Business Process Transformation to
Dynamize and Improve
Fulfilment and Assurance Agility in CSPs
Daniel Olim

Abstract—Over the years, the Information, Communication and Technology (ICT) business has grown quickly to adapt to customers’ demands. The transformation towards a digital telecom ecosystem has resulted in a myriad of ways for services provisioning as well as operational and organizational complexity. That complexity, essentially in the alignment between the network, the Information Technology (IT) and the Business is a major and crucial challenge in today’s Telecommunication Industry.

The current business frameworks that try to mitigate the above challenge, the Enhanced Telecommunication Operations Map (eTOM) from the Telecommunication world and the Control Objectives for Information and Related Technology 5 (COBIT5) on the Corporate world, although relying on different conception and efforts, both have the same purpose, i.e., to align and improve the business-IT harmonisation. It is, therefore, the objective of this work, to design a method for the enrichment of the eTOM’s Fulfilment and Assurance processes, to harmonise and to interwork with a COBIT5.

The work developed defines each framework for the Telecommunication industry, and proposes the first steps for their interworking and bridging at the services provisioning domain. For a better perception of the applicability and complementarity of those good practices, evaluating and understanding the frameworks and approach, a complementary study within the Portuguese telecommunications operators and products and services providers, as well as Start-ups in the sector, is also provided.

Index Terms—( Enterprise IT Framework, eTOM, OSS, BSS, COBIT5).

1 INTRODUCTION

SIMPLIFICATION remains one of the enthusiastic business buzzwords. Business simplification is an opportunity to agile business creating accurate time to markets with quality (of services and of experience).

Over the years, the ICT business has grown quickly to adapt to customers’ demands and new technologies [1]–[3], emerging in myriad ways of provisioning services. That fragmentation has been assigned to IT, to the transformation toward a digital telecom ecosystem. The consequent and current gap between IT, network and Business alignment it is crucial and a key aspect of the developed work.

The current business references to mitigating the gap above, one of the Telecommunication world–eTOM [4], [5] and other of the IT Corporate world COBIT5 [6], [7] relies on different conception and efforts however with the same purpose to align and improve the business-IT harmonisation. It is, therefore, the objective of the project proposed in this work, to design a method for the enrichment of the eTOM Fulfilment and Assurance provisioning process to harmonise and to interwork the COBIT5 and eTOM.

The work developed defines each framework for the Telecommunication industry purpose, and propose the first steps to interwork and bridge in the services domain. Nevertheless, evaluating the approach with a complementary study within the Portuguese ICT industry and the Start-ups sector.

For the purpose of this work, the focus is
Table 1
Business Process Framework Operations

<table>
<thead>
<tr>
<th>Operations Support Readiness</th>
<th>Fulfilment</th>
<th>Assurance</th>
<th>Billing Revenue Management</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Customer Relationship Management</strong></td>
<td>- CRM Support &amp; Readiness</td>
<td>- Marketing Fulfilment Response</td>
<td>- Customer Interface Management</td>
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<tr>
<td></td>
<td></td>
<td>- Selling</td>
<td>- Retention &amp; Loyalty</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Order Handling</td>
<td>- Problem Handling</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Retention &amp; Loyalty</td>
<td></td>
</tr>
<tr>
<td><strong>Service Management Operations</strong></td>
<td>- SM&amp;O Support &amp; Readiness</td>
<td>- Service Configuration &amp; Activation</td>
<td>- Service Problem Management</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>- Service Quality Management</td>
</tr>
<tr>
<td><strong>Suppliers/Partner Relationship Management</strong></td>
<td>- S/PRM Support &amp; Readiness</td>
<td>- S/P Requisition Management</td>
<td>- S/P Problem Reporting &amp; Management</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- S/P Interface Management</td>
<td>- S/P Performance Management</td>
</tr>
</tbody>
</table>

As a final auditing result within the process owner, a major reduction (-77%) on the Operational Expenditure (OPEX) related to management systems could be reached, minimising all the waste.

