

WRITING A MASTER THESIS (MSc) AT THE CHAIR OF LOGISTICS MANAGEMENT – INFORMATION FOR STUDENTS –

March 2014

REQUIREMENTS AND EXPECTATIONS

The master thesis constitutes an important element of the MSc ETH MTEC program. The master thesis carries a weight of **30 ECTS** and an overall **workload of six month full-time** (~800 hours). It represents an **independent** piece of scholarly work which testifies the student's knowledge of the foundations, structures, and methodologies underlying the topic. Our expectation is that master theses make an original contribution to knowledge.

CHOSING A TOPIC

The initial and most important step is the choice of the master thesis topic. You should endeavor to find a topic which...

- ... is of direct and intense interest to you. However, it is a common mistake to spend too much time trying to find “the optimal” master thesis topic. Please realize that there is a variety of possible topics that are suitable.
- ... is not so remote from your area of expertise that acquiring the necessary background will lead to an excessive delay. You do not have to be an expert in supply chain management or management theory to conduct your master thesis with our chair, but it is highly recommended to attend at least one of our courses.
- ... is of academic and/or practical relevance.

If you are interested in supply chain or logistics management, industrial marketing management, or purchasing, we will support you in this endeavor to find a suitable topic.

(1) Suggested topics

On our homepage, you find a list of suggested topics which tie in closely with ongoing research projects at our chair. **We encourage you to have a close look at these topics and consider them.** If you have specific questions about any of the listed topics, please contact the indicated contact person directly by email.

(2) Topics based on own ideas or internships

If you have your own ideas or wish to conduct your master thesis within a company, please ensure that the substantive area in which you wish to do research is closely linked to our areas of expertise. So please check-out the team members' research interests and publication records before you contact us. Students who would like to develop a topic based on own ideas must first submit a proposal which includes the following elements:

- **Title:** The title should clearly and succinctly convey the essence of the study.

- **Purpose/Research problem/research questions:** Here, the research problem that you seek to address should be made clear. What is the puzzle that you are trying to solve? Why is it a puzzle?
- **Design/methodology/approach:** The design of the study (i.e., case studies, action research, survey method/cross-sectional design) is essential.

(3) First meeting with supervisor

Based on your interest in one of the suggested topics or your proposal, we will arrange a meeting for further specification of the topic. **Prior to the meeting, send us your CV by email** so that we know about your background and specific skills.

(4) Formal start of the master thesis project

- The MSc thesis can only be written if the internship has been accomplished beforehand.
- Prof. Wagner will serve as the master thesis tutor and (possibly) another member of our team as your supervisor who will be your direct contact person throughout the master thesis process.
- Before you start with your project, you have to prepare two documents and submit them to Uschi Kempe-Kress who will ensure that they are signed by Prof. Wagner and forwarded to the Student Affairs Office:
 - *“Admission to start master thesis”*
 - *“Agreement between Master Tutor and Student”*
- With these documents, you have to hand in a CV, a transcript of the Bachelor courses taken, and a performance record from MTEC. For each supposed supplementary course, we request a printout of the official course description. None of these courses may have been offered by MTEC. For each course, you have to demonstrate that it was technical/scientific in nature, fitting to the Bachelor degree and contained no major element similar to a course offered by MTEC (such as “innovation”, “management”, or “HR”).
- Also enroll on mystudies for your master thesis.

MANAGING THE PROCESS

- During the first month(s), create an outline of the thesis and present it to your supervisor.
- Stay in touch with your supervisor and keep him/her regularly updated about your progress.
- Always keep in mind: A master thesis is an **independent** piece of work! Therefore, **we expect you to work independently and show initiative, leadership, and creativity** in the sense that you **tackle upcoming questions and problems yourself, before contacting your supervisor**. The role of your supervisor is to guide you through your thesis (e.g., hint at important literatures, give possible directions, suggest ways out of dead ends), but the actual work has to be done by you. You may get stuck, of course, after exhausting your possibilities, and then you are always welcome to solicit help.
- Do not wait until the last minute. Last-minute efforts usually read like last-minute efforts! Plan backward from the date the master thesis is due to allow plenty of time to get it done. A good master thesis requires careful preparation, research, critical thinking, and writing. These steps take time. Also, allow time for the unexpected.
- In case the initially estimated time period turns out to be too short, the time can be extended.

