DTU Compute
Department of Applied Mathematics and Computer Science

Project Definition Report – an Example

The sub-title should be the title of the project

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Summary

This is an example and template for a Project Definition Report (PDR) to be used when initiating a Thesis.
[Text written like this are generic notes and guidelines.]

Contents

CHAPTER 1

Project Description

[In many ways this chapter looks very similar to Chapter 1 in your final Thesis. The followin outline and the explanation of it is credited to Saul Greenberg and his 'deconstruction of Chapter 1'[1].]

1.1 Background

Your PDR should begin with a section that sets the scene and that motivates the problem being studied. It describes some domain, and indicates a problem in general terms. Some questions you should be able to answer after reading the motivation section are:

- What is the general area being addressed?
- What is the motivation for studying a particular problem?
- What makes it worth the effort?
- Is it a 'real' problem in everyday life?
- Is it a 'theoretical' problem that is worth solving?
- Would anyone care if I solved this?

1.2 Prior work

You should provide a miniature literature review to give the reader enough background to understand the context of the research; a full review is usually deferred to the second Chapter of the final thesis. It is, however, important that you as part of you PDR have identified some core literature references. Some questions you should be able to answer in general terms after reading this section are:

- What is the research context and discipline that the thesis fits within?
- In general, who has looked at this area before?
- In general, what is the 'state-of-art' both in terms of methods and solution to a problem?
- In general, what other work complements this research?

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[1]`http://saul.cpsc.ucalgary.ca/pmwiki.php/GradTips/GradTipsChapter1Deconstruction`

1.3   Research Question / Hypothesis / Thesis / Problem statement

This section provides a very concise statement of your hypothesis / thesis / problems. The hypothesis or thesis is the highest-level problem or goal you are going to address. The specific list of problems — usually a handful, although sub-problems are sometimes given — are things that need to be solved if you are going to satisfy your hypothesis/thesis. Problems should be stated unambiguously. The importance of the problem should be mentioned if it hasn't already been done so in the prior sections. Of course, the problem must be worthy of a thesis.

In general, there are a few typical types of research you can do:

- You can try to *solve a real-world problem* for some real-world users or organization.
- You can try to *solve a 'theoretical' problem* reported in the literature.
- You can try to *replicate* a scientific solution or method reported in the literature.
- You can develop a *novel approach or method* for solving a well-known problem

1.4   Research goals and methods

While the above section details the problems, your job is to then translate those problems into research goals. Each goal should briefly indicate *how* you are going to solve the problem i.e., the method you will use to solve it. Note that some authors sometimes combine problem statements / goals / methods into a single section, while others separate it. Goals should be operational, i.e., if you later claim to achieve your goal, you should be able to match your solution against the goal statement.

I cannot overstate how important it is to have clear goals. Most examiners highlight these goals, and after reading the thesis they then go back to see if you have actually accomplished your goals. If you have not, then you have a big problem in your thesis. Even worse are theses where problems and goals are not clearly stated, for it means people are trying to evaluate your solutions in a vacuum.

1.5   Empirical considerations

In this section you should outline the empirical – i.e., practical – setting of your project. You should address questions like:

- Where do you get your data? Where do you analyze it? Can you do this yourself?
- How are you going to build some technology?
- How do you get access to users?

- How do you get access to the needed resources, such as money, hardware, software, lab space, ...?
- Who are you working with? A company, hospital, clinic, grass root organization, ...
- What is your role? Are you expected to deliver something to an external partner?
- Are there any Intellectual Property Rights (IPR) issues involved?

1.6   Impact – innovation and application

You should summarizes what you expect to be the most important findings or contributions. This is in a broader context, and this section typically reflects back on what you wrote in the background section. Hence – do you actually do anyting about the problem you have identified.

Intended Learning Objectives

[This section should list your intended learning objectives (ILO) for this Thesis. A list of ILO are listed at `http://sdb.dtu.dk/2017/30/576` and included below. You should include and tailor most/some of there more generic ILOs, but also add some specific ones which are relevant for you and your project. Examples of specific ILO include learning a specific method or technology. You can be specific by adding a text starting with; "Specifically, the objective is to ...".]

The intended learning objectives (ILO) of this Thesis are:

- can identify and reflect on technical scientific issues and understand the interaction between the various components that make up an issue

- can, on the basis of a clear academic profile, apply elements of current research at international level to develop ideas and solve problems

- masters technical scientific methodologies, theories and tools, and has the capacity to take a holistic view of and delimit a complex, open issue, see it in a broader academic and societal perspective and, on this basis, propose a variety of possible actions

- can, via analysis and modelling, develop relevant models, systems and processes for solving technological problems

- can communicate and mediate research-based knowledge both orally and in writing

- is familiar with and can seek out leading international research within his/her specialist area.

