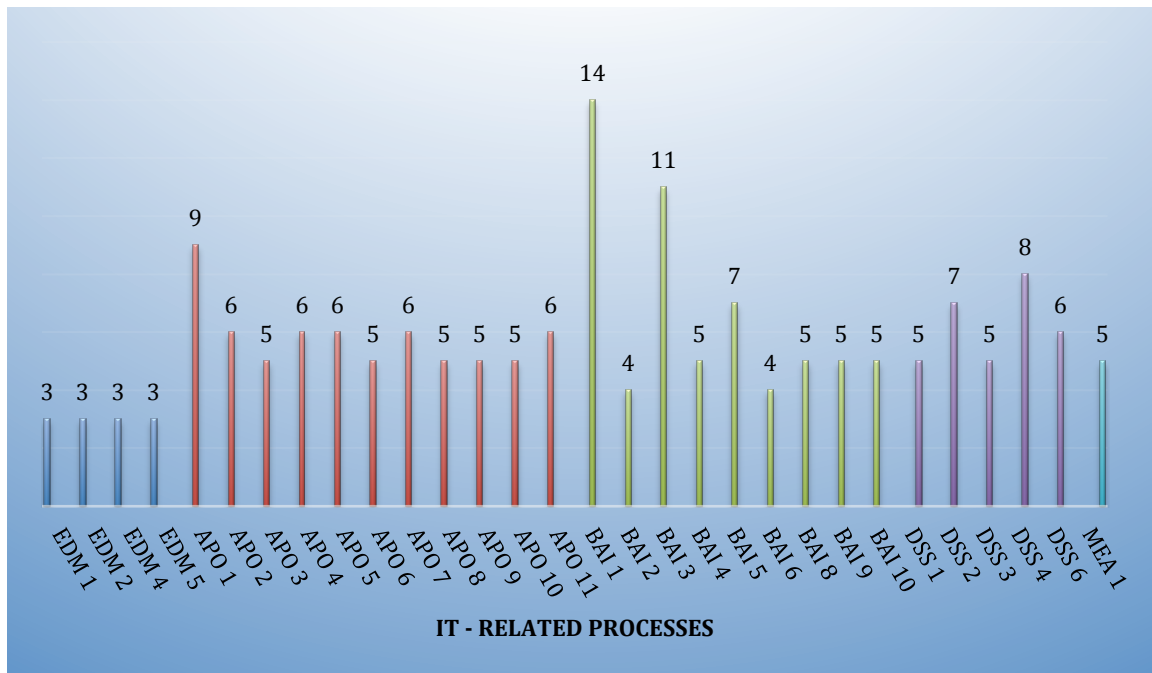
However, our starting point is the IT processes and we insert other enablers into them.

Therefore, we determine which are the IT processes suggested by COBIT 5 to achieve the IT-related goals, thanks to the **appendix F**. The company must consider the P and S IT processes otherwise, the COBIT 5 process do not correctly operate and the goals not be achieved. Nevertheless, they cannot be implemented in the same time because the company takes time to adapt and adopt changes. So first we are implemented the P processes and after that, the S processes. Here we have the list of IT processes that were retained :

1. EDM 1 – Ensure governance framework setting and maintenance
2. EDM 2 – Ensure benefits delivery
3. EDM 4 – Ensure resource optimization
4. EDM 5 – Ensure stakeholder transparency
5. APO 1 – Manage the IT management framework
6. APO 2 – Manage strategy
7. APO 3 – Manage enterprise architecture
8. APO 4 – Manage innovation
9. APO 5 – Manage portfolio
10. APO 6 – Manage budget and costs
11. APO 7 – Manage human resources
12. APO 8 – Manage relationship
13. APO 9 – Manage service agreements
14. APO 10 – Manage suppliers
15. APO 11 – Manage quality
16. BAI 1 – Manage programs and projects
17. BAI 2 – Manage requirements definition
18. BAI 3 – Manage solutions identification and build
19. BAI 4 – Manage availability and capacity
20. BAI 5 – Manage organizational change enablement
21. BAI 6 – Manage changes
22. BAI 8 – Manage knowledge
23. BAI 9 – Manage assets
24. BAI 10 – Manage configuration
25. DSS 1 – Manage operation
26. DSS 2 – Manage service requests and incidents
27. DSS 3 – Manage problems
28. DSS 4 – Manage continuity
29. DSS 6 – Manage business process controls
30. MEA 1 – Monitor, evaluate and assess performance and conformance

Every process includes IT management practices leading to concrete IT activities. In total, there are 171 IT management practices suggested by COBIT 5 process, as shown in **figure 14**.

Figure 14: IT Processes – Phase 2



Among the P IT processes, we make a priorities list¹³. The IT processes priorities list is made from their viability, their strong connection with the other IT processes by analyzing their inputs and outputs, and finally their domain. In fact, we decided to take at least one from each domain (EDM, APO, BAI, DSS, MEA) in order to keep a global view. Furthermore, I took into account those having a strong connection with the solutions to Aetna's problems.

Finally, here we have the list of selected COBIT 5 processes with their IT management practices.

1. EMI 1 – Ensure governance framework setting and maintenance

- EDM01.01 Evaluate the governance system
- EDM01.02 Direct the governance system
- EDM01.03 Monitor the governance system

2. EMI 5 – Ensure stakeholder transparency

- EDM05.01 Evaluate stakeholder reporting

¹³ Companies must implement all IT processes in order to achieve their goals, business leaders with the help of experts do this work over a long period. However, I cannot pretend to implement by my own all IT processes. That is why I introduce in this part the priorities list concept. Moreover, that will not change anything in the COBIT 5 implementation.

