

PRCO304: The Project Initiation Document (PID)

Once you have submitted your proposal and been allocated a supervisor, the next steps are:

- **study the Project Guidelines fully and in detail**
- if there are any resource needs/implications in your proposal, discuss these with your supervisor as a matter of urgency: DO NOT simply assume that the University will fund these needs
- get feedback from your supervisor on your proposal
- draft a PID and gain feedback from your supervisor
- submit PID via the SPMS – specifically via the PID submission option

I would hope that you will be able to meet with your supervisor during the above process¹.

Before the start of the spring semester you should also agree a day/time for your weekly supervision meetings.

This document defines and advises on the contents of a student project PID. Needless to say these guidelines are in effect a cut-down version of what you might find for a “real PID”.

In a real project the purpose of the PID is to enable senior management to make an informed decision as to whether to go ahead with (i.e., invest in) the project. As such, the PID needs to: define the project at an initial level (i.e., what is it that we are proposing); consider the business case (i.e., is the project a sensible investment for the client/business); and consider feasibility issues and risks (e.g., if the project objectives simply cannot be achieved within the proposed budget or timescale, senior management might like to know about that now).

Of course some of these issues do not apply in a strong way to student projects, and any definition of the contents of a PID may need to be sensibly adapted; give consideration to how (or if) the suggested aspects do indeed apply to your project.

Do not simply regurgitate parts of the sample PID below: consider carefully what is relevant to *your* project. One of the main benefits of writing the PID (for you) is to force you to think through the details, so don't try to rush this. Discuss with your supervisor as appropriate.

¹ Whilst we will of course endeavour to support you in the above process, it should be noted that the project does not formally start until Semester 2, and that support from staff during Semester 1 may be limited due to their Semester 1 commitments.

The suggested contents of your PID are as follows.

1. Introduction
2. Business case
 - 2.1. Business need
 - 2.2. Business objectives
3. Project objectives
4. Initial scope
5. Resources and dependencies
6. Method of approach
7. Initial project plan
 - 7.1. Control plan
 - 7.2. Communication plan
8. Initial risk list
9. Quality plan
10. Legal, social, ethical and/or professional issues
11. Any other issues that you wish to include

The following sections describe these, and also provide fragments of a sample PID.

1. Introduction

Students often dive in, on the apparent assumption that their reader already knows everything about their project: they don't. Take the time to ease the reader in gently setting the context *in very general terms*. Who is the Client²? What is the nature of their "business"³ and (*in general terms*) what is their motivation for the intended project?

1. Introduction

The Lawns is an independent 4-star Hotel situated in Brighton, England. It provides 78 bedrooms in various sizes (single, double, family and individual suites), and has a number of other facilities such as restaurant, café, swimming pool and outdoor sports facilities. The Lawns is shortly intending to undergo a major renovation. As part of that effort, it wishes to replace its current Hotel Information System which no longer supports the required business processes, thus resulting in inconvenience for staff, and less than optimal customer service.

² The Client is the organisation or individual who is funding the project. If you don't have a real client, then see the guidance notes at the end of this document

³ Of course the Client might not be a business organisation ... interpret the word "business" as appropriate

2. Business case

In a real project, the business case would include an evaluation of the project (as an investment). These issues probably don't apply to your project but you should at least have a statement of the business need⁴ and the business objectives.

The business need defines the underlying problem that the Client is facing, and which is motivating their desire for change.

The business objectives are what the Client wishes to achieve in view of the problems identified in the business need. The business objectives will (hopefully!) be achieved – *not within* your project – but *subsequently as a consequence of* (deploying the deliverables from) your project⁵.

2. Business case

2.1 Business need

Currently the business processes within the Hotel that directly impact customer service are inefficient and ineffective. Customers are unable to book via the web; some of the booking information that is required by the current hotel owners is not held in the system, requiring some information to be noted down on paper. The current information system is not interoperable with the telephone system, requiring the desk clerks to manually transfer such information from the telephone system at check-out time. Similarly, information from other parts of the hotel has to be passed to the front desk via phone, often leading to delays, for example in the receipt of customer billing and room status information. All of these factors result in longer than necessary check-in and check-out times, and inefficiency in dealing with some other customer queries.