2 RELATED WORKS

This section presents the few projects or studies within the Enterprise IT and Telecommunication fields that used or addressed the frameworks and methodologies adopted on the project. There are some projects achieved related to IT services improvement using an endorsement of eTOM process with other good reference practices. Some of the proposals are already employed and with a similar purpose to this thesis, making them a starting point for our work.

2.1 Improve the Information Technology Infrastructure Library (ITIL) process in Incident Management with matching Lean-eTOM

The work developed by Tiago Vieira for his Masters Thesis is aimed at the harmonisation and improvement of eTOM and ITIL Fault Management process at Portugal Telecom, the incumbent Telecommunications operator in Portugal [8].

2.2 A Comparison of Common Business Modelling Approaches to GODS Generic Business Architecture

The study of Adrian Grigoriu [9] endeavoured a comparison among some of the most adapted business modelling frameworks and proposed a GODS (Governance, Operations Delivery and Support) single generic Business Architecture. Using the process flow as a common denominator of the comparison, the study proceeded with the mappings but was limited to the top level of the process taxonomies.

The unified scheme proposes to integrate the IT Management (Quality and Business Management) and Enterprise Architecture methods, providing:

- The possibility to improve and be a reference for enterprise governance functions.
- The opportunity to cover and map the business functions and critical flows that characterise the business life-cycle.
2.3 Optimisation of eTOM using The COBIT5 Framework

The work of Latifi et al. [10] focuses on the enrichment of eTOM operational phase using the COBIT5 Deliver services and support (DSS) domain. The result is a mapping analysis of the eTOM horizontal and vertical process groups with the COBIT5 DSS, it is a useful output of the activities and Key Management Practices (KMPs).

This enhancement derives in the Optimisation of the IT Services and Technologies with governance and control capabilities managing the IT Operations from the business perspective.

2.4 Building Bridges: ITIL and eTOM

A study by TM Forum in conjunction with itSMF on integrating ITIL and eTOM to provide a practical collective solution for business support in the telecommunication sector. This report addresses how the TM Forum’s eTOM and ITIL can be used together.

There is a general need when applying ITIL to link it with the business needs and to position ITIL good practice in the relevant business context. Allowing clear guidance to improve the eTOM bases ability to work together in defined domains.

In this document, a formal recommendation offer bringing the two frameworks together, with guidelines enables members and other practitioners to use each one in the most appropriate manner.

Additionally, and most importantly, a strategic view of how to converge ITIL and eTOM is proposed, with precise adjustments to eTOM that allow support for ITIL to be more visible and direct, and which form the basis for a methodology on how companies can apply ITIL good practice through eTOM.

3 Enrichment of eTOM, Bridging with COBIT5

The eTOM developed by TeleManagement Forum (TMF) as a reference framework for categorising all the business activities for Communication Services Providers (CSPs) became a standard of the International Telecommunication Union (ITU) [4]. It provides a generic business process reference for any services provider independently of the technology and organisation [5], allowing a layered view of the crucial business processes required to focus on services effectively with both agility and efficiency.

Different than the other, COBIT5 is the most holistic globally recognised framework for developing, implementing, monitoring and improving IT governance and management practices [6], that allows managers to bridge the gap between control requirements, technical issues and business risks, and communicates that level of control to stakeholders.

The COBIT5 and eTOM framework has strengths and weaknesses and that, if combined, the result would have significant benefits for the telecommunication industry in delivering convergent services to market. So, there are some initiatives within specifics domains trying to converge and address the interworking issues between different frameworks, as shown in Section 2, in general manners.

A presented initiative to enhancement of eTOM with COBIT5, identifying and removing barriers interworking at the day-to-day level it is necessary. However, our idea is how the two frameworks can grow together into a more complementary perspective, each retaining its value in the areas where it is most effective, yet linking with and using the other to reinforce the service delivery domain, as shown in Figure 1 “to-be” approach.

![Figure 1. Bridging eTOM & COBIT5 “to be” strategy model view](image-url)
3.1 eTOM-COBIT5 Comparison

Different than other comparisons, our approach will be based on the telecommunication related company perspective, trying to simplify the complexity and multi-application sector of COBIT5. The overview genesis of each framework it is provided trying to define each key characteristics and reference purpose.

