# Developing a Performance Measurement Based Key Performance Indicator Catalogue for Electronic Invoicing

**Bachelorarbeit**

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vorgelegt von


Name: Japing [redacted] Vorname: Tonio André [redacted]


Prüfer: Prof. Dr. Michael H. Breitner

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# 1 Introduction

Digitalisation is one of the key words in the ongoing discussion about existing and upcoming IT-Trends. Along with Industry 4.0, Big Data and Internet of Things (IoT), Digitalisation stands both for promises such as innovative technologies and reaching out to new potential customers as well as expectations to save resources. While IT-Investments have increased productivity and consumer value at the macro level, market entry barriers reduced potential monopolies and thereby increased competition.[1] Against this background, the thesis grasps on to the discussion whether IT is considered a key asset[2] or a commodity, meaning that "IT doesn't matter"[3]. In the content of Digitalisation, Electronic Invoicing (EI) is one of the early outcomes. While the technology itself is not new, it has continuously resulted in new software products over the last 10 years. Since then, more and more software developers like Lexmark, SAP, Kofax, DATEV and others offer software for installing and configuring EI solutions for organisations. However, it is questionable to what extent the promises that come along with EI are realised. While there is evidence about Electronic Invoicing and its positive usage, the outcome is rather generally described: saving costs and fully integrated processes tend to simplify the issue and do not consider an organisation's individual settings. Therefore, this thesis aims at creating a white paper for measuring the performance of EI-Systems in organisations. The prior aim will be to develop a first design of a Key Performance Indicator (KPI)-Catalogue. Thus, the feedback of experts in the field is gathered. Consequently, a first design of a framework that considers the most important KPIs for specific areas of measurement is provided. Hence, a first attempt of a holistic KPI-Catalogue is available. To the best knowledge of the author, such a specific attempt for an application related KPI-Catalogue does not exist yet. First, the functionality and Status Quo of Electronic Invoicing is presented. Then, the theoretical basics and requirements for KPIs will be pointed out. Besides, few general KPI-Systems will be presented. As a result, IT-Accounting will be deduced, which is considered as a relatively new discipline. However, this does not apply to Financial Accounting. Early approaches date back to the early 20th century. That is why it is necessary to deduce IT-KPI-Systems and to put them into the right content of Accounting. Based on these findings, a first layout of a Performance Measurement Framework will be presented. The methodical challenge lies in breaking down thematically widespread Accounting literature to IT-Accounting in a first step. Afterwards, legitimate KPIs for IT-Performance Measurement are identified and visualised in KPI-Keycards.

[1] Cf. Bharadwaj, Bharadwaj and Konsynski (1999), p. 1008.
[2] Cf. Kesten, Müller and Schröder (2013), p. 9.
[3] This phrase refers to a well-known article by researcher Nicholas Carr (2003), who claims that IT cannot generate competitive advantages anymore due to its diffusion.

stantly changing systems.[290] It is questionable to what extent this aspect is represented. However, it was pointed out in the discussion (cf. Chapter 6.1) that in the ideal case PM-Systems should constantly undergo evaluation and adapt if necessary.

Extraordinary difficulties arise in the selection of experts. As pointed out in Chapter 5, there are specific methodical requirements in terms of 'experts'. Three interviews with highly qualified interviewees were conducted. Therefore, participants had to have knowledge in Electronic Invoicing as well as Accounting. However, the amount of participants is not representative.

# 7 Conclusion

The aim of this thesis was to develop a KPI-Catalogue for Electronic Invoicing. This was realised by first describing Accounting and the idea of Performance Measurement with its holistic approach for measurement. Next, IT-Accounting was positioned within the content of Accounting. Next, the specific requirements of Performance Measurement for IT were deduced. As a result, the theoretical framework was defined. The framework results from deducing ideas and insights from literature and empirical research, helps to describe the organisational relationships and provides reporting mechanisms. The process of Performance Measurement is illustrated by the links between different organisational units and how Performance Measurement for Electronic Invoicing is utilised. Finally, performing PM results in the main goal of IT-Accounting: to support the decision-making process.

Then, KPIs were deduced to complete the framework for IT Performance Measurement. Therefore, empirical research revealed best practices in the field of Performance Measurement for Electronic Invoicing. The qualitative content analysis according to Mayring pointed out the dimensions and some KPIs for Performance Measurement. It was clearly stated, that measuring the performance for Electronic Invoicing is regarded as useful. Reasons for that are probable technical, financial and organisational consequences of a blackout as well as ensuring previously mentioned benefits. Yet, it was also shown that certain backup mechanisms like SAP-Mirroring and manual booking are already being used by organisations.

As a result, this thesis reveals a new aspect in the field of Electronic Invoicing. To the author's best knowledge, these findings are new in academic research about Electronic Invoicing. Consequently, new possibilities for research are available. First, the KPIs represent suggestions. The evaluation in a questionnaire is recommended to pick the most

[290] Cf. Kütz (2011), p. 71.

important KPIs from each category. The questionnaire would be accessible via Internet and attract more participants. Second, target-values and threshold values are not specific. Third, recommended action that result from crossing threshold values are still open to discuss. Finally, linking IT-PM with Benchmarking (cf. Chapter 4) is an open topic to discuss. Therefore, this thesis is the foundation to either develop individual KPIs or pick the KPIs from the presented catalogue.

Further research potential aims to encourage a link between IT-PM and the 'Technology Acceptance Model (TAM)'.[291] The idea is to explore the acceptance of potential users to use Performance Measurement.

Finally, the interest by professionals is perceived as very high. Such interest from experts in the field is an ideal opportunity to gather further insights, perform field tests and evaluate best practices.

[291] Cf. Marchand and Raymond (2008), p. 680.