

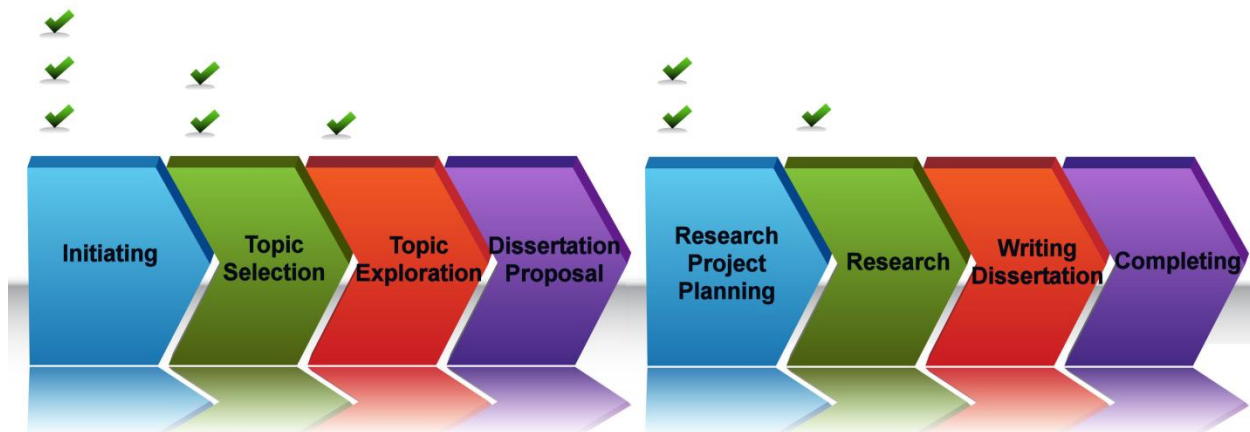
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Research Methods Course

# Planning the Research Dissertation Project

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### Introduction

This paper examines what a dissertation is, summarizes some best practices for preparing one, and then describes a detailed action plan that can be used to manage the entire research effort.

The purpose of a dissertation is not to merely document what a doctoral student learned in their classes, but rather, “is the product of a personal, scholarly exploration, *building* on and extending the learning in the courses.”<sup>1</sup> A dissertation is said to be an extended piece of writing typically divided into chapters. Arguments are developed in response to a central proposition or thesis, and demand that data acquired through research be analyzed to support or contradict the underlying message. A dissertation, more so than other writings, involves a detailed exploration of evidence to the point that the researcher must clearly state how the data will be collected and analyzed.<sup>2</sup> The dissertation should be presented in a professionally finished manner,<sup>3</sup> in accordance with ground rules established with a supervisor,<sup>4</sup> and must be underpinned throughout by an awareness of underlying theory.<sup>5</sup>

### Dissertation Planning

Planning a successful dissertation effort requires coordination with a supervisor, defining the criteria for establishing success, setting up support groups, and defining a management plan that incorporates a checklist of activities that can be subdivided into phases separated by milestone events. Managing time during a research effort is important and can benefit from a structured management plan that uses best project management practices. Selecting a dissertation topic, for example, can be a nebulous undertaking that can benefit from a defined path forward. Once a topic is identified, the researcher must conduct a literature search and review relevant works related to the candidate topic. Since the researcher is constructing arguments to defend a thesis statement throughout the majority of a dissertation, it is important that the thesis statement be critically evaluated and focused in to a clearly articulated statement summarizing the central idea of the report.

Once a topic has been selected and refined, it is a good practice to submit a Dissertation Proposal. The purpose of a dissertation proposal is to formally propose a research project to university faculty members and request their buy in and support in the form of supervisory engagement and monitoring. “An approved dissertation proposal results in a contract between the student and the university, with specific faculty designated to support the project, each with specific roles, such as a “chair” or “reader.””<sup>6</sup>

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<sup>1</sup> Brause, R. S. (2000), *Writing Your Dissertation: Invisible Rules for Success*, ISBN 0-750-70744-5, New York, NY: Routledge Falmer, p. 22, para. 5.

<sup>2</sup> Writing your Dissertation. (2003). University of Southampton, p. 3, para. 9.