We can immediately recognise some of the specification concerns that result because of the different focus and emphasis that COBIT5 and eTOM take among their separate perspectives. It is not though, a failing between the two frameworks, but an inescapable result of the fundamental differences in their views. Each view has a purpose and benefit, and we must embrace this while trying to cut through the confusion and avoiding conflict.

Nevertheless, the relevance and significance of this underlying technical interworking mechanism remains an essential part of our solution, and so it is discussed further here. Approaching factors such as structural and terminology differences, are significant enough that these also need to be addressed to overcome the obstacles to joint working.

3.2 Mapping Services Delivery Domains

So, the purpose of enhancing the eTOM services delivery domain with the complementation of the COBIT5 Deliver, Services and Support field will be approached with a mapping procedure.

It is, therefore, important to recognise that the extension of eTOM with these COBIT5 processes does not portray an “alternative” set of processes to those already present within eTOM, which then overlap, or even conflict, with the existing process detail. Instead, these COBIT5 processes (and other potential Best/Good Practice processes that might be introduced in the future) must be seen as “templates” that can guide or constrain how the rest of the eTOM processes are applied.

Thus, in a particular enterprise, decisions will be made on the scope and extent of application of the particular good practice process. Some organisations may apply only some of the processes, and those that are used may only be implemented in some parts of the business. This will vary from company to company. Where an eTOM process is employed in a particular area of the enterprise, this affected area, hence the relevant area of COBIT, will follow the relevant eTOM process requirements.

4 Study & Survey Market Perspective

Our study demonstrates that the service providers, however, are creating their own frameworks using other (e.g. eTOM) as their foundation and improving them using their experience gained in various IS projects. This approach helps to fill the gap between theory and practice and helps differentiate companies from competing for projects as:

- Demonstrates a vast knowledge in the area that has been enriched by the knowledge of several successful case studies of other operators/projects.
- Quickly introduce to the customer how to solve problems
- Reduces consulting times and costs compared to the time spent using market frameworks (e.g., eTOM, COBIT5)

In the Portuguese carriers, there are currently modelling their processes and mapping with the eTOM, taking the COBIT5 as another framework for other industry and not for their scope, dismissing the governance strategic best practices function.

In another hand, the entrepreneur world study demonstrated the dilemma between using the business best practices – in multiples ways, i.e, IT Strategy or operational reference– or just caring about their disruptive idea.

5 Conclusion

The combined eTOM-COBIT5 developed provides the first steps and an opportunity for service providers to use the best of both worlds to strengthen and constitute a strategic business process environment. Both frameworks are complementary to each other and can deliver incremental value to the process likeness efforts. Nevertheless, we claim that the initial objectives have been adequately reached in a
particular manner, i.e., contributing to the simplification and dynamisation of the business and operation schema of a service provider, building bridges and defining frameworks in this particular business context. The solution streamlined and consolidated separate reference environments (eTOM-COBIT5), thereby generating an opportunity to recognise redundant areas and opportunities for process improvement.

As first steps taken, this is presently an academic research, the urge of standardisation and cooperation is one of the biggest challenges. The close efforts of the TM Forum in conjunction with ISACA to provide a pragmatic joint solution for the ICT sector, concerning the business and ecosystems survival is a must for the telecommunication services provider industry.

So, the solution provided to mitigate technical harmonisation difficulties can be further discussed with standard organisation groups, as the limitations resided mostly on not having been addressed and discussed with industry groups the viability details of processes and terminology articulations.

The intricacy of the associated work should not be depreciated; the COBIT5 and the eTOM frameworks are not by any means, easy models to understand and comprehend. So it must be considered that any individual not familiar with these subjects will have to take quite a steep learning curve, both to manage the knowledge, whilst simultaneously being able to take the full benefit of their potential. However taking into account the time limitation, we can argue that there is value bridging the frameworks in the core aspect of services delivery, to handle the conceptual complexities, thus contributing to the facilitation of their adoption and benefits.

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References