2.2 Business objectives

To modernise the customer service processes and systems in a way that

- (a) removes the need for staff to employ manual work-arounds
- (b) effectively connects front-desk reception, bookings, facilities and housekeeping
- (c) effectively allows the aggregation of customer information (including telephone calls)
- (d) improves the efficiency and accuracy of key customer-facing interactions
- (e) allows customer bookings to take place in person, or via phone, email or web

⁴ Again, don't get hung up on the word "business" ... think of the business need as the Client's need, and the business objectives as the Client's objectives. So here you are formally stating something that you introduced informally in the introduction

⁵ So for example a company may hold a post-project review 3 months after the completion of a project to assess whether or not the business objectives are indeed being met

Notice that the business objectives are focussed on the business (!), and often (as is the case here) make no mention of your eventual IT system. Students do often mistakenly get sucked into discussing project objectives or even system requirements within the business objectives.

3. Project objectives

These define the *major* deliverables and/or outcomes of the project. The project objectives would be evaluated either during the project or at its end. The project objectives should be such that their successful completion would then allow the client to subsequently achieve its business objectives. Your project objectives should be numbered (since this makes it easier to refer to them).

3. Project objectives

1. To analyse existing customer service processes and procedures and provide recommendations for improvement
2. To analyse user requirements for the new Hotel Information System in line with the new processes and procedures
3. To analyse potential development technologies and deployment solutions
4. To implement the new Hotel Information System in line with new processes and procedures
5. To provide interoperability between the new Hotel Information System, and the existing telephone system
6. To provide staff training

The archetypical advice concerning objectives is that they should be SMART (specific, measurable, achievable, relevant, time-bound):

- If your objectives are specific (as opposed to general) then it is easier for them to be clear and unambiguous.
- Measurable refers to the ability to demonstrate the achievement of the objective via unambiguous criteria.
- If our objectives are fundamentally unachievable within the project constraints (e.g., budget, timescale), then clearly we have a problem!
- The objectives should be relevant to the business, i.e., traceable to the business objectives.
- Time-bound --- so that we know when are we going to achieve these objectives. The time-frame for the achievement of your objectives can be defined in your project plan.

Clearly high-level objectives will be less specific, and perhaps less measurable than low-level detailed objectives. Despite this, high-level objectives (as above) are useful for some forms of stakeholder communication.

4. Initial scope

Here we provide more details about the project objectives: you can either provide formal detailed objectives, or simply provide further information about the objectives in a more informal manner. Given the scale of your project, the latter will probably suffice.

Of course for some of the objectives you might have no further information at this point in time. You can also state any exclusions (stuff that won't be included) if that is needed in order to provide clarity (e.g., see item 5 below in the Initial scope). Scope can include both what you'll do, and what you'll produce. Feel free to include assumptions, but ensure they are *necessary* assumptions: something that you (for some reason) cannot check out now.

As the project unfolds, your understanding of the scope will improve⁶: *make sure that you document this improved understanding.*

4. Initial scope

1. Business processes (and their shortcomings) will be identified by interview and observation, and (possibly) documented using UML activity diagrams.
2. The proposed system will allow
 - a) customers to book rooms in person, via the phone, email or the web, and to amend these reservation details as required
 - b) hotel staff to view customer, booking, and room information
 - c) hotel reception staff to process check-in, check-out, and to record updated status information about rooms
 - d) staff within hotel facilities (e.g., the restaurant) to enter service charges directly into the Hotel Information System
 - e) interoperability with the existing telephone information system, in particular being able to extract call charge information at check-out
 - f) security, legal and usability issues will be key quality criteria
3. User requirements will be elicited using interviews, observation, and the development of user stories. User requirements will be expressed primarily in text.