<sup>3</sup> Id., Univ. of Southampton, p. 4, para. 1.

<sup>4</sup> Id., Univ. of Southampton, p. 5, para. 3.

<sup>5</sup> Id., Univ. of Southampton, p. 3, para. 1.

<sup>6</sup> Id., Brause (2000), p. 24, para. 5.

## Conducting Research

Focusing the thesis statement into a refined series of research questions is the best way to start the research effort. A literature review is then conducted to “place the problem in the context of what is already known about the problem.”<sup>7</sup> It also helps the researcher learn about the problem and assess existing knowledge on the subject to ensure his research extends current understanding.

The Scientific Method is relied on to conduct the research and to collect supporting data. The Scientific Method includes designing experiments, observing relationships between test variables, defining the test hypothesis (tied to the thesis statement), conducting experiments, collecting data, drawing conclusions, and conducting retests to confirm results.<sup>8</sup> Influencing variables are defined to facilitate the observation and measurement of variations. Changes to dependent variables are observed and measured and said to be caused by changes to the independent variables. Experiments are designed in order to define the way that pertinent information will be gathered in order to answer the research questions.<sup>9</sup>

Data is analyzed through graphs, statistics and comparison to define the relationship between the variables and to discover sources of error.<sup>10</sup> Conclusions are drawn based on the results of the experiment and stated so they address the experiment’s hypothesis and relate to the thesis statement.<sup>11</sup> Conclusions can either accept or reject the hypothesis depending on the data collected during execution of the experiment. Completing the research effort involves refining conclusions so they relate to present knowledge and noting the implications of the research and suggesting areas for further study.<sup>12</sup>

## Writing the Dissertation

Before a report can be composed, the material must be arranged and organized in a logical order. The writing can’t start until the researcher decides the format, length, order and structure of the dissertation.<sup>13</sup> The report structure is particularly important and can be based on either a direct or indirect writing approach. The three most common approaches to structuring analytical reports are:

1. Focusing on conclusions.
2. Focusing on recommendations.
3. Focusing on logical arguments.<sup>14</sup>

Determining which structure to select depends on the anticipated audience reaction to the dissertation findings. The direct approach focuses on conclusions<sup>15</sup> and makes the report easier to follow by giving

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<sup>7</sup> Scientific Method. (2003). University of Southampton, p. 2, para. 1.

<sup>8</sup> Scientific Method. Briefing prepared by University of Southampton, slide 2.

<sup>9</sup> Scientific Method. (2003). University of Southampton, p. 3, para. 6.

<sup>10</sup> Scientific Method. (2003). University of Southampton, p. 5, para. 1.

<sup>11</sup> Scientific Method. (2003). University of Southampton, p. 5, para. 2.

<sup>12</sup> Scientific Method. (2003). University of Southampton, p. 5, para. 3.

<sup>13</sup> Thill, J. V., and Bovee, C. L. (2005), *Excellence in Business Communication*, 6<sup>th</sup> Ed., ISBN 0-13-141965-X, p. 354, para. 1.

<sup>14</sup> Id., Thill and Bovee (2005), p. 356, para. 9.

readers the main idea first. It should be used when the author's credibility is high<sup>16</sup> and the readers are expected to trust the dissertation findings. Focusing on recommendations can be very effective by using the direct structure and unfolding the recommendations by taking the following supplemental steps:<sup>17</sup>

1. Establishing the need for action in the opening section.
2. Introducing the benefits that can be achieved.
3. Listing the recommended steps required to achieve the benefits.
4. Explaining each step in detail.
5. Summarizing the recommendations.

The indirect approach focuses on logical arguments<sup>18</sup> and is more effective when the audience is expected to be skeptical of the reported findings. The indirect approach begins by finding common ground and discussing things the audience is likely agree with, and putting the contested findings in the middle of the report after they have been fully explained via a series of logical arguments.

Since the outline structure will be affected by these types of structural decisions, they have to be made before writing can begin.