- EDM05.02 Direct stakeholder communication and reporting
- EDM05.03 Monitor stakeholder communication

3. APO 1 – Manage the IT management framework

- APO01.01 Define the organizational structure
- APO01.02 Establish roles and responsibilities
- APO01.03 Maintain the enablers of the management system
- APO01.04 Communicate management objectives and direction
- APO01.05 Optimize the placement of the IT function
- APO01.06 Define information (data) and system ownership
- APO01.07 Manage continual improvement of processes
- APO01.08 Maintain compliance with policies and procedures

4. APO 3 – Manage enterprise architecture

- APO03.01 Develop the enterprise architecture vision
- APO03.02 Define reference architecture
- APO03.03 Select opportunities and solutions
- APO03.04 Define architecture implementation
- APO03.05 Provide enterprise architecture service

5. BAI 1 – Manage programs and projects

- BAI01.01 Maintain a standard approach for program and project management
- BAI01.02 Initiate a program
- BAI01.03 Manage stakeholder engagement
- BAI01.04 Develop and maintain the program plan
- BAI01.05 Launch and execute the program
- BAI01.06 Monitor, control and report on the program outcomes
- BAI01.07 Start up and initiate projects within a program
- BAI01.08 Plan projects
- BAI01.09 Manage program and project quality
- BAI01.10 Manage program and project risk
- BAI01.11 Monitor and control projects
- BAI01.12 Manage project resources and work packages
- BAI01.13 Close a project or iteration
- BAI01.14 Close a program

6. DSS1 – Manage operations

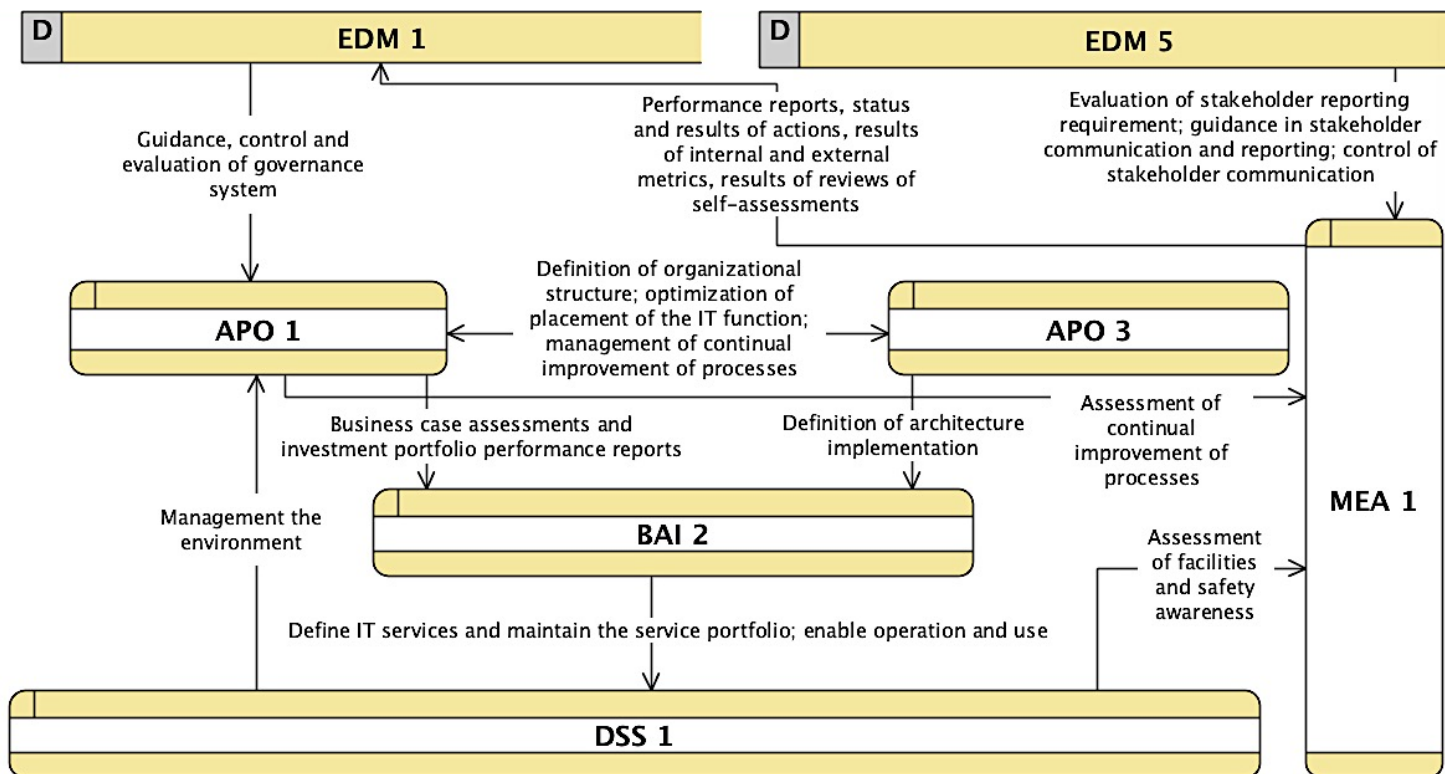
- DSS01.01 Perform operational procedures
- DSS01.02 Manage outsourced IT services
- DSS01.03 Monitor IT infrastructure
- DSS01.04 Manage the environment
- DSS01.0 Manage facilities

7. MEA 1 – Monitor, evaluate and assess performance and conformance

- MEA01.01 Establish a monitoring approach
- MEA01.02 Set performance and conformance targets
- MEA01.03 Collect and process performance and conformance data

The **figure 15** contains the mapping map with the final IT processes and their IT management practices.

Figure 15: Mapping Map – Phase 2



As already mentioned, the processes are linked between them by inputs and outputs. So some processes have to be put into practice before others.

For instance, we prioritize the implementation of the EDM, then APO followed by BAI and DSS simultaneously, and finally the MEA. Moreover, inside of some process, there are IT management practices that are not related to anything else. So we can ignore them, they do not have repercussions on outcomes.

Furthermore, COBIT 5 suggests a generic guidance for every processes wherein the functional purpose, IT activities are introduced in details but also the way that they are executed. In others words, how to build, execute, monitor the processes themselves. That information is quite useful in the following sections.

.3. PHASE 3

The objective here is defining the target capability level of every selected process to respond correctly to business goals. The target capability level is chosen by considering available external and internal benchmarks in order to ensure the appropriateness to the business of the level chosen. Once we determined the target capability level, we need to fix the gap between as-is and to-be states by using root causes, common issues, residual risk, existing strengths or best practices. In other words, determining the gap between the targets of IT processes and the current IT situation. Finally, we translate these gaps into improvement opportunities by suggesting good practices. We can gather all this information in a gap analysis tab.