⁶ And for this reason, Section 4 is entitled "*Initial scope*"

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| 4. | The more complex user requirements will be elaborated into detailed system requirements ⁷ either using text, use case descriptions and/or a use case realisation. A class diagram will be produced. State machines will be developed (only) for those classes with significant state dependent behaviour. |
| 5. | The existing telephone system will remain unchanged. |

Under item 2 we start to see something akin to user requirements: although this list is not definitive or set in stone, *it is important* that we have (at this stage) some initial details as to what your product/system is *going to do*.

Notice that some of the project objectives aren't elaborated on – at this stage we don't have any further (relevant) information.

5. Resources and dependencies

Is the project critically dependent upon:

- any resources and/or products which are not currently available?
- any other projects?

If so, please detail these.

6. Method of approach

Describe your intended approach/process⁸ (at a high level). Obviously the closer that your process is to one of the standard processes, the less you'll have to say. Similarly, tell us about the technologies that you think you *might* be using.

<h2>6. Method of approach</h2>

Software development will employ an incremental approach, with three increments focussing upon (i) customer facing functionality; (ii) internal communications (between

⁷ System requirements specify the requirements at a more detailed level (than do user requirements). Within the system requirements we might identify individual (atomic) system functions that are collectively needed to allow the system to meet the user requirements. We would normally expect to find detailed system requirements in the requirements document rather than the PID. Their importance for complex or critical aspects of the functionality is however worthy of note: the identification and specification of individual (atomic) system services allows more thorough requirements validation and subsequent testing.

⁸ A process is simply a set of activities

front-desk, booking, facilities and housekeeping); and (iii) interoperability with the existing telephone system.

Possible technologies are ASP.Net/SQLServer or PHP/MySQL, although a full evaluation will take place during the project.

7. Project plan

Obviously the project plan is partially derived from your intended development process.

Don't get sucked into creating a detailed plan for the entire project at this point in time – it's a complete waste of time. However, we do wish to see an initial staged project plan identifying when the core/essential features of your solution will be delivered.

Here is a sample project plan for a software development project⁹ assuming that the project will indeed start 29 January. If you wish to start earlier, then feel free to include that in your plan.

7. Project plan			
Stage	Expected Start Date	Expected Completion Date	Products/Deliverables/Outcomes
1. Initiation		11 Jan	PID
2. Investigation and outline requirements	Mon 29 Jan	Mon 5 Feb	Analysis of existing business processes; Outline requirements; Evaluation of possible development technologies
3. Initial high level design	Tuesday 6 Feb	Tues 13 Feb	Design documents (Architecture; DB schema; modular decomposition; GUI style guide; ...)
4. Increment1	Weds 14 Feb	Thurs 1 Mar	Increment requirements and design; Sub-system providing customer facing functionality; Test results
5. Increment2	Fri 2 Mar	Weds 14 Mar	Increment requirements and design; Sub-system providing communication between the internal functional units; Test results
6. Increment3	Thurs 15 Mar	Fri 23 Mar	Increment requirements and design; Telephone system interoperability; Test results

⁹ If your project is not of this form, then include alternative stages as appropriate. For example a project that is more research-oriented might have stages relating to: Identification of research hypothesis, experiment design, experiment execution, analysis of results.

<i>Easter vacation</i>	Mon 26 Mar	Fri 13 Apr	
7. System and user acceptance testing	Mon 16 Apr	Fri 20 Apr	Test results, final system; user training
8. Assemble & complete final report ¹⁰	Mon 23 Apr	Fri 4 May	PRCO304 Report

Note that in Stages 2 and 3, I have referred to “*Outline Requirements*” and “*Initial high level design*”¹¹. This is because most students find it extremely difficult to completely pin down the requirements and design before development¹² – and indeed trying to do so can lead to considerable delay. The outline requirements and initial high level design can of course be considered an elaboration of the initial scope identified in the PID. Notice that each stage includes some consideration of requirements, design (where more detail can be provided about these aspects) and V&V.