- can work independently and reflect on own learning, academic development and specialization

- masters technical problem-solving at a high level through project work, and has the capacity to work with and manage all phases of a project – including preparation of timetables, design, solution and documentation

CHAPTER 3

Plan

[This chapter should outline the entire plan for the Thesis work, including a Gantt chart with milestones and deliverable, which again are listed in separate tables. This section also contains a risk assessment.]

3.1 Gantt Chart

[A Gantt chart[1] is a type of bar chart that illustrates a project schedule. Gantt charts illustrate work breakdown of the project as a set of hierarchical activities, milestones, and deliverable. Don't make it too complicated – include just the main activities, milestones, and deliverable.]
Figure 3.1 shows an outline of a typical DTU Compute project, where you study, built, and evaluate a piece of technology.

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[1] `https://en.wikipedia.org/wiki/Gantt_chart`

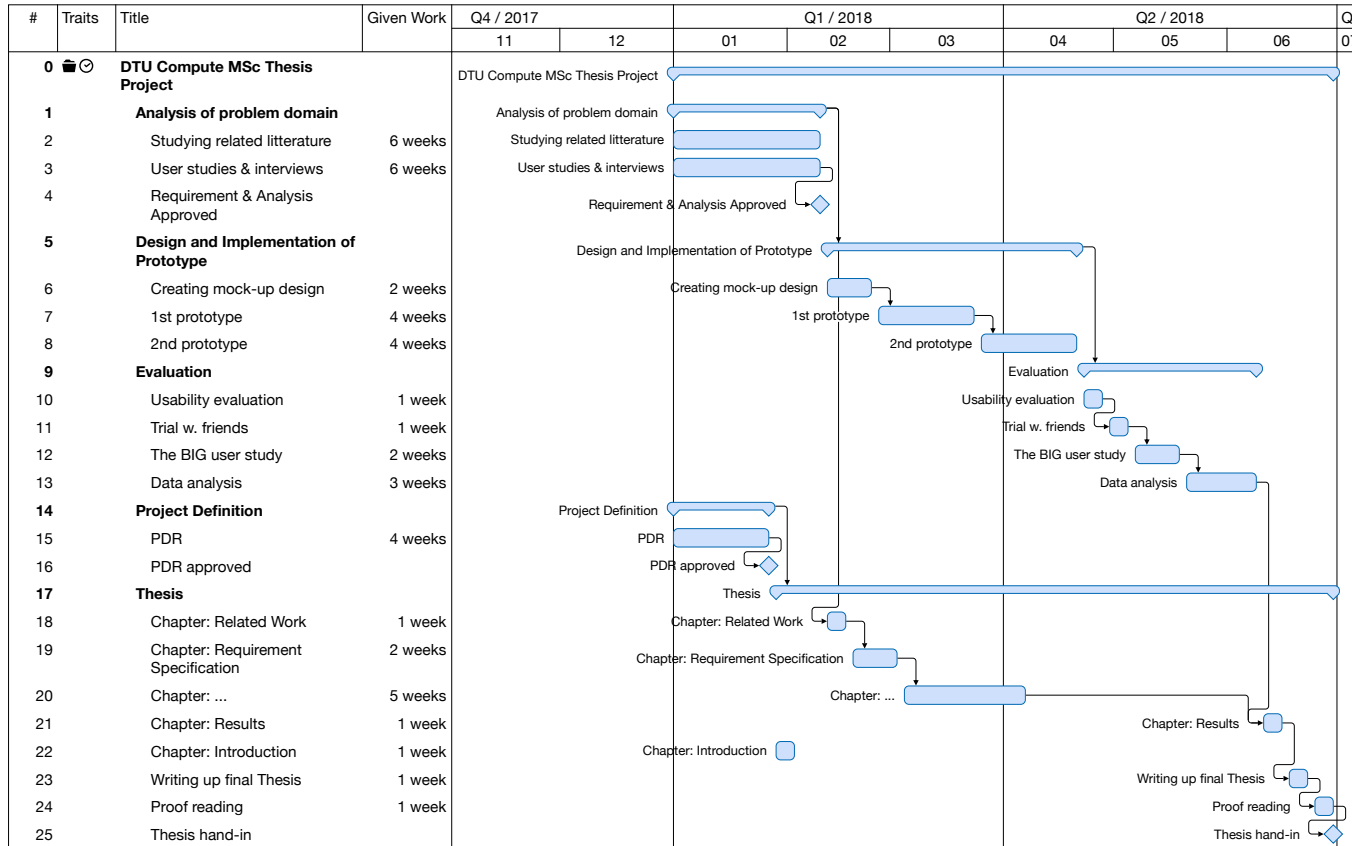| #	Traits	Title	Given Work	Q4 / 2017		Q1 / 2018			Q2 / 2018			Q3
				11	12	01	02	03	04	05	06	07
0	💼⊙	**DTU Compute MSc Thesis Project**										
1		**Analysis of problem domain**										
2		Studying related litterature	6 weeks									
3		User studies & interviews	6 weeks									
4		Requirement & Analysis Approved										
5		**Design and Implementation of Prototype**										
6		Creating mock-up design	2 weeks									
7		1st prototype	4 weeks									
8		2nd prototype	4 weeks									
9		**Evaluation**										
10		Usability evaluation	1 week									
11		Trial w. friends	1 week									
12		The BIG user study	2 weeks									
13		Data analysis	3 weeks									
14		**Project Definition**										
15		PDR	4 weeks									
16		PDR approved										
17		**Thesis**										
18		Chapter: Related Work	1 week									
19		Chapter: Requirement Specification	2 weeks									
20		Chapter: ...	5 weeks									
21		Chapter: Results	1 week									
22		Chapter: Introduction	1 week									
23		Writing up final Thesis	1 week									
24		Proof reading	1 week									
25		Thesis hand-in										