3.3.1. Gaps Analysis.

The aim is to have a better overview of phase 3, see **figure 16**. Furthermore, this analysis was made base on understanding of process techniques, advanced business and technical expertise, and knowledge of business and system management software applications and services.

Figure 16: Gaps analysis – Phase 3

| COBIT 5 Processes | Target Capability Leve | Gap | Improvement process |
|--------------------------|-------------------------------|------------|----------------------------|
|--------------------------|-------------------------------|------------|----------------------------|

| | | | |
|--------------|--|--|--|
| EDM 1 | Governance improvement by evaluating, directing and monitor every IT activities | <ul style="list-style-type: none"> - GEIT is not appropriate for business executives - Controller's staff, from the top, is actually competent for those IT activities - There is no appropriate team in the bottom due to of the lack of adequate skills to undertake the task | <ul style="list-style-type: none"> - Adopt adequate architecture¹⁴ and infrastructure¹⁵ in term of GEIT, introducing a new GEIT and a new - Increase skills from business executives with external auditors or advisors. |
| EDM 5 | Ensure a total transparency of every department and bunes unit activities in term finance, data, resource, management projects by using a specific IT system | Current workforce are not enough skilled in this domain to create and manage this kind of project. | <ul style="list-style-type: none"> - Creation of an IT platform. This system connect every department allowing better data flow, better data access, projects evaluation, and activities control. - Increase skills from business executives with external auditors or advisors. |
| APO 1 | Ensure a clarify and maintain the governance of enterprise IT mission and vision | Insufficient IT resources and complex IT operating models due to different structures, practices and policies within the business units. | <ul style="list-style-type: none"> - Implementing and maintaining mechanism and authorities to manage information and to support governance objectives in line with principles and policies - Provide a consistent management approach that means covering management processes, organisational structures, roles, and responsibilities. |

¹⁴ Architecture describes the design of infrastructure's components and their relationships.

¹⁵ Infrastructure contains assets deployed to support a business system, such as people, hardware, and software, among others. The infrastructure supports architecture

| | | | |
|--------------|--|---|---|
| APO 3 | <ul style="list-style-type: none"> - Achievement infrastructure and architecture in others words, solidifying the interrelationship between business unit and department while they keep their indenpendency in terms of decision making and projects - Increase in agility, improvement quality information and saving cost | <p>Low business agility because of the IT limitation, hidden ang rogue IT spending and poor IT service and poor IT quality of service problems</p> | <ul style="list-style-type: none"> - Establishment a common architecture adequate to the business process, information, data, application, thechnology . - Definition of taxonomy, standards, guidelines, procedures, templates and tools and tools |
| BAI 1 | <ul style="list-style-type: none"> - Realization of business benefits and reduction of risks of the unexpected delays, costs - Increase in communication quality for the users and business thus ensuring the value of projects. | <ul style="list-style-type: none"> - Inadequate programs due to vague association between improvement benefits and cost - Project failed because IT-enabled changes frequently do not meet business needs | <p>Manage all process of programs and project from the investment portfolio</p> |
| DSS 1 | <p>Performing IT operational objectives and ensuring best outcomes</p> | <p>As already mentionned, complexity in IT operating models</p> | <ul style="list-style-type: none"> - Coordination and execution of IT activities and operational procedures changed to deliver internal and outsourced IT services, - Monitor activities |
| MEA 1 | <p>Transparency of performance and conformance and achivement of business goals</p> | <p>Inexistent IT performance because of IT quality service problems</p> | <p>Collection, validation and evaluation of business, IT and process goals and metrics.</p> |

Thanks to the gaps analysis, we can identify relevant improvements.

To ensure that this phase is executed effectively, it is important that all business teams are involved, see **figure 17** showing the RACI chart. If necessary, external advice should also be obtained.

Figure 17: RACI Chart – Phase 3

| Key activities | Board | IT executive committee | CIO | Business executive | IT managers | IT process owners | IT audit | Risk and compliance | Program steering |
|---------------------------------|-------|------------------------|-----|--------------------|-------------|-------------------|----------|---------------------|------------------|
| Agree on target for improvement | I | A | R | C | R | R | C | C | R |
| Analyze the gaps | | I | R | C | R | R | C | C | A |
| Identify potential improvement | | I | R | C | R | R | C | C | A |
| Set program direction | I | A | R | C | C | C | I | I | R |

Source: COBIT 5 – Implementation

.4. PHASE 4 [The year 2001]

In this phase, we will translate the improvement processes into contributing projects. Here, we will mainly focus on action plan and setting up concrete projects.