Writing the dissertation should be done methodically within a framework that structures each chapter of text so it relates to the thesis topic. Using the action plan recommended in the next section will ensure this is the case. The text of the dissertation should be written so the tone and style are appropriate for an academic audience, and convey the results of the research in an accurate, reader-friendly manner.<sup>19</sup> Defining a framework around the paper content will assist an author having trouble getting started to see the whole picture. Preparing a Research Breakdown Structure (RBS) block diagram and managing research points by mapping them to items on the RBS will also facilitate the initial writing task.

The next section takes the items of best practices for preparing dissertations listed above and incorporates them into an action plan for executing and managing the effort.

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<sup>15</sup> Id., Thill and Bovee (2005), pg. 357, para. 1.

<sup>16</sup> Id., Thill and Bovee (2005), pg. 357, para. 1.

<sup>17</sup> Id., Thill and Bovee (2005), pg. 358, para. 1.

<sup>18</sup> Id., Thill and Bovee (2005), pg. 358, para. 5.

<sup>19</sup> Id., Univ. of Southampton, p. 9, table 1.

## Managing the Dissertation Effort

Conducting the requisite research and drafting the dissertation report can be a complicated set of activities and therefore warrants implementation of a structured management approach. This section describes a management approach that will provide researchers with a framework to ensure success.

### Phases and Milestones for the Dissertation Effort

The research and dissertation report writing effort can be divided into a number of phases separated by milestone events where products from the previous phase are reviewed and approved before continuing on to the next phase. The Research Milestone Schedule indicated in Figure 1 depicts the recommended phases and how the review milestones (in blue and red) separate them.

