Effective Writing

Writing a good Project Initiation Document

The PID is used to

- Establish history, context and justification for a proposed project – why and how the idea was created;

- Define what is in scope and out of scope and identify if the project will be delivered in phases;

- Discuss the technical and practical project feasibility;

- Identify all assumptions, dependencies, constraints and project risks;

- Propose a projected initial project plan with high level milestones and dates;

- Calculate the proposed project cost and ROI;

- Discuss project management strategies including methodology, communications, team organization, governance, quality plans, etc.

Disclaimers

The samples in this presentation

- The samples shown here are merely to illustrate the principles discussed.

- No sample is perfect; and even the good ones can be improved.

- Do not mimic or parrot back the language of these samples. Use your own voice! Otherwise, this could be considered plagiarism.

The templates themselves

- The templates have been collected from a variety of companies.

- No template is perfect; in fact most of the templates have glaring weaknesses.

- Sections of documents MUST make sense to the purpose of the document. Many templates do not adhere to this principle.

- If you like a section of a template, use it. BUT make sure you understand its purpose and agree with its inclusion.

- Do not mimic or parrot back the language of these samples. Use your own voice! Otherwise, this could be considered plagiarism.

- Templates are here to inspire you….not so you can "fill in the blanks."

Understand the audience for the PID

1. As an **IT approver** of this document, I am looking to understand whether I should allocate scarce IT resources for this project or choose another one.
The "Go / No-Go" decision

   - Do I believe the author understands enough (at this early stage) about the technology that could be in play?
   Is this project feasible?

   - Do I feel the author has adequately defined the resources needed to complete this project?
   (Is it a team of 9? A team of 12? What roles are required? Does the team need a database professional? A UI specialist?)

   - Things will go wrong. Do I believe that the author understands the most important project risks? Does the author have strategies for risk mitigation?

   - Do I understand the business value of this project?

   - Has the author developed an approach / methodology to complete the project?
   (Is there a high-level plan that makes sense? What training will be required? How will transparency to stakeholders be achieved? Are there review points? Agile? Waterfall? Hybrid?)

2. As a **business approver** of this document, I am looking to be satisfied that the PID adequately documents my needs

   - Does the project description cover the key aspects from my perspective?

   - Are my high-level requirements well stated?

   - Is the scope correct?
   (Are the right elements included Do the exclusions make sense?)

3. As a **consumer** of this document, I am looking to gain a good understanding of the project

   - What is the purpose of the project?

   - Why is the project important?

   - How will communications occur?

Establish history, context and justification for a proposed project – why and how the idea was created

- There may be many potential project opportunities. Why should this one be approved?

- Project background ✓

- Context of the proposed application with respect to the business problem to solve. ✓

- How important the project is. ✓

Sample 1

In the world of theater and entertainment there are many components which bring a production to life, two of which are props and scenery. A show with amazing moving props captures the audience and draws them into the world being created. This is where our project comes into play.

It is our job to help develop a user friendly interface which will be used to automate these productions. Having a user friendly automated system will help improve safety, reduce the cost of having to hire stage hands, and help users understand how to conduct the movement props and scenery.

The Theater and Stage Software is intended to be used by trained stagehands to rotate turntables, for example the production of Mary Poppins. In Mary Poppins there is a scene where she, the children and Bert are on a merry go round. This is a good example of a turntable. Before plays there should be a simulation mode for testing so they can visualize how it should move and accelerate and a execution mode for actually causing the motor movement. When they first get on, the table should start off slow and slowly accelerate till it gets to its intended speed and slowly decelerate as it comes to a stop to make sure no one loses their balance or is injured. If someone were to be put into harm's way for example something were to fall into the way of the turntable there should be an emergency stop to stop everything immediately. As well in case of a connection loss with the interface it should come safely to a stop

Define what is in scope and out of scope and identify if the project will be delivered in phases