3.4.1. Aetna Project

i. Governance of Enterprise IT – GEIT

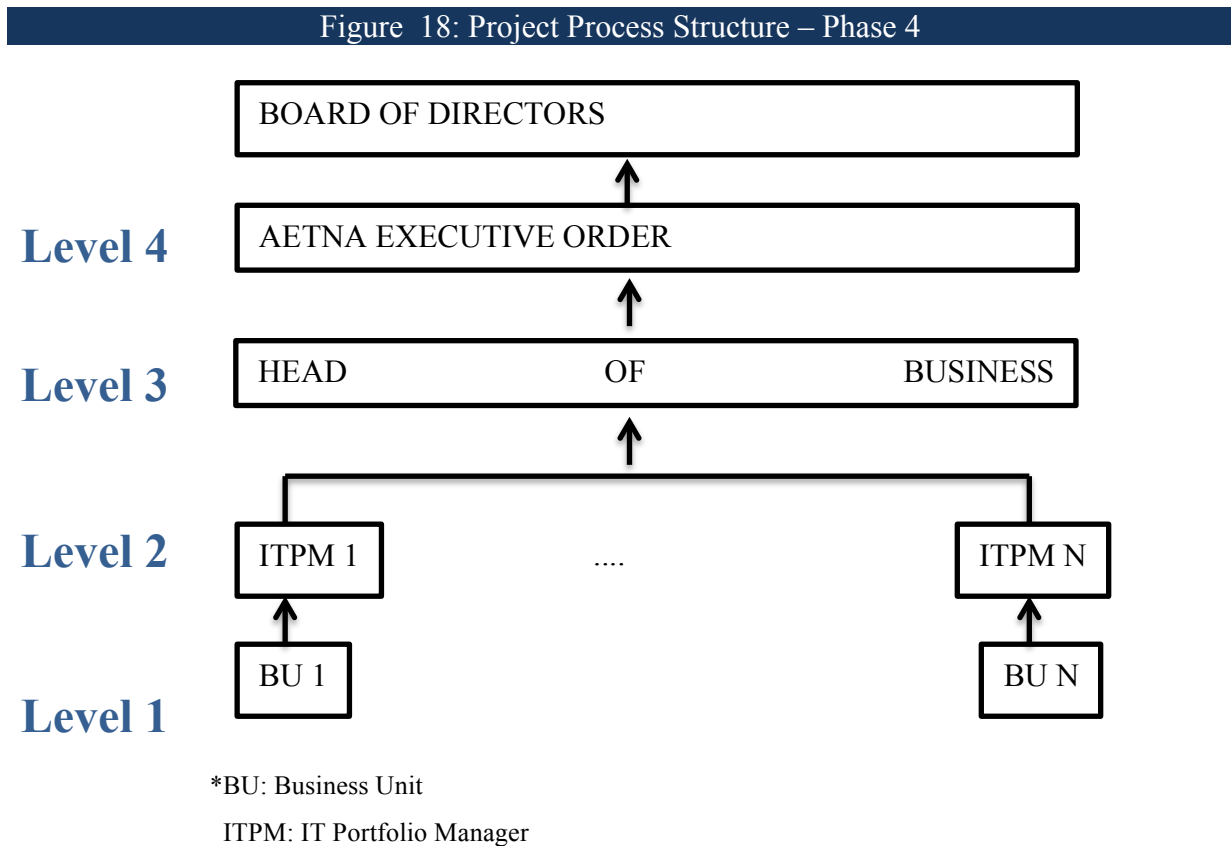
We plan to modify the current IT governance into a new GEIT by increasing business responsibilities within business units. We introduce “IT portfolio managers” who are business unit representatives. So that there is at least one business managers, in every IT systems development project teams.

The purpose is to avoid mediators who could distort the project results and allow every business unit to be directly involved in IT project and IT management development.

Here is a list of their responsibilities;

- They are responsible for IT delivery, IT management and for reporting to the head of the business. The portfolio managers are charged on identifying new systems opportunities within ongoing and future IT projects.
- They regularly review the implementations in progress in order to find issues as soon as possible. Indeed, the project governance process is handled according to a highly structured series of four levels of issues-driven project review meetings as shown in

figure 18. The unresolved issues at one level escalated to next until the CIO and other business executives.



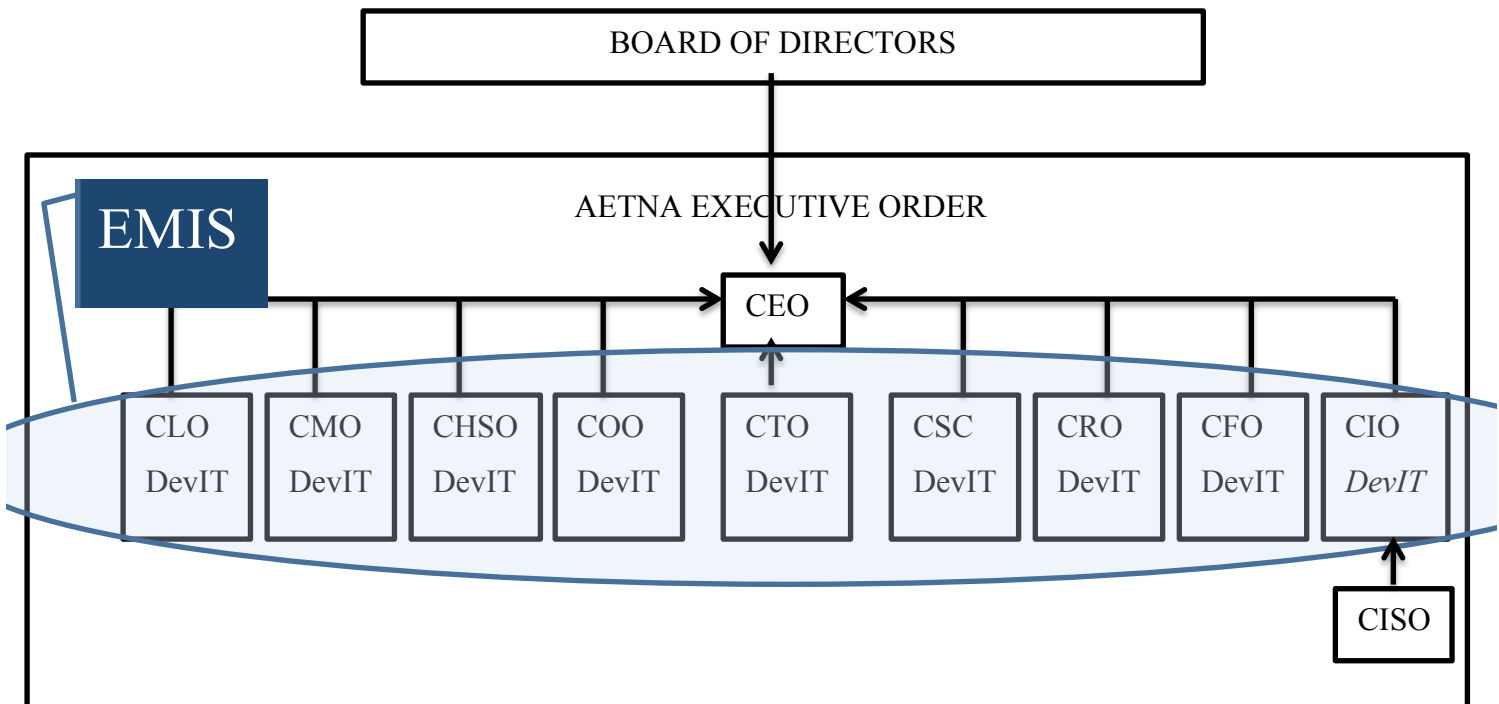
Thanks to this new IT governance and their directly implication in IT development, business units should gain a considerable autonomy to solve their own IT problems, and flexibility in management and decision making in terms of IT asset.

ii. Executive Management Information System – EMIS

EMIS is an IT system containing the business intelligence – BI¹⁶ from every business department in order for the CEO and the chief officers to have a global vision of the situation of every division and to better govern, as shown in **figure 19**.