Figure 3.1: The Gantt chart for a DTU Compute MSc. Thesis.

3.2   Activities

[This section provides a table of the main phases and activities of the plan with a little description of each.]

Table 3.1: Project phases and activities.

#	Title	Description	Phase	Period
15	Project Defini-tion	Writing up the PDR and planning the whole project. Also includes attending start-up supervisor meeting.	Project Defini-tion	W1–W4
23	Writing up The-sis	This is the final writing up – all of the chapters should be ready by now	Thesis	W26

3.3   Milestones

[This section provides a table of the main milestones of the plan with a little description of each. Examples of milestones include: (i) Approvals (e.g., of a UX design, data management, or of a study involving patients); (ii) Important deadlines (e.g., prototype ready for UX testing, recruitment of all patients, or final analysis of data done); (iii) Acquisition of core resources (e.g., getting access to hardware, setting up a lab experiment, or getting access to test data); and (iv) Thesis milestones (e.g., the PDR, chapters, and final Thesis).]

Table 3.2: Milestones. A:Approval, D:Deadline: AC:Acquisition, TH:Thesis.

#	Title	Description	Type	Week
M_1	Project Defini-tion Report	Approval of the PDR.	TH	4
M_2	Milestone 2	This is the second milestone....	D	5
M_x	Milestone x	This the x'th milestone....	D	N
F	Thesis hand-in	Hand-in of final Thesis	TH	T

3.4   Deliverable

[This section provides a table of the main deliverable of the plan with a little description of each. Examples of deliverable include: (i) Design products (e.g., UX design, a requirement analysis, a design model, a data model), (ii) Hardware and Software (e.g., a UX prototype, a lab setup, an app for download in AppStore); (iii) Data analysis (e.g., machine learning analysis or statistical analysis of user study data); and (iv) Thesis deliverable (e.g., chapters, figures).]

Table 3.3: Deliverable. R:Report, SW:Software, ST:Study.

#	Title	Description	Type	Week
D_1	Project Defini-tion Report	Final version of the PDR.	R	4
D_2	Milestone 2	This is a software milestone....	SW	8
D_2	Final Thesis	Final proof-read Thesis ready to hand in	R	T

3.5   Risk Analysis

[A risk analysis identify the top-5 or so risks that can really upset the entire project. Typical risk factors are often those that are not under your own control. Examples include getting access to data from someone else, the ability to run some experiments that will generate data, getting access to hardware/software that is needed, and getting access to people, such as company representatives, users, and patients.]

Table 3.4: Risks. 1:low risk, 5:high risk of delays.

#	Title	Description	Risk	Week
R_1	Risk no. 1	This is a high risk. Describe here how to mitigate it.	5	4
R_2	Risk no. 2	This is a low risk. Describe here how to mitigate it.	2	4

APPENDIX A

Acronyms

CACHET Copenhagen Center for Health Technology

PDR Project Definition Report

ILO intended learning objectives

IPR Intellectual Property Rights

APPENDIX B

An Appendix

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