Sample 1

✓ Quite clear

2.1 **In Scope**

The following is a list of components to be acknowledged and completed within the project:
- Data is exported from excel and can be imported back to excel
- Only csv files are accepted
- Imported data populates a template
- Sort and display data based on priority in an easy-to-read manner
- Use decoupled design
- Create visual of projects currently being worked on, what needs to be done, and show capacity don
- Create a search feature for specific project or department
- A feature in the GUI to minimize or expand information with each project
- Show what is in capacity and out of capacity

2.2 **Out Of Scope**

The following is a list of components that will not be considered within this version of the project
- Organizing data based on difficulty
- A feature to edit the data within the template itself
- Tracking percent complete for each project in progress-Priority scoring algorithm

2.3 **Future Phases Of Project**

Possible future phases of this project include:
- Track percent complete by release plan and program features
- Create algorithm to suggest best possible route for future sprint based on imported data
- Organize data based on difficulty or size
- Edit template inside of GUI

Discuss the technical and practical project feasibility

(Make a case that argues that your project is feasible, and not a pipe dream.)

Technical Feasibility

- Does the technology exist to successfully attempt this project? ✗

- Is the envisioned technical implementation considered very novel (and hence risky?) or is a very routine, well documented technical solution available? ✗

Project Feasibility

- Do we have human resources with the appropriate skills to complete this project

- Are the proposed timelines reasonable? ✗

Sample 1

> The Automated Agile Release Planning Visualization Tool is a feasible project. All of the members of the Scrum Team are well experienced in sorting and organizing data. The development team has had prior GUI experience and the Scrum team is efficient in learning on-the-go for parts of the project such as databases. All team members work well with each other and are well communicated. When need be, a Development team member may take a Spike to learn more information and the Scrum Master or Product Owner are both well suited to handle the Developer's work while they are Spiking

✓ Maybe the writing could be improved, but the sample document does address this area.

Identify all **assumptions**, dependencies, constraints and project risks

- Assumptions should be assumptions about the <u>project</u> to assist in the Go / No-Go decision. Maybe the approvers will agree that the assumptions are reasonable. Maybe they won't.

Sample 1

> There are a few assumptions we are making while we are programming such as that the motor is working, the parts are supplied with the appropriate amount of power, and the person controlling the software knows the appropriate maximum and minimum limits to set. We are also assuming the SEW has been configured correctly with the motors since this is outside of our scope

- "the motor is working, the parts are supplied with the appropriate amount of power"
  - OK. The writer is saying that they assume that appropriate equipment will be made available by the vendor.

- "the person controlling the software knows the appropriate maximum and minimum limits to set"
  - Not OK. This might be an assumption of the <u>coding</u> of the project, or expressed in a PBI, but this does not help someone make a go / no-go decision about the project.

- "the SEW has been configured correctly with the motors since this is outside of our scope"
  - OK, but could be reworded "We also assume that the code developed in a previous phase to configure the SEW with the motors has been correctly configured as this project depends on that code."

  Note: This could also be a DEPENDENCY

Identify all assumptions, dependencies, constraints and project risks

- Dependencies should give the approver an indication of what (if anything) the project is dependent on in order to be approved. For example:
  - Is this project dependent on another project or phase to be completed first?
  - Is this project dependent on access to confidential information?
  - Is this project dependent on having root access to a development server?
  - Is this project dependent on winning a grant or a contract?
  - Is this project dependent on launch of a new product?

Sample 2

> Dependencies define the order in which our PBIs are carried out; what needs to happen before we can start on a specific task. A majority of the stage and theater automation system project is dependent on the completion of the previous task. For example, before we can rotate the motor we need to be able to turn it on and before we can even turn it on we need to know what type of motor we are using.

- Is this really a dependency of the project? Or just a description of normal project development and the order the team will have to perform tasks? X

Identify all **assumptions**, dependencies, **constraints** and project risks

- Constraints should discuss any limitations placed on the project, e.g.,
  - Does a project have to be completed before the end of a fiscal year?
  - Does a project have to integrate with an existing system?
  - Does the project have to be written in a given language in order to be incorporated into a larger code base?
  - Does the project have to be completed within a certain budget?
  - Does the project have to be developed by only in-house resources? (No contractors)

Sample 3

> The team's skill level plays an important role in completing the project on time. For example a handful of us need to learn C# in order to code the project so we have created a SPIKE for this task. Failure to learn and understand the programming language may limit our ability to complete a set of PBIs (Product Backlog Items) on schedule.