When developing your plan do remember that *we are expecting 30 hours of work from you each and every week. We expect products/deliverables to be submitted to the SPMS via the Miscellaneous Deliverables option.*

Note that the expected completion date for Initiation is *your* intended submission date for the PID. The expected completion date for the final stage coincides with the date suggested for submission of draft reports; it also includes 2 weeks contingency.

You can indeed have a stage which spans the Easter vacation (i.e., starts before and ends afterwards), but it is probably a good idea to assume that you will do nothing over the Easter vacation – then at least it is free to act as a contingency if needed.

Please be aware that your project is to be done over a short time-period: there is a great temptation when constructing your plan to simply assign a whole number of weeks to each stage – this may well be wasteful. Try to think through the details slightly more carefully if possible. Furthermore if, during execution, you find that a stage can be finished ahead of time, *then do*: don’t waste the time on inessentials.

7.1 Stage management

In the current context, stages are intended as project management constructs (rather than being part of the software development process).

¹⁰ You should aim to write-up as you go along, so this final stage is assembly and final tidying up.

¹¹ And for this reason these first two stages have been kept short.

¹² As you would in a true waterfall development

The details of the project plan should not be seen as set in stone: at the start of each stage you can revisit the stage's intended *objectives*, and also make a decision as to how the stage will be planned (either by developing a one-off plan for the whole stage, or accepting a more fluid/agile approach in which the planning of the stage is taken on a week-by-week basis). Each stage should conclude with a clear *review* (in PRINCE2 terminology an "end-Stage report") of the progress made within the stage towards the stage objectives, the accomplishment of the project objectives and/or solution's core/essential features.

However you manage stages, it is essential that your final project report contains appendices clearly detailing stage objectives, plans and reviews, and that the main body of your report provides an overview of the overall process.

Significant changes to your original plan should be agreed with your supervisor and clearly documented.

7.2 Control plan

If you don't *plan* to apply project management control, then you probably won't. The most fundamental element of project control in PRINCE2 is provided by end-Stage reports and we'll see in the main Project Guidelines that we also demand the use of weekly Highlight reports¹³.

7.2 Control plan

The following PRINCE2 control techniques will be employed:

1. Highlight reports as dictated by the PRCO304 module
2. end-Stage reports
2. Review meetings with project supervisor as dictated by the PRCO304 module; additional ad-hoc meetings as are necessary
3. Risk management (see Section 8); communication plan (see Section 7.3); quality plan (see Section 9); exception reports¹⁴ and plans as necessary

¹³ See the Project Guidelines for details

¹⁴ Your supervisor does not wish to be notified about every minor issue in your project; an exception report is generated when something has gone significantly wrong (and you might give consideration to what significantly actually means). The exception report might be embedded in the next Highlight. An exception plan is your plan of action to recover from the exception – to be agreed with your supervisor.

7.3 Communication plan

The communication plan is in fact a form of control: it identifies the required/expected communication between project management team, project team, and other stakeholders. In your project the obvious two stakeholders are you and your supervisor, and so the communication plan should identify your agreed intended communication.

7.3 Communication plan

Review meetings will be held with the supervisor in line with the Control plan. Further ad-hoc communications will take place as needed.

In both 7.3 and 7.4, if there are any other stakeholders, for example a real client or users, then clearly you need to say something about their interaction.

8. Initial risk list

What can go wrong and what management strategies are you adopting now to deal with these?