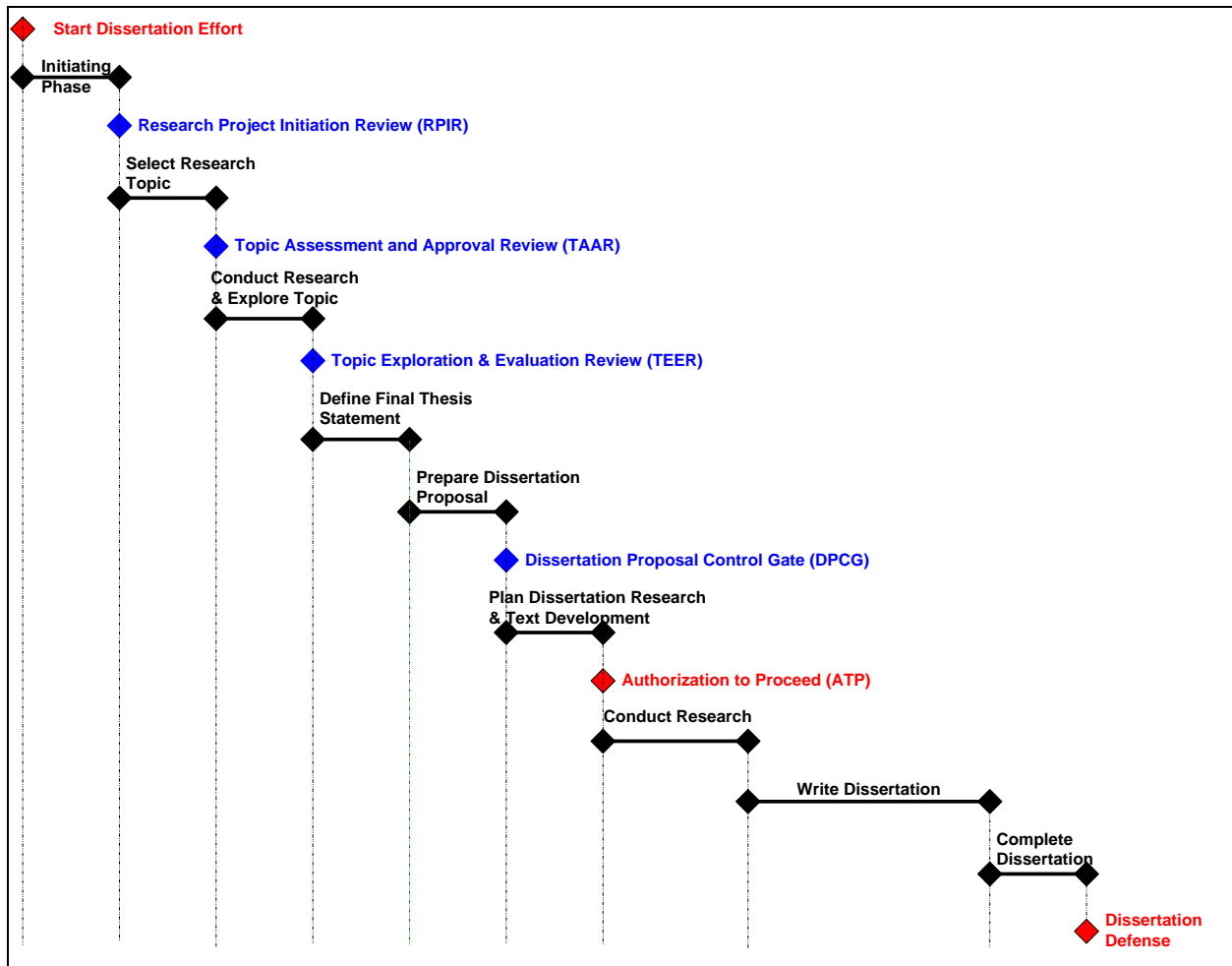


Figure 1. Research Project Milestone Schedule

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The Milestone Deliverables Matrix indicated in Table 1 also indicates the phases and milestones for preparing a dissertation report, but also lists the work products that should be reviewed at each milestone event, and the participants at each event.

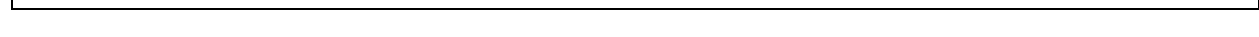
**Table 1. Deliverable Products by Milestone Events**

No.	Phase	Ending Milestone	Participants	Products
1	Initiating	Research Project Initiation Review (RPIR)	DC DS	<ul style="list-style-type: none"> <li>• Candidate research areas.</li> <li>• Supervisor.</li> </ul>
2	Select Research Topic	Topic Assessment & Approval Review (TAAR)	DC DS	<ul style="list-style-type: none"> <li>• List of candidate topics.</li> <li>• Source selection criteria.</li> <li>• Topic Weighted Selection Criteria (WSC) Matrix.</li> <li>• Selected topic.</li> <li>• Candidate thesis statements.</li> </ul>
3	Conduct Research & Explore Topic	Topic Exploration & Evaluation Review (TEER)	DC DS	<ul style="list-style-type: none"> <li>• List of historically significant research papers.</li> <li>• List of recent papers of relevance.</li> <li>• Research methodology.</li> <li>• Research Breakdown Structure (RBS) block diagram.</li> <li>• Draft text of major research points.</li> <li>• Map of research points to RBS topic and subsidiary work packages.</li> <li>• RBS dictionary of research points.</li> </ul>
4	Define Final Thesis Statement			<ul style="list-style-type: none"> <li>• Pro and Con arguments.</li> <li>• Subsidiary research points.</li> <li>• Focused topic tailored to available research data.</li> <li>• Final thesis statement.</li> </ul>
5	Prepare Dissertation Proposal	Dissertation Proposal Control Gate (DPCG)	DC DS DB	<ul style="list-style-type: none"> <li>• Dissertation board identified.</li> <li>• Defined ground rules.</li> <li>• Success criteria.</li> <li>• Dissertation proposal.</li> </ul>
6	Plan Dissertation Research & Text Development	Authorization To Proceed (ATP) with Plan	DC DS DB	<ul style="list-style-type: none"> <li>• Research Project Management Plan (PMP).</li> <li>• Integrated Master Schedule (IMS).</li> </ul>
7	Conduct Research			<ul style="list-style-type: none"> <li>• Research hypothesis</li> <li>• Supporting data</li> <li>• Conclusions</li> </ul>
8	Write Dissertation			<ul style="list-style-type: none"> <li>• Dissertation submitted</li> </ul>
9	Completing dissertation	Dissertation Defense	DC DS DB	<ul style="list-style-type: none"> <li>• Approved Dissertation.</li> </ul>
<b>Key:</b> DC = Doctoral Candidate; DS = Dissertation Supervisor; DB = Dissertation Board				

By following a structured approach for conducting research and writing tasks, the researcher can ensure their time will be used effectively and can get minor course direction changes from their supervisors at the reviews that occur at each milestone event.