- Is this really a constraint? Or is this a project risk?   X

Identify all **assumptions**, dependencies, **constraints** and project risks

- Constraints should discuss any limitations placed on the project, e.g.,
  - Does a project have to be completed before the end of a fiscal year?
  - Does a project have to integrate with an existing system?
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  - Does the project have to be developed by only in-house resources? (No contractors)

Sample 4

> **Size of Image Dataset**
>
> The size of the image dataset that will be collected in the initial sprints must be no smaller than two thousand images. Across the four different topics of images, this means no less than five hundred images per topic. The reason for this constraint is that to have an image classifier be trained accurately enough to produce good predictions on a random image, it needs a large amount of input data for training.
>
> **Training and Testing Environment**
>
> The environment in which this command line tool must be able to run has been constrained to Ubuntu 16.04. This is a non issue as it is relatively easy to create a cloud instance running this operating system with Google Cloud Platform. The computer running the program must also have a CUDA capable graphics card. This allows YOLO to process the images must faster than if it had to use the CPU (central processing unit). This is also a nonissue as Google Cloud Platform allows you to easily add a CUDA capable graphics card to any cloud instance.
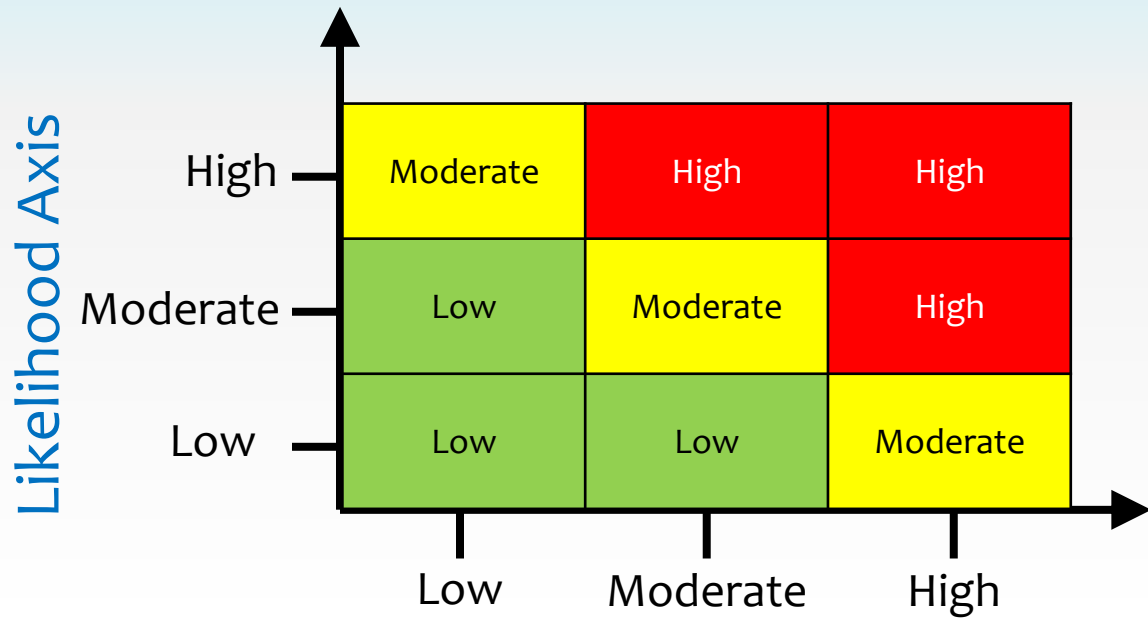
✓ Very nicely done.

Identify all **assumptions**, dependencies, **constraints** and project risks

- A Risk is an uncertain event or condition that if it occurs, has a positive or negative effect on a Project's Objectives.

- Simply put: "Project Risk is the possibility that something will not happen as planned."

- These are risks to the PROJECT, not risks of bugs or errors in the CODE.

