



FOM Hochschule für Oekonomie & Management Essen

university location Muenster

Bachelor Thesis

in the study course Wirtschaftsinformatik - Business Information Systems

to obtain the degree of

Bachelor of Science (B. Sc.)

on the subject

Make or buy? Comparison of commercial and a custom developed audio call generator in example of a large telecommunications company

from

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Submission: 2020-11-12

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Confidentiality Clause

This thesis with the title “Make or buy? Comparison of commercial and a custom developed audio call generator in example of a large telecommunications company” contains internal data of the company Deutsche Telekom Business Solutions GmbH . Therefore, it is only intended for submission to the FOM and the reviewers of the thesis. It must not be accessible to the public or third parties.

Muenster, October 6, 2020

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1 Introduction

1.1 Introduction

Deutsche Telekom Business Solutions GmbH is a national subsidiary of Telekom Deutschland GmbH founded in 2020. Chapter Voice, which belongs to the superordinate segment of Delivery Fixed Line Services, deals with the provision of communication solutions for business customers. The scope of duties ranges from setting up and configuring virtual and physical telephones to the administration of databases that are required for the correct operation of certain systems. Another area of responsibility of the chapter is the testing of Voice over IP (VoIP) communication solutions. Among other things, it is checked whether a phone call can be established and, if so, how the audio speech quality is evaluated. This is currently done subjectively and manually, i.e. a call is established by hand. This call is usually set up via different terminals or telephone types. If it is possible for both participants to understand each other well, the test is passed.

Testing using this approach has multiple disadvantages:

- The process is very time-consuming, as usually several devices have to be tested;
- the process requires at least two physically present employees;
- the process is based on subjective perception. No quantitative assessments are made with regard to the speech quality.

In order to carry out the testing process more efficiently and effectively, a so-called "call generator" can be used. Alan Freedman defines a call generator as hardware and/or software that simulates voice calls.¹ This system can be used to automate the process of testing. There is also the possibility to implement many additional functions in the testing process, which are not available while testing manually.

¹ Refer to *Freedman, A.*, n. d., para. 1.

1.2 Objective and Organization

1.3 Hypotheses

1.4 Limitations

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2.1.1 Session Initiation Protocol

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4.1 Requirements Elicitation

Appendix

Internet sources

Freedman, Alan (n. d.): ComputerLanguage.com, <<https://www.computerlanguage.com/results.php?definition=call+generator>> (no Date) [Access: 2020-09-14]

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