



DIPLOMA THESIS EVALUATION

Student's name and surname: Chandru Karuppusamy

Name of the diploma thesis: Logistic system design

Supervisor of the thesis: Ing. František Koblasa, Ph.D.

1. Diploma thesis evaluation

Evaluation	excellent	excellent minus	very good	very good minus	good	failed
Meeting the goal and fulfilling task of the thesis			X			
Quality of conducted survey			X			
Methodology of solutions			X			
Expert level of the thesis				X		
Merit of the thesis and its potential applicability of results			X			
Formal and graphic level of the thesis					X	
Student's personal approach			X			

Mark **x** in the corresponding box.

Supervisor's final evaluation is based on his/her overall subjective evaluation.

Grading is stated literally in the article no. 5, neither by a number, nor by a letter.

2. Comments and remarks on diploma thesis:

The thesis focuses on the logistic problem of transportation products between scattered buildings which are part of the production and logistic system in DZ Dražice.

The extensive theoretical part tries to focus on methods used in the practical part. However, in some cases, it is not obvious how the described theory was used in the practical part (e.g. Manufacturing system classification, Vehicle routing problem) few theories used in the practical part are missing (Truck Loading Problem). In some cases, it's hard to find the purpose of a chapter as it contains just bullet points (e.g. 2.2.1; 2.2.6; 2.2.7) without reasoning how it is relevant to the practical part.

The practical part contains all necessary chapters to fulfil the defined goal of the thesis - current state analysis, capacity planning of current and designed state as well as comparison of the old and new logistics system design. The main goal was to verify if current resources (number of trucks and material handling personnel) are enough to cover manufacturing and logistics requirements. The thesis proves that current capacities are sufficient and can be improved by the proposed optimisation of the logistics system. Optimisation lies in a new loading system which improves the utilisation of trucks and reduces logistics costs down to 50%. A loading algorithm represents the new loading system, and it is applied in xls tool to help personnel plan and load trucks based on the number and type of transported products.

The Thesis ends with an economic comparison of the old and new loading systems. Suggestions on how trucks can be substituted by AGVs follow. It was expected that this part would be more elaborated.

I have the following detailed remarks:

Content notes:

- 1) Figure 16 describes the process from the workshops' point of view, but the process diagram's storage area is missing.
- 2) I'm missing the decision-making description of itself vehicle routing problem.
- 3) It's unclear how some chapters in the theoretical part (e.g. 2.1.1-2.1.4) relate to the practical part.

Formal notes:

- 1) Document has some structure difficulties (e.g. chapter 3.1 is not followed by 3.2, instead is followed only by 3.1.1 and 3.1.2).
- 2) List of abbreviations is missing the recommended part of "symbols and terms". A major portion of abbreviations and symbols are missing (p.33 OA, FA, EA; p.34 DA; p. 43-44 S1-S5, W1-W8; p.60 P2,P4; p.63 OL1-2,NL1-3;p.67 R,C,1L,2L,H1,H2, m,n; p.69 LD, ULD, T). Some abbreviations are poorly explained (p.33 FA, OA,EA, U).
- 3) There are some typos (p.15 Luštěnice with small "l"; p.82 missing 1 in "11" etc.).
- 4) Bullet points sentences sometimes miss dots at and of a sentence (p.16 3rd bulette in the second list, p.29 bullet points).
- 5) Some equations are not properly represented, numbered and referenced in the text (e.g. p 31 definition of capacity; p.71 definition of utilisation).
- 6) Some tables are not named and numbered (p.41, p.75)
- 7) Some units are not expressed commonly (e.g. p.85 table 14 - litres should not be "lit" but only "l")
- 8) Number formatting in the case of prices not following European spacing (e.g. p.85 "2,71,040czk").
- 9) Number of pages exceeds the recommended level. However, that is mainly caused by an in-depth description of the solution.

Despite numerous formal problems, I do recommend the thesis for defence.

3. Questions about the diploma thesis:

- 1) Please explain why VSM like diagram (Figure 16 p.50) is not containing Inventory holding areas (S1-S5)
- 2) Please elaborate decision rule applied in vehicle routing - where the truck should go after first (Luštěnice or Dražice) unloading in the warehouse.

4. Supervisor's statement on the results of the inspection carried out by the anti-plagiarism program in the STAG system:

The Plagiatory system found nine following matches:

1-7/ Declaration – text is given by the institution repeating in all thesis

8-9/ Text is similar to cited reference [6]. Both similarities reference to the same text.

Conclusion – The thesis is original. One found similarity is the text demanded by the institution, and it is part of the thesis assignment. The other one is cited and referenced by original research

5. Supervisor's grading of the diploma thesis:

Very good

Date:, in Liberec

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Supervisor's signature