The recommended management approach contained in this paper includes the use of a new concept



thought of as research packages that will collect a number of research points that are drafted to support topic-related arguments that are allocated to the box.

As an example of how to create and use an RBS consider the content indicated in Figure 2. Assume that at the start of the research effort the researcher is interested in business and/or economic topics. Economic topics indicated in red on the left of the RBS diagram are investigated and eventually decompose to *China's Growing Economy* and the *Rise of New Consumer Classes*. This particular researcher, not being as interested in those topics, stops decomposing the economics tree and starts decomposing the Business area. Candidate business topics are identified and the Business box is decomposed into:

- *International Business (1.3.1)*
- *Mergers and Acquisitions (1.3.2)*
- *Executive Compensation (1.3.3)*
- *Corporate Governance (1.3.4).*

Finding the Mergers and Acquisitions topic most interesting, the researcher then decomposes it into successive layers of more detailed topics. The result of this example is that a topic of *Factors for Successful Mergers* could be a good topic when supported by research points drafted to support the indicated subsidiary research items, which include:

- *Customer Confusion after the Merger*
- *Cross-Competing Business Lines*
- *Mission Compatibility*
- *Beneficial Economies of Scale*
- *Cultural Synergy.*

Using the RBS enables a researcher to quickly focus in on a research topic at the appropriate level of complexity and visualize how the supporting research items relate to the topic. The RBS can also help the researcher draft the dissertation report since research points, as they are drafted, can be managed, by allocating them to RBS items (depicted as the boxes in the diagram). In this way related research points are stored by similar topics and can be collected when that portion of the report is written.

### Representative Integrated Management Schedule (IMS) for Dissertations

When the phases and milestones previously discussed are decomposed and expanded into a list of activities, an implementation schedule such as the one in Figure 3 can be created. Figure 3 represents and Integrated Master Schedule (IMS) for conducting a research project and writing a dissertation report.

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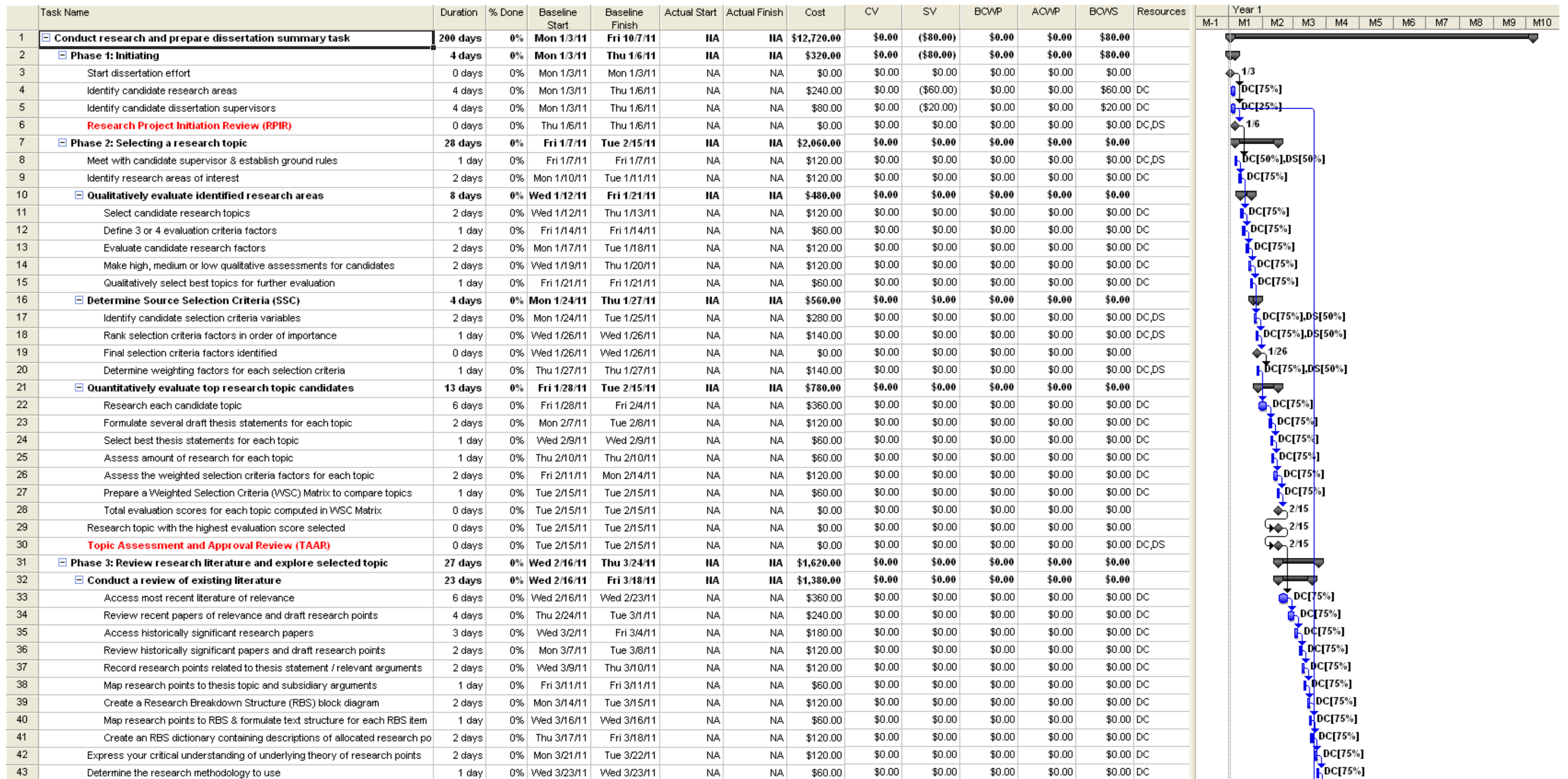