¹⁶ BI is the set of projects, strategies, activities, data, technologies, tools that are used by every departments to support their business decisions.

Figure 19: EMIS – Phase 4



EMIS provides a more efficient management discussion and decision making from the executive order concerning the business goals and IT investments within every divisions. Indeed, this system allows more consistent and comparable financial information on the profit-centered departments thanks to its transparent financial visibility. EMIS also includes other operational measures to clean up the data and its management from the bottom to the top in order to get better-restrained information, to lead to new business applications. Finally, EMIS allows setting reuse of building block components among departments. Indeed, as every department is aware of others activities, they can use data from other departments.

In fact, a better use of the data asset capacities allows the making of clear decisions on prices for bids of plan. Indeed if the lower-level employees are performant in terms of IT, and if they use the money properly, the whole company will spend less money. This enables the reviewing of products and services prices in order to be more competitive.

Furthermore, the EMIS also provides a shortening of the monthly closing¹⁷ of the books from over 20 to 7 days, this subject is amply developed in the **appendix J**.

¹⁷ The monthly close is the processing of transactions, journal entries and financial statements at the end of every month. According to consulting firms, a company realizes savings of anywhere from 5% to 20% by cutting the monthly closing.

In parallel with the EMIS, every department is independent in delivering and managing IT projects. In other words, they meet their IT needs without the CIO's support and manage their own IT outgoings. The aim is that every chief officer is able to manage their own issues in terms of IT asset while the top manager keep monitoring and evaluating their activities.

iii. Innovation and Competitiveness

Thanks to the autonomy department planned by the previous projects, CIO is discharged from work and more concentrated in the IT aspect of the whole Aetna Company. Therefore, we charge the CIO to set up a website, "Aetna Navigator", where customers can use an online medical self-diagnostic tool. This new platform enables to get strategic value from IT by being innovative and efficient, to differentiate us in the marketplace and attract new customers.

3.4.2. Projects Details

Before implementing the suggested projects, we need to appreciate business resources and implementation order, then determine the implementation challenges as well as success factors.

First, we establish the required business resources for every project, which means finding the role players, support (information, skills, and knowledge), the budget, time of adoption.

For the roles players, we use the RACI chart containing the responsibilities of role players and the key activities in each project, see **figure 20**.

Figure 20: RACI Chart – Phase 4

| Key activities | Board | IT executive committee | CIO | Business executive | IT managers | IT process owners | IT audit | Risk and compliance | Program steering |
|-----------------------------------|-------|------------------------|-----|--------------------|-------------|-------------------|----------|---------------------|------------------|
| Prioritize and select development | | A | R | C | C | R | C | C | R |
| Define and justify projects | | I | R | C | R | R | C | C | A |
| Design change response plans | | I | R | R | C | C | C | C | A |
| Identify existing strengths | | I | C | C/I | R | R | C/I | C/I | A |

| | | | | | | | | | |
|--|--|---|---|---|---|---|---|---|---|
| Develop program plan with allocated resource and project plans | | A | C | C | R | C | I | I | R |
|--|--|---|---|---|---|---|---|---|---|

Source: COBIT 5 - Implementation

The business leaders are involved in each project, especially in the IT aspect of each project. Concerning the other business resources, we prefer to gather them in a tab, see **figure 21**.

Figure 21: Business resource – Phase 4

| Projects | Support | Annual Budget | Time |
|-------------------|--|---------------|---|
| GEIT | <ul style="list-style-type: none"> - External COBIT 5 advisors - New workforce for the portfolio managers or upgrade current executive - New hardware - Introduction of new rules, policies | + 20.000 | <ul style="list-style-type: none"> - Total implementation after 5 years - Global Review by business team after 3 years - Review within BU every 3 months |
| EMIS | <ul style="list-style-type: none"> - BI from every business department - Extended data and software hosting - IT operational skills and knowledge - Hire programmers - New hardware - New IT rules and policies - Ensure of security program with antivirus - External Audit | + 50.000 | <ul style="list-style-type: none"> - Total implementation: 5 - Global Review by business team after 3 years - Review within BU every 3 months |
| Innovation | <ul style="list-style-type: none"> - Hire programmers - Purchase customer data - Extended data and software hosting | + 30.000 | <ul style="list-style-type: none"> - Total implementation: 3 - Global Review by business team after 2 years - Review within BU every 3 months |

Concerning the implementation order, we introduce a timeline with every project. The **figure 22** shows ongoing projects, in bold initiated ones and desired results. The elaboration projects last one year so we expected to implement projects the next year, 2001, and to achieve results in 2006.

Figure 22: Project Timeline – Phase 4

| | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 |
|------------------------|--|---|-------------------------------|-------------------------------|---|----------------|---|
| Project | Planning: -GEIT -EMIS -Innovation | Implementation: -GEIT -EMIS -Innovation | -GEIT -EMIS -Innovation | -GEIT -EMIS -Innovation | -GEIT -EMIS | -GEIT -EMIS | |
| Desired Results | | | - BU representatives | -Aetna Navigator review | -Launch Aetna Navigator - GEIT and EMIS review | | -Total adoption of projects -Considerable business value |

As you can see, we decided to implement the three projects simultaneously, because we found out that they are complementary. The simultaneous implementation may allow us to save time, and money so. In case of implementation problem, we could stop the process and select the ones we will keep in the COBIT 5 process.

Finally, the projects could face challenges that could interrupt the processes, even stop them. Therefore, we must prevent them and determine factors helping in their implementation success. The list of possible failures are not exhaustive, see **figure 23**.