DOING THE RESEARCH

Good research is the foundation of your master thesis. Everything starts with your research question(s)! It stands to reason that without a solid foundation, the master thesis you write will inevitably be weak. Research relies on knowledge compiled by and analysis done by oth-

ers. If you write a master thesis without consulting the literature, then you have written an essay, not a research report. As a general rule, your master thesis will be stronger if you use a good variety of the most fundamental, most up-to-date, and most specific resources.

When you are doing your research it is important to be creative. Start out by reading the references provided by your supervisor and/or a few general studies on your topic. This will give you a broad grasp of your topic and will help you identify what is important and on what you need to focus your research.

Libraries and online-sources contain many types of resources that you can utilize to do your research. The following list is a mere beginning:

- *Books*. Some books are fundamental to the logistics and supply chain field, and at least touch upon the topics assigned for the master theses. Following a non-exhaustive list of books:

Chopra, Sunil; Meindl, Peter (2007): Supply Chain Management: Strategy, planning, and operation, 3rd ed., Upper Saddle River, NJ: Pearson Education

Christopher, Martin (2005): Logistics and supply chain management: Creating value-adding networks, 3rd ed., Harlow: Financial Times Prentice Hall

Dornier, Philippe-Pierre; Ernst, Ricardo; Fender, Michel; Kouvelis, Panos (1998): Global operations and logistics: Text and cases, San Francisco, CA: Jossey-Bass Publishers

Grant, David; Lambert, Douglas M.; Ellram, Lisa M.; Stock, James R. (2005): Fundamentals of logistics management: First European edition, New York: McGraw-Hill

Hutt, Michael D.; Speh, Thomas W. (2003): Business marketing management: A strategic view of industrial and organizational markets, Cincinnati, OH: South-Western College Publishing: South-Western College

Mentzer, John T. (ed.) (2001): Supply chain management, Thousand Oaks, CA: Sage Publications

Schönsleben, Paul (2003): Integral logistics management – Planning and control of comprehensive supply chains, Boca Raton, FL: St. Lucie Press

Simchi-Levi, David; Kaminsky, Philip H.; Simchi-Levi, Edith (2002): Designing and managing the supply chain: Concepts, strategies, and case studies, 2nd ed., New York: McGraw-Hill

Tayur, Sridhar; Ganeshan, Ram; Magazine, Michael J. (eds.) (1998): Quantitative models for supply chain management, Boston, MA: Kluwer Academic Publishers

- *Articles in scholarly journals*. Scholarly journals can deal with certain topics in much greater detail than (reference) books can do. Also, you must consult scholarly journals because scholars may have found new information or conducted new analyses. Following a non-exhaustive list of journals. The letters in brackets seek to assess the average article quality in those journals, ranging from A+ (world-class research) to C (decent academic work):

Logistics/Operations management-oriented:

Decision Sciences (A)

European Journal of Operational Research (*more modeling than empirical*) (A/B)

International Journal of Logistics Management (*mostly empirical*) (C)

International Journal of Logistics: Research and Applications (*application-oriented*) (C)

International Journal of Operations & Production Management (*mostly empirical*) (B)

International Journal of Physical Distribution and Logistics Management (*mostly empirical*) (B)

International Journal of Production Economics (B)

International Journal of Production Research (B)

Journal of Business Logistics (*mostly empirical*) (A/B)

Journal of Operations Management (*empirical only*) (A+/A)

Journal of Supply Chain Management (*mostly empirical*) (A/B)

Management Science (*modeling focus*) (A+)

