# Guest Editorial Preface

# Special Issue on Information Systems and Technologies for Auditing

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Information Systems and Technologies for Auditing has been a research topic in Information Systems since the 1970s. A relevant contribution to that was the recommendation created by AICPA (American Institute of Certified Public Accountants) in 1979, on Computer-assisted Audit Techniques' use (AICPA, 1979). Several papers on the use of Computer-Assisted Audit Tools and Techniques (CAATTs) were published in those early years as on surveys of techniques on Auditing Electronic Data Processing-based Accounting Information Systems (Cash, Bailey, & Whinston, 1977), on available features in auditing software (Neumann, 1977), use of CAATs by Information Technology Auditors (Lovata, 1988, 1990), and Continuous Auditing (Kogan, Sudit, & Vasarhelyi, 1999).

Research in this area, taking the last two decades, emerged with other topics and new areas popped up as new trends on CAATs, determinants on use and acceptance, and new areas on CAATs' use (as in fraud and anomalies' detection). Therefore, a Special Interest Group on ICT for Auditing, WICTA, was formed in 2013, and was integrated into Iberian Conference on Information Systems and Technologies (CISTI) in 2014, to discuss and identify new topics and trends, and to present full papers in fifteen recommended topics as follows:

- Computer-Assisted Audit Tools (CAATs): Acceptance and Adoption, Use and Impacts;
- New Trends on Auditing and Challenges on Auditing Profession;
- Audit, Risk, and Control in Information Systems;
- Fraud Prevention and Anomalies' Detection: Data Analytics, Data Mining and Text Mining;
- Standard Audit Files applied on Reporting Obligation Compliance and Tax Authorities Audits;
- E-auditing and Tax Administrations;
- Open Source CAATs and Statistical Techniques and Tools;
- Continuous Auditing and Embedded Audit Modules in ERPs;
- Auditing in New Contexts: Big Data, Cloud, Mobile Devices and Social Networks;
- Models for Evaluation of Financial Instruments; Internal Controls & Automation;
- Auditing and Performance Management in the Public Sector;
- Computer-Assisted Audit Tools and Techniques (CAATT) and IT Governance;
- Data Requirements, Data Quality, and Audit Quality, and Monitoring in Real Contexts: Dashboards and other Tools.

After the 6th edition of WICTA, which happened in 2019, the WICTA Organizing Committee decided to propose a Special Issue on Information Systems and Technologies for Auditing, integrated

into the International Journal of Information Systems in the Service Sector (IJISSS), to publish extended researches on the most recent topics on Information Systems and Technologies for Auditing. Seventeen papers were submitted to that Call for Papers. After a double-blind review process, only five papers were accepted and are now part of this Special Issue. This Editorial Board intends to keep the discussion on WICTA and to spread the debate evolving more and more researchers and Universities.

The authors of "Continuous Sampling Method for Batch Auditing in Cloud Storage" propose the use of low-cost techniques to do real-time detection of data corruption and misbehaviors in Cloud Service Providers on data outsourcing. A continuous sampling technique on random data blocks is used to promptly detect modifications and data corruption, with no delays on data access.

The paper "Skills Development Factors of Information Technology Competency Among External Auditors" presents a survey on factors that influence IT competence on external auditors in Yemen – which have still low competence on IT. It concluded that, in a universe of 328 external auditors from public and private auditing companies, the strongest factor that influences IT competence is self-direct learning, and the second is accounting education, both factors having a positive influence. This conclusion demonstrates that there is still a need to promote initiatives, among auditors, to develop skills and competency in IT.

In the paper "Waste Control in Catering Company: Data Analysis and Decision Interfaces" the problem of food waste in Collective Catering Units (CDU) in a Portuguese Catering Company is addressed. The main objective is to create new tools, based on analytics on historical data, to better decision making, by using new KPIs, defined by this paper authors, and a real-time decision dashboard. This approach was tested and validated by the company, during 4 months and in 6 CDUs.

The paper "Aggregating Multidimensional Criteria in Audit Decision Making" debates the topic of aggregation of noncomparable properties and noncomparable scales of measurement by proposing scale transformations and normalization and addressing problems of validation of additive models and interpretation of the physical sense of the result arise. A multiplicative performance aggregation of properties' values is suggested for decision making, which enables consistent and unambiguous ranking of the alternatives in regard to values of all their properties of interest. A Decision Making (DM) problem and example of DM related to audit activity planning is considered and authors concluded that this approach is generalizable to other DM application problems.

Finally, the paper "Assessment of the purpose of the use of GAS: A Perspective of Internal Audit Functions in Australia" goes into the purpose for measuring and define a benchmark on how a data analytics tool, a specific type of Generalized Audit Software, GAS, is being utilized by internal audit functions, Chief Audit Executives, CAEs, in Australia. The results of the study can be used by CAEs to identify their position compared with the current best practice in the area of technology-based tools and techniques for tests of controls.

We would like to thank to all the reviewers of this special issue and the members of program committee of the Special Interest Group of ICT for Auditing, WICTA, from 2014 to 2019 for their valuable work, reviews, suggestions and comments.

We hope you enjoy the issue!

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