Figure 23: Challenge factors vs Success factors – Phase 4

| Challenge Factor | Success Factors |
|--|--|
| Communication issues | Concentrate on awareness communications on specific pain points and drivers |
| High level of organization complexity (structure, operating model, organization) | Training in COBIT 5 about standards, best practices and implementation methods and contact external auditors |
| Higher budget | Review of budget priorities |
| Ineffective governance | Regular review and meeting with the head officers |
| Lack of data from department | Concentrate on awareness communications on specific pain points and drivers |
| Lack of data information | Obtain external aid from data center |
| Lack of knowledge of IT system | Training in COBIT 5 and its implementation |

| | methods |
|---------------------------------------|---|
| Lack of knowledge of their own role | Training in COBIT 5 about RACI methods |
| Lack of support from business leaders | Obtain qualified and experienced external guidance and support |
| Poor understanding of GEIT practices | Training in COBIT 5 and IT governance |
| Resistance to change | Use an experienced change agent with business and IT skills |
| Significant delay | Obtain qualified and experienced external guidance and support |
| Trying to implement too much at once | Prioritize quick wins activities not to charge executive in once. |

.5. PHASE 5 [The Year 2002 – 2003]

Thanks to the previous phases, the projects were fixed and developed, now they are ready to be implemented. This way, projects become part of the normal business while being governed by established programs and projects management methods from COBIT 5 framework. Note that all these projects are executed in parallel with the Aetna's current activities.

This phase claims the most effort from the whole Aetna's workforce and the longest elapsed time. In fact, each project will progressively follow the steps of the COBIT 5 process, that means that every IT process, EDM – APO – BAI – DSS – MEA, will be applied for each project.

In the following section, we will address the most important actions that must be done for each project and their main results leading to the next IT process. The list of day-to-day practices, the roles players and the measures system used to monitor each project will be found in the appendixes. Therefore, we mainly focus on the project-specific activities that could happen in every phase. Moreover, the projects have aspects that will not be mentioned, for instance the software programming, marketing project related to IT project or human resource plans, etc.

Furthermore, here we have the RACI chart, see **figure 24**, containing the responsibilities of business during the whole phase 5.

Figure 24: RACI Chart– Phase 5

| Key activities | Board | IT executive committee | CIO | Business executive | IT managers | IT process owners | IT audit | Risk and compliance | Program steering |
|--|-------|------------------------|-----|--------------------|-------------|-------------------|----------|---------------------|------------------|
| Develop and, if required, acquire solutions | | A | C | C | R | R | C | C | R |
| Adopt and adapt best practices | | I | R | C | R | R | C | C | A |
| Test and roll out solutions | | I | R | C | R | R | C | C | A |
| Implement change response plans | I | I | R | C | R | R | I | I | A |
| Direct and monitor projects within the program | I | A | C | C | R | C | I | I | R |

Source: COBIT 5 – Implementation

.5.1. The Year 2002

The starting point is the implementation of EDM and APO process. The beginning of EDM, that means the evaluation, as already done in the last phases. Concerning the other parts, direction and monitoring, need the outputs from MEA process to be executed. In other words, those activities will execute once all processes have been put into practice, that is a first cycle. Concerning APO process, every project has already aligned with IT enterprise goals, planned and organized in the previous phases. Therefore, we will focus on the BAI process.

BAI process role is to manage all programs related to project from the investment portfolio. In other words, it initiates, plans, controls, execute projects, and closes with a post-implementation review. Its aim is to realize business benefits, to ensure the value and quality of project deliverables, and to maximize their contribution to the investment and service portfolio while reducing risk correlated to delays and higher costs.

i. Activities

In the **appendix K**, we can find the details of these IT activities of BAI process.

In GEIT and EMIS project development, the managers face communication issues and an inefficient governance with their workforce. They concluded that those problems come from a high organization complexity and a lack of knowledge of IT system from their employees. Indeed, they need to be more competent to keep pace with IT changes. Therefore, they decided to sign a new co-sourcing contract with the International Business Machines

Corporation – IBM¹⁸ whose purpose is upgrading internal systems development with near and long-term benefit.

The contract will introduce on the one hand uniform methodologies and metrics and on the other hand will provide on-the-job training and delivery run by IBM's staff working on site with the Aetna developers. Indeed, whole Aetna's employees needs to raise the workforce's IT skills in term of systems development and project management, and so to change the broader culture to embrace IT. This contract is profitable for GEIT and EMIS projects. In fact, the contract offers a new form and scale of vendor relationship for Aetna while it impacts IT human resources capability of Aetna.

Concerning the Innovation project, the IT department supervised by CIO develops secretly this project, it is only known by the head officers.

ii. Results

Concerning the GEIT, we can notice that the introduction of BU representative is successful. Indeed, there are active in every meeting and quite involved in IT projects of their own BU. GEIT and EMIS project manager suggest the IBM contract to the Executive Order as key contract for the success of projects.

The review of Innovation project is planned the next year.

Until now, no project managers have complained about the resistance to change from employees, so we can consider that

5.2. The Year 2003

We will proceed to the implementation of DSS process. DSS process is charged of the coordination and execution of IT activities in order to deliver IT operational service outcomes according to the planning. The service outcomes include the execution of pre-defined standard operating process and monitoring activities.

DSS process and MEA process are quite connected, that is why we will discuss both together.

¹⁸IBM is an American multinational company active in the field of IT hardware and software and IT service. Moreover, they also cover areas, such as, on the one hand, the Global Business Services – GBS business consultancy, which intervenes on the organizational layers and the information systems of the company to improve its operational efficiency. On the other hand, there is the service for IT infrastructure, Global Technology Services – GTS, which brings together a range of high value-added service offerings to support companies in their transformation and respond to their new global challenges.

Indeed, thanks to the outputs from DSS process, MEA process can directly be initiated. MEA process role is the collection, validation, and evaluation of business, IT, and process goals and metrics. As well as monitoring if the activities are performing according to agreed-on business goals and metrics. Its purpose is providing transparency of performance and conformance by granting systematic and timely reporting.

i. Activities

The list of DSS IT process is in the **appendix L** and MEA process in the **appendix M**.