Figure 3. Integrated Master Schedule Template for Conducting Research Projects

## Planning Research Dissertation Projects

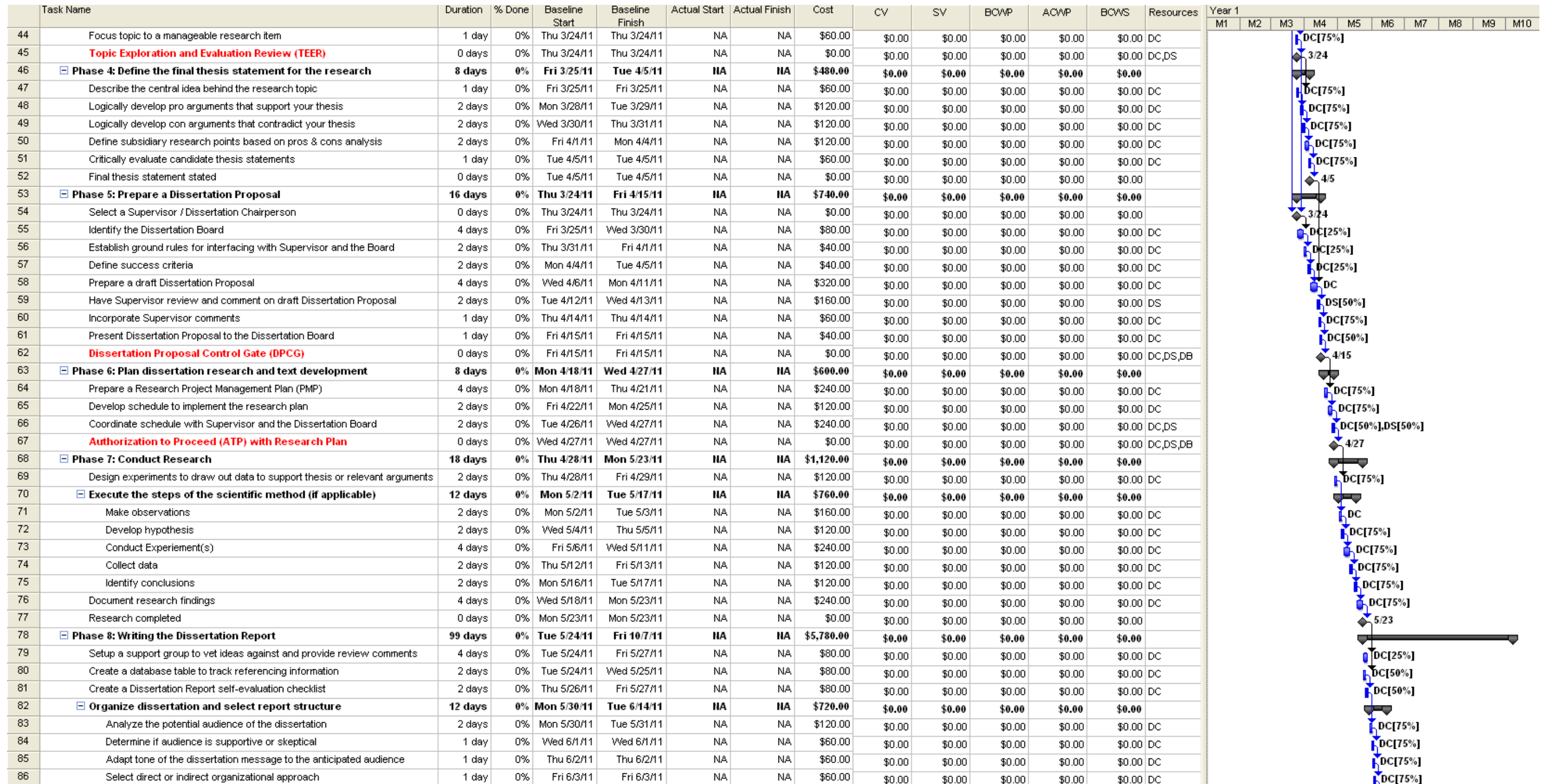