- Risks need to be talked about using the language of Likelihood, Severity and Mitigation

  - **Likelihood**: How likely the risky event will occur. Likely? Or Unlikely?

  - **Severity**: If the risky event were to occur, how severe would it be?

  - **Mitigation**: If the risky even were to occur, are there any work-arounds or alternate solutions that could be done to lessen the severity?

    For example, if there was a risk that the project might require advanced database knowledge that the company did not possess, could that impact be mitigated by hiring an outside consultant?

Identify all **assumptions**, dependencies, **constraints** and project risks

- Each risk should plot Likelihood and Severity. Common grids are 3x3 or 5x5

- Risks are characterized by the intersection of Likelihood and Severity.

Likelihood Axis

	Low	Moderate	High
High	Moderate	High	High
Moderate	Low	Moderate	High
Low	Low	Low	Moderate

Severity Axis

Likelihood Axis

	Very Low	Low	Moderate	High	Very High
Very High	Low	Moderate	High	Very High	Very High
High	Low	Moderate	Moderate	High	Very High
Moderate	Low	Low	Moderate	Moderate	High
Low	Very Low	Low	Low	Moderate	Moderate
Very Low	Very Low	Very Low	Low	Low	Low

Severity Axis

- The most concerning risks are those that are characterized as high (upper right region of the matrix) with none or weak mitigation strategies.

- **These must be explained in greater depth!**

Identify all **assumptions**, dependencies, **constraints** and project risks
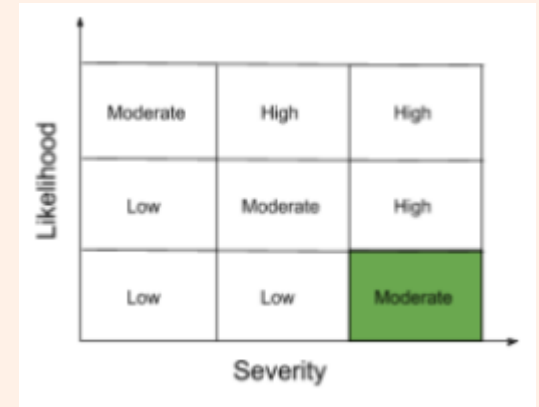
Sample 5

Utilizing YOLO to Test Image Classifiers

Testing an already trained image classifier using YOLO is another unknown to the team. Multiple images must be run through the trained image classifier and the resulting prediction by the image classifier must be compared to the defined bound to get accuracy metrics.

This is a low likelihood and high severity risk.

The low likelihood comes from the fact that this is one of YOLO score capabilities, which is running an images through a trained image classifier.
If how that is done, however, cannot be found out by the development team, then that would pose as issue in progression of the project. This risk will be mitigated, however, by ensuring the sprint that this functionality is introduced in has room for the research and testing that will be required.

Likelihood	Moderate	High	High
	Low	Moderate	High
	Low	Low	Moderate

Severity

✓ Very nicely done. The approver will be more confident approving this project knowing that the risks are so thoroughly analyzed.

Propose a projected initial project plan with high level milestones and dates

- This is tricky. The project has not even begun, yet you are being asked to make a projection on the schedule?!?

- This is important so that your approvers get some idea as to the magnitude of the project.
  - Are they signing up for a six month effort? Or a 3 year effort?
  - Will they see any interim releases (increments!) along the way?

- Remember, your project is not yet given a green light, so you can only make a reasonable guess as to how it will proceed.

- One good way is to project what the sprints will accomplish.

Sample 1

Sprint 0	• Meet with Mr. Shao, discuss project requirements • Setup product backlog in as much detail as possible to prepare for the coming sprints
Sprint 1	• Create basis of command line tool and add functionality to automatically download and configure YOLO • Gather 500 images for all four topics • Setup Google Cloud instance running Ubuntu 16.04 with CUDA capable graphics card
Sprint 2	• Add functionality to command line tool to view image datasets • Manually bound the topic of every image • Upload image dataset and bounds to Google Cloud Instance
Sprint 3	• Add functionality to command line tool to apply feature extraction to an image dataset • Add functionality to command line tool to train an image classifier using an image dataset
Sprint 4	• Add functionality to command line tool to test an image classifier using an image dataset • Load command tool onto Google Cloud instance
Sprint 5	• Use command line tool to produce feature extracted version of image dataset and train/test accuracy of original and feature extracted image classifiers to produce accuracy metrics • Write up experiment logs that document parameters and results for each feature extraction method

✓

Calculate the proposed project cost and ROI

- Costs can be hard costs that are calculated or soft costs which are qualitative

- Return on Investment (ROI) is how much value the customer will have compared to their investment over a period of time.