Concerning GEIT and EMIS project, the CEO accepted the project of co-sourcing of IBM and they currently work together. Both projects are going as planned.

Furthermore, projects managers are collecting information about the results, their achieved goals, successful metrics, encountered problems, and their possible solutions in order to report a complete summary of the current situation to the CEO.

Concerning the innovation project review, IT department communicates they have set a private beta version to anticipate potential problems. Moreover, the beta test returns positive outcomes.

ii. Results

The next year, the launch of the Aetna Navigator website and GEIT and EMIS projects review is planned.

Here we arrive at the end of the first implementation cycle. In the next phase, all outcomes from each project will be analyzed.

.6. PHASE 6 [The Year 2004]

The objective of this phase is integrating metrics for projects performance and benefits realization of the global governance improvement program. Furthermore, Aetna Navigator was successful put on line for the public.

.6.1. Global Projects Review





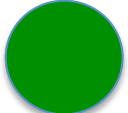

After the implementation of the first cycle of COBIT 5 process, we will review every project to assess performance in meeting the original business goals and in delivering desired business benefits by using feedback and assessment from the business leaders.

For that, we need a Key Performance Indicators – KPI list as well as a suitable technique to

measure the obtained results, so we will use the IT BSC¹⁹, see the **figure 25**. The KPI may be internal metrics, directly related to COBIT 5 process, or external, from an audit agency. In this phase, we will focus on the internal metrics directly related to the IT-related goals. Furthermore, it is important that positive and negative results from the performance measurements are reported.

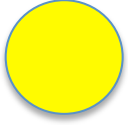

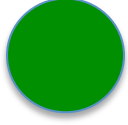

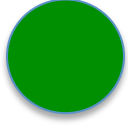

In the case of a satisfying situation, we may consider future activities in order to confirm the realization of even more desired outcomes.

Figure 25: IT Balanced Scorecard – Phase 6

| IT-related Goal | KPI | Status ²⁰ | Trend |
|---|--|---|---|
| Alignment of IT and business strategy | <ul style="list-style-type: none"> - Percent of enterprise strategic goals and requirements supported by IT strategic goals - Level of stakeholder satisfaction with scope of the planned portfolio of programs and services - Percent of IT value drivers mapped to business value drivers |  |  |
| Realized benefits from IT-enabled investments and service portfolio | <ul style="list-style-type: none"> - Percent of IT-enabled investments where benefit realization is monitored through the full economic life cycle - Percent of IT services where expected benefits are realized - Percent of IT-enabled investments where claimed benefits are met or exceeded |  |  |
| Delivery of IT services in line with business requirements | <ul style="list-style-type: none"> - Number of business disruptions due to IT service incidents - Percent of business stakeholders satisfied that IT service delivery meets agreed-on service levels |  |  |

¹⁹The benefits register could be used as well. Unfortunately, I do not have any sources to determine the profit quantity. Moreover, as already mentioned, Aetna knew a turnaround period, therefore we could conclude that the benefits registers were profit making.

²⁰ The measures have been presumed according to implementation of previous phases. Note that all COBIT 5 processes were not implemented, so it is possible than some IT-related are not achieved.

| | | | |
|--|--|---|---|
| | - Percent of users satisfied with the quality of IT service delivery | | |
| IT agility | <ul style="list-style-type: none"> - Level of satisfaction of business executives with IT's responsiveness to new requirements - Number of critical business processes supported by up-to-date infrastructure and applications - Average time to turn strategic IT objectives into an agreed-on and approved initiative |  |  |
| Optimization of IT assets, resources and capabilities | <ul style="list-style-type: none"> - Frequency of capability maturity and cost optimization assessments - Trend of assessments results - Satisfaction levels of business and IT executives with IT-related costs and capabilities |  |  |
| Knowledge, expertise and initiatives for business innovation | <ul style="list-style-type: none"> - Level of business executives awareness and understanding of IT innovation possibilities - Level of stakeholder satisfaction with levels of IT innovation expertise and ideas - Number of approved initiatives resulting from innovative IT ideas |  |  |

Source: COBIT 5 - Implementation

The IT BS shows us that the current situation of Aetna is quite satisfactory, particularly thanks to the implementation of the last project, the co-sourcing with IBM. However, as you can notice, in terms of IT agility Aetna still has some weaknesses. Certainly, because the Aetna Navigator website is just launched and we cannot see outcomes yet.

That is why we prefer to invest in new projects in order to address this competitiveness problem. Therefore, we plan to buy external solutions that will have positive impacts on IT governance principles and mechanism. In fact, ActiveHealth Management Company holds an IT system that has a robust clinical care evaluation and provides analytics for benchmarking the performance of medical providers and plan members. Once the business leaders agree to purchase ActiveHealth Management Company, we can negotiate with them.

.6.2. Update Projects

In this section, we plan to embed new approaches, which mean to review business targets leading to new IT activities. Thanks to the results from the global review, we can conclude that the desired enterprise goals were achieved, given that their IT-related goals were reached, except for the competitiveness, although, we already found a solution for this issue.

Moreover, this time we plan to take into account external metrics, such as CMMI²¹ and Six Sigma²². By taking two external KPI, we want to multiply the metrics in order to reduce risks.

Here we have, the list of new expected approaches:

- Ensure that new ways of working and new IT changes become part of the enterprise's culture, norms and values
- Monitor if assigned roles and responsibilities have been assumed.
- Track the change and assess the effectiveness of the IT changes
- Maintain the communication strategy to achieve ongoing awareness and highlight successes.
- Ensure stronger communication amongst all role players in order to resolve issues.
- Take into account the way in which last projects were implemented actions for future implementation initiatives.

.7. PHASE 7 [The Year 2005 – 2006]

The aim of this phase is assessing the results and experience gained from the projects, recording and sharing lessons learned all along the COBIT 5 process.

Aetna should continually monitor performance, provide that results are regularly reported, and ensure stakeholders are involved and committed.

In the **figure 26**, you will find the RACI chart of the last phase

²¹ CMMI is a reference model, a structured set of standards for several levels (1 to 5) of good practices and processes for producing software and other IT-related activities by apprehending, evaluating and improving the IT management companies.