Figure 3. Research Project IMS Template (Page 2 of 3)



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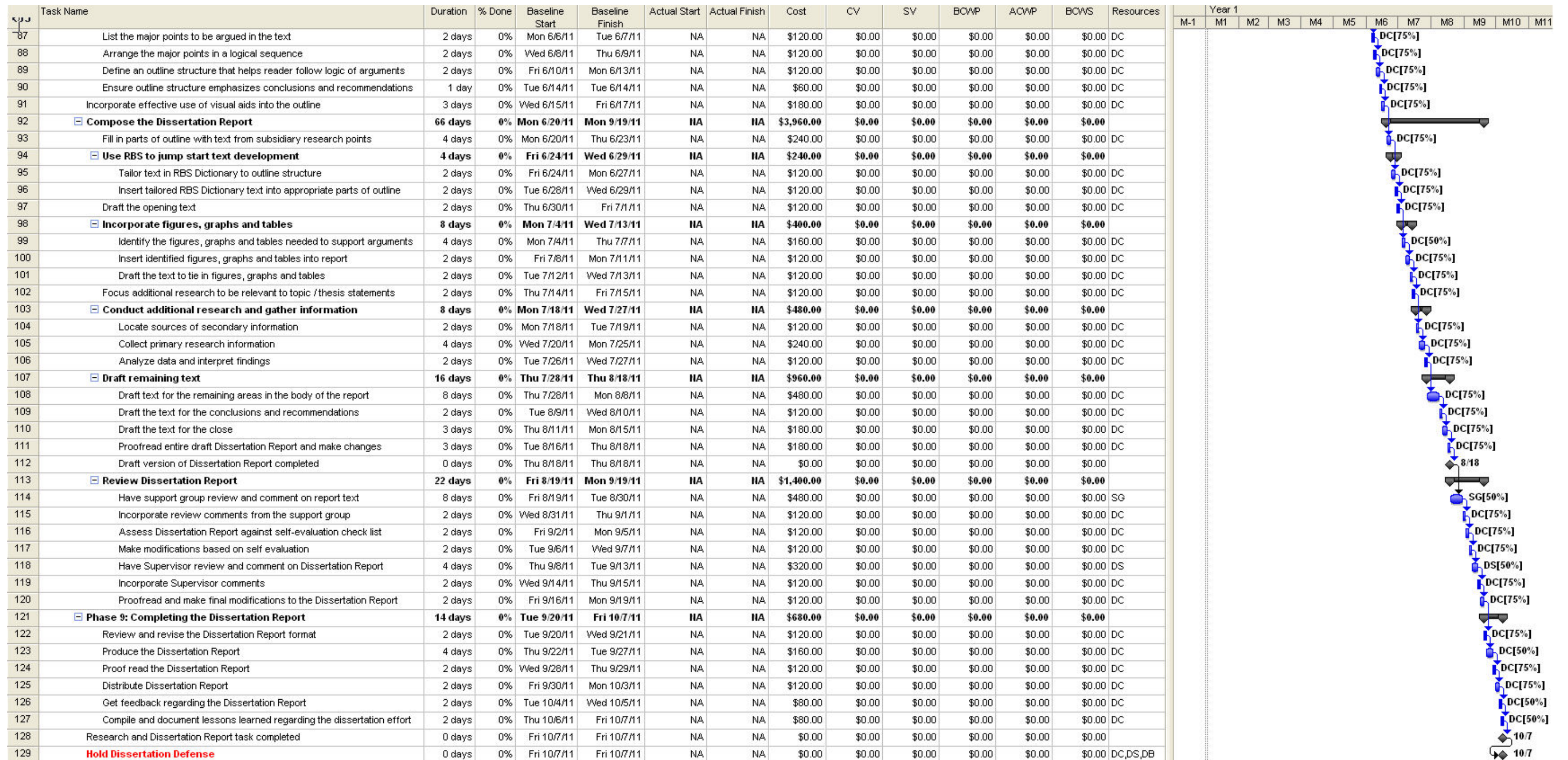