Manufacturing & Services Operations Management (*modeling focus*) (A+)

Naval Research Logistics (*modeling focus*) (A/B)
Production and Operations Management (*more modeling than empirical*) (A+/A)
Supply Chain Management: An International Journal (*mostly empirical*) (B)
Transportation Journal (B)
Transportation Research, Part E: Logistics and Transportation Review (*confirmatory only*) (B)
Transportation Science (*modeling focus*) (A)

Marketing-related:

European Journal of Marketing (C)
Industrial Marketing Management (B)
International Journal of Research in Marketing (A)
Journal of Business-to-Business Marketing (C)
Journal of Marketing (A+)
Journal of Marketing Research (A+)
Journal of Retailing (A)
Journal of the Academy of Marketing Science (A)
Marketing Science (A+/A)

Sustainability-related:

Business & Society (*slight focus on social/ethical dimension*) (B)
Business Ethics Quarterly (*business ethics focus*) (B)
Business Strategy and the Environment (*all*) (B)
Corporate Social Responsibility and Environmental Management (*all*) (C)
Ecological Economics (*interface economics – business*) (A/B)
Journal of Business Ethics (*business ethics focus*) (B)
Journal of Cleaner Production (*slight focus on environmental dimension*) (C)
Journal of Industrial Ecology (*environmental dimension only*) (A)

Top General Management Journals (always relevant):

Academy of Management Journal (A+)
Academy of Management Review (A+)
Administrative Science Quarterly (A+)
British Journal of Management (B)
International Journal of Management Reviews (*easy to read literature reviews only, frequently a good start in case you find a fitting review*) (B/C)
Journal of Business Research (B)
Journal of Management (A)
Journal of Management Inquiry (B)
Journal of Management Studies (A)
Organization Science (A+/A)
Organization Studies (A)
Strategic Management Journal (A+/A)

- *Articles in practitioner journals.* Practitioner journals may touch upon certain up-to-date topics. For some contemporary topics, books are not yet available. In such cases, practitioner journals are more likely sources of information and analysis. You may consult practitioner journals even for non-contemporary topics because they are a valuable source of examples and case studies to be integrated in the master thesis. Following a non-exhaustive list of journals:

California Management Review
Distribution
Harvard Business Review
Industrial Distribution
Logistics and Transport Focus
Logistics Europe
MIT Sloan Management Review
Railway Age
Supply Chain Management Review
Traffic Management
Transportation & Distribution
Transportation Journal
Warehousing Management

- *Newsmagazines and newspapers.* If you are covering a current topic or need to have a day-by-day account of events and cannot find one elsewhere, you may also turn to newsmagazines and newspapers. Be sure, however, to check with your supervisor to ensure that these are considered acceptable sources for your assignment. Mostly they are useful for facts or for contemporary quotes and are usually not good sources of analysis.
- *Internet/electronic resources.* Over the past few years it has become increasingly easy to find research information about logistics and supply chain management by using the Internet. The following are a number of websites that will get you started in searching for information in the logistics and supply chain management area you may need in writing your master thesis:

www.capsresearch.org

www.supply-chain.org

www.cscmp.org

www.supplychaintoday.com

www.supplychainsites.com

www.logistics.about.com/od/supplychainmgmt

PREPARING THE MASTER THESIS

(1) Structuring the document

The document should consist of the following:

- Title page
- Table of content
- List of abbreviations (optional)
- List of figures (optional)
- List of tables (optional)
- List of symbols (optional)
- Text (from Introduction to Conclusion)
- Appendix (optional)
- Bibliography

More specifically, the text of the master thesis should have:

- An *Introduction* is the key to letting your reader know where you are headed and what you will accomplish. Remember always that while the organization of your master thesis may be clear to you, it is not clear to your reader. Therefore, the introduction is something like a road map that acquaints the reader with the journey ahead. This will make it easier for the reader to understand what follows and will improve the reader's evaluation

of your work. Tell the reader in concise terms what the subject of the master thesis is and why it is relevant.