²² Six Sigma is a structured management method aiming at improving the quality and efficiency of processes.

Figure 26: RACI Chart – Phase 7

| Key activities | Board | IT executive committee | CIO | Business executive | IT managers | IT process owners | IT audit | Risk and compliance | Program steering |
|--|-------|------------------------|-----|--------------------|-------------|-------------------|----------|---------------------|------------------|
| Identify new governance objectives | C | A | R | R | C | C | C | C | I |
| Identify lessons learned | | I | A | C | R | R | C | C | I |
| Sustain and reinforce changes | | A | R | R | R | R | C | C | I |
| Confirm conformance to objectives and requirements | I | A | R | C | R | R | R | I | R |
| Close program with formal review of effectiveness | I | A | C | C | C | C | C | C | R |

Source: COBIT 5 - Implementation

Furthermore, CEO accepted the purchase of ActiveHealth Management. After a long trading period, they successfully arrived to an agreement.

Concerning the external KPI, here we have the results:

- According to the CMMI, we passed from CMMI level 1 to the level 3 in less than 5
- Six Sigma review shows that Aetna increased their quality level

Finally, our study ends here, given that we have succeeded in improving the economic situation of the company. However, the IT activities will always take place.

CONCLUSION

COBIT 5 implementation is quite a lengthy process requiring a lot of effort and commitment from the whole enterprise workforce, as well as colossal investments in frame activities, processes, projects, and programs. Moreover, enterprises must adapt and integrate the COBIT 5 framework into their life cycle.

Nevertheless, are all those adjustments worth it? The answer is: « Absolutely! ». Aetna is a living proof of that. Even if the company was in a catastrophic financial situation, it strengthened in 5 years thanks to ingenious, innovative, and original ideas from its new executive. Note this happened in 2000, at the beginning of the digital age. Aetna's team was amongst the pioneers in its time.

The relevant points of its recovery were:

- Decentralization of decision making within every departments and BU.
- Involvement of the whole workforce in the IT field.
- Regular review of activities, projects, and programs from leaders business in order to detect problems as soon as possible.
- Highly structured series of issues allowing that the problem is first managed and resolved by the nearest business body. In case of an unresolved issue, there is an appeal to the upper business body.
- Executive management information system allowing data sharing amongst departments and financial transparency for the executive leaders.
- Partnership with other entities.
- Creation of a personalized website tool for their customers.
- Data and systems acquisition coming from its rival.

All those things have served as a lesson for later generations. To the point that currently, it is unimaginable to neglect the IT management of companies and it is omnipresent in every business no matter their domain.

The IT management, including IT governance, IT Project management, and IT risk, has become a key business resource for the successful development.

Finally, we wonder: what will the next step be among many technological progresses?

BIBLIOGRAPHY

- Accounting Coach (2017). *What is the monthly close ?*. En ligne <https://www.accountingcoach.com/blog/what-is-the-monthly-close>
- Aetna (2017). *Aetna History*. En ligne <https://www.aetna.com/about-us/aetna-history.html>
- Anderson J (2010). *IT Savvy : What does it mean and do you have it ?*. En ligne <http://theaccidentalsuccessfulcio.com/business-2/it-savvy-what-does-it-mean-and-do-you-have-it>
- Business Finance for best practices for Finance Executive (1996). *Time Is Money: Reducing the Cycle for the Monthly Close*. En ligne <http://businessfinancemag.com/planning-budgeting-amp-reporting/time-money-reducing-cycle-monthly-close>
- CGI (2006). L'avancement des technologies Internet prépare la voie à l'évolution des entreprises. *Point de vue sur la technologie*. Vol 1, No. 1, 1-6
- CMMI (2012). Le « Capability Maturity Model Integration MS » expliqué simplement. *CMMI & SQLI Group*. En ligne http://www.labri.fr/perso/xblanc/data/CP/CMMI_SQLI_LABRI_nov2012.pdf
- Dedić N. & Stanier C. (2016). Measuring the Success of Changes to Existing Business Intelligence Solutions to Improve Business Intelligence Reporting. Lecture Notes in Business Information Processing. *Springer International Publishing*. Vol 268, 225-236
- Gibson C. (2006). IT Enabled Business Transformation: The Aetna case: CISR Research Briefing. *MIT Sloan CISR*, Vol VI, No. 3B, 1-4
- Isaca (2012). *COBIT 5 A Business Framework for the Governance and Management of Enterprise IT*. Isaca
- Isaca (2012). *Enabling Processes*. Isaca
- Isaca (2012). *Implementation*. Isaca
- Isaca (2017). *Why uses COBIT 5 ?*. COBIT Focus En ligne <https://cobitonline.isaca.org/about>
- K4Health (2017). *What is PEST Analysis?*. En ligne https://www.k4health.org/sites/default/files/migrated_toolkit_files/Handout%20PEST%20Analysis.pdf

- ManagementMania (2016). *Strategic Business Units (SBUs)*. En ligne <https://managementmania.com/en/strategic-business-units-sbus>
- MindTools (2017). *SWOT Analysis. Discover new opportunities, manage and eliminate threats*. En ligne https://www.mindtools.com/pages/article/newTMC_05.htm
- Moulière P-M. (2014). *Les outils de gouvernance des systèmes d'information*. MSIT Network. En ligne <http://www.msit.org/2014/04/29/les-outils-gouvernance-systemes-dinformation/>
- PwC (2011). *Canadian business perspectives on the governance of enterprise IT (GEIT)*. En ligne http://www.isaca.org/Knowledge-Center/Research/Documents/Canadian-business-perspectives-on-the-governance-of-enterprise-IT-GEIT_res_Eng_0211.pdf
- Sylvester D. (2011). *ISO 38500 – Why Another Standard?*. Isaca
- Thomas M. (2015). *Les publications clés de COBIT : Coup d'œil rapide*. COBIT Focus. En ligne <http://www.isaca.org/COBIT/focus/Pages/the-core-cobit-publications-a-quick-glance-french.aspx>
- Ziff Davis (2017). *Encyclopedia*. En ligne <https://www.pcmag.com/encyclopedia/term/44076/hard-coded>