Figure 3. Research Project IMS Template (Page 3 of 3)

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The IMS defines the detailed activities required to prepare a dissertation report. It includes qualitatively and quantitatively evaluating candidate topics, reviewing existing literature on the selected topic, focusing the final thesis statement to ensure the effort will be manageable, logically developing arguments and research points that support the claims purported in the thesis statement, selecting a supervisor and dissertation board, conducting research using the scientific method, defining an RBS to track and manage research points relevant to findings, selecting the appropriate dissertation outline structure, writing the dissertation, and completing the report. The indicated IMS contains as much detail as possible without having selected a dissertation topic. It should be thought of as a template that researchers can tailor by adding addition tasks specific to the selected research topic once it is selected.

### Tracking Earned Value and Not Just Completion Times

Notice that the schedule includes columns labeled CV (Cost Variance), SV (Schedule Variance), BCWP (Budgeted Cost of Work Performed), ACWP (Actual Cost of Work Performed), and BCWS (Budgeted Cost of Work Scheduled), which represent Earned Value Management (EVM) metrics that can be used to track the progress of work performed. The IMS template is a resource loaded schedule and can be used to track not just the time a task is completed, but also whether the value of the work performed is tracking to the researchers original baseline plan. By inputting a unit cost per hour for each participating resource (e.g., the researcher and supervisor), a cost baseline can be defined at the beginning of the effort and used to compare against the anticipated value realized as work items are completed. To automatically generate EVM data in the columns, the baseline must be set in the schedule (after it is tailored for the specific research area) by executing the *Tools/Tracking/Set Baseline* command. As work is performed the percent completion (*% Done*) estimates and the *Actual Start* and *Actual Finish* dates for each task are inputted into the schedule. Data will automatically fill in the EVM columns and define the cost and schedule variances that will indicate how progress, in terms of value earned and completion dates, is tracking against the baseline plan. For example, if in the middle of a phase the CV is a negative value, but the SV is a slightly positive value, then the researcher can conclude that they are expending more effort than planned in order to stay on schedule. This information may come in handy when forecasting Estimate to Completes' (ETCs), or when a re-baseline is necessary to include tasks not originally anticipated. A copy of the schedule template in Microsoft Project (v.2007) is attached.



Dissertation Project  
Plan\_09.mpp



### Summary

This paper applied systems engineering and project management techniques promulgated by the Project Management Institute (PMI) to define a structured management approach for conducting research and composing a dissertation report. A schedule template is included which, if tailored for specific research efforts and then used to track and manage progress, will divide the research effort into manageable work packages and activities sequenced in a logical structure. Working on a dissertation project within the framework of the plan structure will ensure that researchers make efficient use of their time and get the most out of their research effort.