- A *Main Body* which represents the largest part of the master thesis. It should have a logical organization. Divide the main body into sections designated by headings and sub-headings (depending on the research approach and methodology). Also with regard to your main body, do not assume knowledge on the part of the reader. Include all important information, explain its significance, and detail your logic. Your supervisor wants to know what you know and will not necessarily “read into” the master thesis information that is not there.
- A *Conclusion* section which should sum up what you have found and stress the evidence that supports your analysis. There is something very human about wanting to have things summed up, so do not leave your reader hanging without a conclusion.

(2) Writing the Master Thesis

Besides structure, the other hallmark of a good master thesis is clarity in writing. It is also important to realize that your report will be judged in part by such standards as neatness, grammar, and spelling, and other such technical criteria. Remember that if a master thesis fails to communicate well, then its research – no matter how well done – will have little impact. Following you will find some essential style considerations:

- *Watch your sentence structure.* Students and scholars too often seem to assume that long, complex sentences are symbolic of profundity. They are not; they are mostly just cumbersome. Simple, subject-verb-object sentences are best. They are powerful. Still, if you do not vary them occasionally, numerous short sentences do not “read” well. So, after several simple sentences, add a longer one. But do not go too far the other way. Consider “Rourke’s Rule of 2s”: “Sentences more than two lines long or with more than two commas are probably too long to be understood easily, especially if there have been two in a row.”
- *Rely on active tense, action verbs.* Avoid the passive tense. Similarly, action verbs (made, jumped, went) are better than verbs of being (is, are, were). In general, active/action verbs generate more interest.
- *Use standard English.* Colloquial English typically does not make a good impression unless you are writing fiction.
- *Avoid starting too many sentences with adverbial or adjectival clauses or phrases.* These are the short phrases (such as “In the later stage of the life cycle, the firm is exposed ...”) that are often followed by a comma. Also shun repeatedly beginning or ending sentences with words or phrases such as: however, though, for example, for instance.
- *Watch your paragraph length.* Paragraphs over one page in length are usually too long. They may contain redundant statements or more than one major idea. Rework such paragraphs to delete unnecessary text or to separate ideas into additional paragraphs. At the other extreme, one-sentence paragraphs are not acceptable. Remember that each paragraph should have a topic sentence and several others that explain or develop that topic.
- *Rely on transitions between paragraphs.* Conjunctions such as “On the other hand,” “Still,” “Also,” “Nevertheless,” “Thus,” “However,” or “As a result” help the reader get from one thought to another. They smooth the reading process.
- *Get to the point.* Do not beat around the bush; save a tree; avoid word pollution.

Your master thesis must be free of common writing mistakes. Cautions about some of these are:

- *Avoid sentence fragments.* Every sentence must have a subject and a verb.
- *Check your spelling.* Misspelled words make you appear uneducated, careless, or both. Keep in mind that misspelled words and typographical errors cannot be distinguished from each other by a reader. Both are unacceptable. Try it. Do not rely on just your own

sense of how words are spelled. Use a dictionary, the “spell check” program on your computer, and a second reader to proofread your drafts. Nevertheless, it is crucial to have a human scan your words.

- *Know when and how to use specific punctuation.* Consult dictionaries and style manuals on the proper usage of commas, colons, semicolons, parentheses, brackets, and the like.
- *Make sure subjects and verbs agree.* Subject-verb disagreement is most likely to occur when the two are separated in the sentences by several other words.
- *Be careful of verb tense.* Many poor writers use only present tense. Use past tense, future, and other tenses as appropriate. Also be careful to keep verb tense consistent within paragraphs.
- *Avoid the use of contractions.* Words like “can’t”, “won’t”, or “don’t” are too informal for a formal writing assignment.
- *Be careful of abbreviations.* In logistics and supply chain management a large number of abbreviations is used. But do not expect the reader to be familiar with them. The first time you use an abbreviation, provide the full word(s). Also do not use an acronym unless it is very common without first spelling out the full name, as in, the North Atlantic Treaty Organization (NATO).

