Choice of Topic for Master Thesis

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Introduction

Every student has to complete a master thesis towards the end of his studies. There are some things to keep in mind when choosing the topic. This document serves as a guide to the selection and definition of a topic under my supervision.

Choice of the customer / stakeholder

The customer or stakeholder is the person who has a primary interest in the implementation of the thesis. In most cases, the stakeholder defines the topic or is at least heavily involved in the topic definition. As a general rule of thumb, the result of the thesis is used by the stakeholder after its conclusion - hence the term customer. Ideally, a piece of software can be used directly, but sometimes only the newly generated knowledge from the thesis is used. The choice of the stakeholder has a lasting influence on the direction and the result of the thesis and should be well considered.

The following groups of stakeholders are available:

- **Company:**
  The topic is generally proposed by a company. This choice of stakeholder should be preferred whenever possible.
  - **Advantages:**
    Proximity to practice, getting to know every day working life, getting to know the company, possibly remuneration, simple career start, ...
  - **Disadvantages:**
    More complex topic search and definition

- **Lecturer / professor:**
  Here, the supervising staff member has high self-interest, usually because he needs the results of the thesis either for his teaching or for his research. Potential topics are usually found on the bulletin board or on the website of the lecturer.
  - **Disadvantages:**
    Career entry more difficult
  - **Advantages:**
    Simple topic finding

Of course, you can have your own ideas for a thesis topic. However, one then faces the challenge of convincing either a lecturer or a company of the subject. Officially, the topic is provided by the university, so there is no guarantee that someone will be supervising the topic you have chosen.

I discuss potential topics that are not my own, only in a personal conversation, if a complete thesis proposal (see below) has been handed in to me.
Requirements for Master's degree

When defining the topic, it should be noted that there are certain minimum requirements for a Master’s degree. These requirements are defined by various official institutions, such as the EU or the Conference of Ministers of Education. The details of these requirements are summarized in a separate document (Requirements for Master’s Degree) which can be found on my website.

Thesis Proposal

If you have found a topic and ideally also a corresponding stakeholder, I expect you to submit a thesis proposal before discussing and registration is possible. A thesis proposal covers approx. 4 pages and describes in your own words at least the following points:

- Title of the thesis
- Goal of the thesis, i.e. what should be achieved with the thesis?
- Content, i.e. what exactly should be dealt with. What is the planned way to the solution?
- Delimitation of the thesis, i.e. which of the adjacent areas shall explicitly not be dealt with.
- Description of the context, so what is the theme in the overall context, i.e.
  - Which other system components play a role,
  - Which company sets the topic (department and tasks of the department),
  - Who manages the topic in the company (name, email and telephone number),
  - Why does the company want to have the topic implemented?
  - What advantages would the company have from an implementation of the topic
- Planned project management method
  - Planning of the time budget for literature research, implementation, testing, validation & writing
  - Scheduling
- Proposal for the second supervisor
- First selection of literature - the literature research is part of the thesis and therefore does not need to be complete - but a first overview should exist. In particular, it sufficient amount (at least 3-5 documents) of appropriate literature, i.e. books and scientific articles, must exist in the list.

The proposal should be written in such a way that an outsider has all the information necessary to be able to assess the topic. Typically, the thesis proposal can be more or less directly used in your final thesis.

Thesis registration

Registration of the thesis by the supervisor at the examination office is usually done after a personal interview.
Concluding remark

I hope that I have clearly shown the necessary steps to register a thesis and I wish you every success in choosing a suitable topic for your Master’s thesis.

Felix