8. Initial risk list	
Risk	Management strategy
Schedule overrun	Contingency has been introduced into the project plan. Highlight reports and review meetings will provide a regular monitoring of schedule. An exception plan will be developed, and approved by the project supervisor, in the event of more than 1 week's slippage ¹⁵
Difficulty learning/using the development technologies	A very simple system prototype will be developed during Stage 2 (Investigation and requirements).
Requirements breakdown (i.e., the stakeholders cannot agree on the requirements)	The prototype noted above may be extended to illustrate the contentious features. The conflict can ultimately be referred to the hotel owners for resolution.
Technology failure	The system will be deployed using standard technologies, and system backups will be taken daily
... your risk list will typically be longer than this	

¹⁵ So here "1 week's slippage" defines what is meant by "significantly wrong" in terms of schedule

9. Initial quality plan

What quality checks are you going to apply to your products, and when?

8. Initial quality plan	
Quality check	Strategy
Requirements	Requirements will be checked to ensure that they are correct, relevant (i.e., traceable to the business objectives), complete, achievable and demonstratable. The requirements will also document required product quality criteria (e.g., usability). Prototyping, user interviews and walkthrough will be employed.
Design validation	The design will be checked against requirements compliance, HCI guideline compliance, screen-design acceptance, DB normalisation and software design principles (e.g., cohesion, coupling)
Sub-system V&V ¹⁶	To be conducted at the end of each increment
System V&V and user acceptance	To be conducted within Stage 7

10. Legal, ethical, social and/or professional issues

You should provide an initial evaluation of these issues.

10.1 University of Plymouth Ethics Policy

You should ensure that your project conforms to the University's Ethics Policy relating to the use of "research involving human subjects" (see the Project Guidelines). The module has received approval for a certain class of usability studies (as detailed in the Project Guidelines). If your project is not covered by this approval, then a separate submission for ethical approval will need to be made (via your supervisor).

If possible, please confirm here whether or not an application for ethical approval will be necessary.

Finally note that the actual PID is not long: the examples above cover about 4 pages.

¹⁶ Verification and validation

If you don't have a real client?

Don't try to fictitiously create a client. This kind of falsehood has to be embedded right through the project, and it always ends up looking completely artificial.

There are a number of possible ways forward: in all cases Sections 3-10 above remain valid.

- 1) Firstly you could take the position that you are simply undertaking this project to satisfy the needs of PRCO304. In that case, let Section 1 provide an introduction to the project (without reference to a client), and replace Section 2 by a Background/Motivation section.
- 2) Sometimes students undertake a project in order to further develop their skills in a particular area. You can use the suggestion from 1 above, including mention of this skills development within Section 2 (Background/Motivation).
- 3) You could argue that, although you don't have a client at present, you believe there to be potential clients for your product. In that case, Section 1 can say who they are (in general terms), and Section 2 can describe their business need and possible business benefits to be derived from the purchase of your system (i.e., why they might want your system). If these potential clients were individual users rather than organisations (perhaps your product is a game) then a business need and business objectives – as described above – are not relevant, but you could in Section 2 still discuss why you believe they might purchase your product. In both cases you're in effect then providing a business case as to why you should invest your time in the project.

Project scope

In the document on writing your proposal, the advice given was:

- aim to be relatively ambitious
- ensure that the project can be divided into
 - a **core** (which you are confident of delivering, and which is in some sense a self-contained whole; for example if you are undertaking software development, then the core deliverables should yield a software system that is worth deploying¹⁷)
 - additional desirable elements that you'll undertake if you have time

¹⁷ Consider for example a hotel booking system: some features (e.g., the ability to make a reservation) are utterly core ... it simply would not be worthwhile trying to deploy a hotel booking system that did not have this feature.

There are two obvious ways in which you could incorporate such additional desirable/optional elements into a project plan.

- include additional elements into the plan for individual stages; you'll undertake these within the stage if you have time, else they'll be ditched or deferred to a later stage
- include one or more additional, optional stages

Having submitted your PID

Having submitted your PID, your supervisor will probably wish to meet to discuss; they will then either *approve* or *reject* your PID via the SPMS.

If your PID is rejected (and this is quite common), you'll need to find out why, and resubmit. Normally the issues that need to be dealt with are relatively minor.