- ROI is a performance measure used to evaluate the efficiency of an investment. It is calculated by subtracting the project's costs from the benefits (value) and then dividing by the costs.

- ROI for year$_x$ = (Value for year$_x$ – Costs for year$_x$) / Costs for year$_x$

- ROI for years$_{x,y}$ = (Value for year$_{x,y}$ – Costs for year$_{x,y}$) / Costs for year$_{x,y}$

- Quantitative ROI is always best, but sometimes you have to be qualitative

Calculate the proposed project cost and ROI

- Sample ROI sheet created in Excel.

COSTS

	Amount	Units	Price/unit	Cost
YEAR ONE				
Programmer Labor	200	hours	$120	$24,000
Management Labor	40	hours	$200	$8,000
Database Licenses	16	users	$1,000	$16,000
Server in Cloud	12	month	$94	$1,128
TOTAL				$49,128

	Amount	Units	Price/unit	Cost
YEAR TWO				
Server in Cloud	12	month	$94	$1,128
TOTAL				$1,128

BENEFITS

	Amount	Units	Price/unit	Cost
YEAR ONE				
Sale of Product	5	customers	6000	$30,000
TOTAL				$30,000

	Amount	Units	Price/unit	Cost
YEAR TWO				
Sale of Product	10	customers	6000	$60,000
TOTAL				$60,000

ROI for Year 1	-0.39
ROI for Year 2	2.79

Calculate the proposed project cost and ROI

- Nicely described, but not an easy to understand ROI analysis

The primary cost of configuring displays as digital signage will be the purchase of a Pi kit for each display. The Pi 3 kit provided for our project cost $74.95, but that is a newer model that may be overkill for digital signage. Last-generation Pi 2 kits cost $44.95, budget-oriented Pi Zero Wireless kits cost $34.95, and Pi Zero non-wireless kits cost $24.95. Further testing will be required to determine which Pi is appropriate for product needs. For "child" Pis in particular, which merely display media content ,a lower-cost option may suffice.

An additional cost will be the employee time required to learn how to install and use the signage software. Installation will involve plugging each Pi into a display, loading the operating system via SD card, and executing the installer program. This should take less than half an hour for each display. The learning period for the software should also be brief, considering the expected simplicity of the software and the provided user manual. Fluency with the software should be achieved unless than an hour for most users.

We believe the business value of our software will offset the expected costs of implementing it. First, the cost of the popular signage solution Screenly ranges rom$20 per month for two screens and $800 per month for 130 screens. Other commercial options are priced similarly. Our free software will save hundreds or thousands of dollars per year.

Of course, the signage itself provides business value. It could inform employees about important policies, events, or changes within the company; promote good security practices in the workplace; and display content that boosts employee morale. Signage intended for visitors could positively influence their opinion of the company. Potential business partners or investors may form a first impression of the company based on digital signage

Sample 1

Discuss project management strategies including methodology, communications, team organization, governance, quality plans, etc.

- ## Methodology
  - Describe which methodology you are proposing. Agile/Scrum? Kanban? Waterfall> Hybrid?

- ## Communications
  - Meeting frequency
  - Will there be reports issued?
  - How will you have a <u>transparent</u> project? How will your stakeholders know about your progress

- ## Team Organization
  - How big a team? What are the roles of the team? Who are the stakeholders?

- ## Governance
  - How will decisions be made? How will you get guidance on the project?

- ## Quality Plans
  - What documents will you produce as part of this project?
  - How will your team ensure the quality of your product?