

Chapter 9

Concept of Approach to Optimize ICT Management Practices: State of the Art

Manuel António dos Santos Landum

 <https://orcid.org/0000-0002-6688-1686>

Faculdade de Ciências e Tecnologia, Universidade do Algarve, Portugal

Leonilde Reis

Instituto Politécnico de Setúbal, Portugal

M. M. M. Moura

 <https://orcid.org/0000-0001-6228-1627>

Faculdade de Ciências e Tecnologia, Universidade do Algarve, Portugal

ABSTRACT

The rapid evolution of information and communication technologies (ICT) has led to changes in business processes, namely in public services or in local administration. Currently, customer expectations are focused on an incremental modernization that may imply greater mobility, cost reduction, and response times. This chapter describes a multidisciplinary and integrative approach considering the specificity of the Portuguese local administration. The proposed approach assumes of continuous improvement within the scope of integrated and sustained governance, which is based on the alignment of ICT with business. Thus, it is recommended that the contributions of the approach are the optimization of practices established in the domains of sustainability, human capital, increased productivity, optimization of information security practices, and improvement of environmental quality, promoting alignment with Green IT.

DOI: 10.4018/978-1-7998-4099-2.ch009

INTRODUCTION

In Local Administration (LA), some processes are framed by the applicable legal structure and the degrees of change allowed are few. Moreover, in public services in general and in local administration, budgetary considerations and permitted forms of resource acquisition limit change. Organizations feel the need to expand, improve their services and reduce response times to citizens, who are their customers. Addressing this need for improving the infrastructure of Information and Communication Technologies (ICT) is limited by investment capacity, which is conditioned by recession or low economic growth.

As a rule, these organizations are still confronted with the paradigm of large costs. When organizations intend to be on the forefront of innovation, following technological innovations, the costs are high because recent technology is expensive; on the other hand, if they fall lag behind the costs of technological recovery to maintain competitiveness with similar organizations, or with municipalities eventually better positioned technologically and with relevant services, are equally large.

The optimization approach must be sustained in the alignment of ICT with the business, aligning processes and quality of service with the organization's strategies, in an integrated and sustained governance process. Thus, a continuous process of optimization of practices is necessary to increase productivity, the release of human resources for other tasks of added-value, increased information security and the improvement of environmental quality, without this resulting in increased costs.

In a previous study, an assessment of the adoption (Landum, 2012) of cloud computing in the context of public and local administration to foster quality of service subject to low capital expenditures (CAPEX) and operating expenses (OPEX) was conducted. Among the factors considered in the study, focus on quality of service, compliance with legal guidelines, and Green IT appeared as drives to policy making and IT governance. Following that study, change ensued and led to a continuous process of optimization of ICT management practices. This chapter describes the approach taken in this continued process.

Following this introduction, relevant topics of a systematic review of the literature concerning ICT management are presented in section 2. The approach taken in optimizing the infrastructure and systems is described in section 3 and its application in the context of a public and local administration is discussed in section 4. In section 5, conclusions and final remarks will be drawn, identifying future work and highlighting best practices to further the alignment with Green IT.

ICT MANAGEMENT

Technology, pace of life and climate change in our present time change at previously unimaginable speeds.

In this way, it is necessary that ICT can provide powerful tools that help in each organization's strategies, by not degrading environmental sustainability, in alignment with Green IT, but that can simultaneously bring advantages that help improve and strengthen each organization.

The review of the literature presented here is supported by references and papers cited, whose research was based on key words according to the theme to be addressed, and based simultaneously on articles on the subject, which allow us to jointly treat the sustainability analysis.

24 more pages are available in the full version of this document, which may be purchased using the "Add to Cart" button on the publisher's webpage:

www.igi-global.com/chapter/concept-of-approach-to-optimize-ict-management-practices/260558

Related Content

Software Engineering and the Systems Approach: A Conversation with Barry Boehm

Jo Ann Lane, Doncho Petkov and Manuel Mora (2008). *International Journal of Information Technologies and Systems Approach* (pp. 99-103).

www.irma-international.org/article/software-engineering-systems-approach/2542

Improved Fuzzy Rank Aggregation

Mohd Zeeshan Ansari and M.M. Sufyan Beg (2018). *International Journal of Rough Sets and Data Analysis* (pp. 74-87).

www.irma-international.org/article/improved-fuzzy-rank-aggregation/214970

An Empirical Study on Software Fault Prediction Using Product and Process Metrics

Raed Shatnawi and Alok Mishra (2021). *International Journal of Information Technologies and Systems Approach* (pp. 62-78).

www.irma-international.org/article/an-empirical-study-on-software-fault-prediction-using-product-and-process-metrics/272759

New Trends and Tools for Customer Relationship: Challenges in Digital Transformation

Ana Lima and Jorge Pacheco (2019). *Educational and Social Dimensions of Digital Transformation in Organizations* (pp. 1-26).

www.irma-international.org/chapter/new-trends-and-tools-for-customer-relationship/215133

Quality Control Using Agent Based Framework

Tzu-Liang (Bill) Tseng, Chun-Che Huang*, Yu-Neng Fan and Chia-Hsun Lee (2015). *Encyclopedia of Information Science and Technology, Third Edition* (pp. 5211-5223).

www.irma-international.org/chapter/quality-control-using-agent-based-framework/112970