CITATIONS, FOOTNOTES AND BIBLIOGRAPHY

(1) When to cite?

A research master thesis must cite the work of others. There are two reasons that citations are mandatory. The first is to allow the reader to explore the subject further by consulting the works that you have utilized. Without regular and complete citations, such further exploration by your reader is difficult or impossible. Second, intellectual honesty requires citations. Failure to use them is plagiarism, which is unacceptable in any form. Plagiarism is the theft of the thoughts, facts, or knowledge of others by not giving them proper credit. Follow these guidelines to protect yourself:

- Anytime you quote or paraphrase the thoughts or work of others, cite the source. It is incorrect to believe that only quotations require citations. You should also insert a note whenever you are relying on someone else’s thoughts or research, even if you are only paraphrasing (putting it in your own words).
- Simple, commonly known facts need not be cited. A rule of thumb is that if you did not know the information before you started the master thesis, then you should use a citation to show where you found the information. Also, even if you know something when you start, you should cite the source of any controversial “fact”.
- When in doubt, cite the source. Plagiarism is unethical. Instructors and other readers take it very seriously. Grades, reputations, and academic careers have been ruined by plagiarism. Err on the side of safety. One citation too many is far better than one citation too few.

The use of correct formats for citations used in the footnotes and the bibliography often seems a bit complex and cumbersome. But the advantages of doing so are completeness and consistency.

(2) How to cite?

The formal style of any thesis should be according to the APA style. See http://en.wikipedia.org/wiki/APA_style or:

American Psychological Association (2010): Publication Manual of the American Psychological Association, 6th edition, Washington, DC: American Psychological Association.

At the end of the master thesis, a bibliography repeats the full documentation of the sources in alphabetical order.

COMPLETION

- **Submission:** At or before the fixed deadline, you have to submit two hard copies (with appropriate binding) and a soft copy (MS Word – not PDF!) of the master thesis. The grade will be based on this document.
 - Each of the hardcopies must include a dated and signed version of the official Declaration of Originality of ETH.
 - A third printout of the Declaration of Originality is also signed and printed and handed to Uschi Kempe.
 - A softcopy of the Declaration of Originality is included in the electronic version.
- Your supervisor will schedule a master thesis defense where you present your study (20 minutes of presentation plus subsequent discussion) to the team of the Chair.
- After the defense, the grade will be determined. The master's thesis is approved if the grade is at least 4.0. If the master's thesis is not accepted (i.e., grade < 4.0), it can be repeated once. In case of repetition, a new subject has to be chosen.

ASSESSMENT

(1) Evaluation criteria

- **Content (50%, Including:** contribution to knowledge development, academic level, comprehensive understanding of the research topic; considering of all relevant aspects, adequate consideration of the existing literature and theoretical concepts).
- **Structure (10%, Including:** a clear outline; logically consistent preparation of the research issue).
- **Language (10%, Including:** technical terms are used and defined; readability of the text, grammar and orthography).
- **Form (10%, Including:** correct citations; consistent bibliography; consideration of formatting guidelines).
- **Master thesis defense (20%)**

Please note that we will also consider the extent to which you worked independently (i.e., without direct help from your supervisor) and demonstrated initiative in solving the given tasks and problems.

(2) ETH Zurich's grading system

6.0 – 5.75	excellent (ausgezeichnet)
5.5 – 5.25	very good (sehr gut)
5.0 – 4.75	good (gut)
4.5 – 4.25	satisfactory (befriedigend)
4.0	pass (genügend)
3.5	fail (ungenügend)
3.0	poor (schlecht)
2.5	very poor (schlecht bis sehr schlecht)
2.0	extremely poor (sehr schlecht)
1.0	not measurable (nicht messbar)
