The Probability of Success Indicator tool (PSI)

How to assess a project in five minutes

Fergus O'Conell
leading consultant and trainer in project management

Management Summary

- Experience shows that projects are successful when the same nine things are closely observed - the project goal, the plan, the leader, the availability of people, the opportunity, the risk, the management style of the project manager, the way the project is tracked and reported.
- To get a fast overview of these nine parameters, it is important to take the 'vital signs' of the project with a tool called Probability of Success Indicator (PSI). Each parameter is scored, resulting in a total score of 100 when added together.
- A total score of 100 means that the project was perfectly planned and successfully finished. A score below 60 in an advanced stage of the project is comparable to warning lights on the dashboard of a car: Look carefully at which scores are too low and try to increase them.
- The PSI can be captured with only five questions in a few minutes. It can be used as a project dashboard, on status reports, for project status meetings, when inheriting a project or to rescue a project.

If you like TV hospital dramas, you will be familiar with the term, 'vital signs'. We all know that scene where the stretcher comes through the door and the accident and emergency doctor checks for the patient's 'vital signs'.

There are a handful of things - especially pulse rate, temperature, respiration rate, and blood pressure - that doctors can check very quickly and which give the doctor key information about the state of the patient's essential bodily functions.

Just as people have vital signs, projects have vital signs. There are a handful of things whose presence or absence gives a project manager key information about the health of a project.

This article describes these vital signs, how to check for them and why this is a versatile tool for a project manager to have in his or her bag of tricks.

The tool is called the Probability of Success Indicator (PSI).

The Probability of Success Indicator for the vital signs of a project

The PSI is a measurement you can take at any point in a project's life and it tells you how likely or not the project is to succeed. There are three versions of it – Simple, Intermediate and Advanced. This article describes the Simple version. First, I will describe the background of PSI and the criteria of maximum reachable scores. Afterwards, I explain how to interpret the results and give examples for uses of the PSI. At the end, you will find an example of a project's PSI and my approach to use the results in that project.

Note: The Simple PSI measures only nine aspects of a project; the Intermediate and Advanced versions measure more than that. For example, the Advanced PSI consists of five pages of questions on many different aspects of a project. The advantage of using the Advanced PSI is that it's a complete comprehensive assessment of a project. However, the disadvantage is the length of time it takes to gather all the answers to the questions. The beauty of the Simple PSI is that it can be calculated very quickly – literally in minutes.

In our company we have been using the PSI since we were founded in 1991. In reality, we use the Simple PSI constantly, the Intermediate hardly at all and the Advanced only when a client is looking for a very comprehensive written evaluation of a project. Normally, we use the Simple PSI and it always yields good results. If anybody needs copies of the Intermediate and Advanced PSIs, I will make them available for a free download on our website www.fastprojects.org.

Why I created the Probability of Success Indicator

The Simple PSI was born out of my experience of being involved in projects, whether as a team member (early on in my career) or later, as a project manager. It became clear to me that when projects succeeded or when they went wrong, they pretty much always did so because people had either dealt properly with (or failed to deal properly with) the same nine things – the project goal, the plan, the leader, the availability of people, contingency, risk, the project manager's leadership style, how the project is tracked and how it is reported. Yes, there may be other factors involved but again and again these nine factors seemed to have the biggest influence on whether the project succeeded or failed.

How is the PSI measured?

The PSI is measured by rating the project against the following criteria:

	Criterion	Available score
1	How well-defined (or not) is the goal?	20

2	Is there a final, detailed list of tasks (plan) in which every task has been broken down to the 1-5-day level of detail?	20
3	Does the project have somebody who, day-to-day, shepherds all of the tasks forward?	10
4	Are there people to do all of the tasks identified in 2? Do those people have enough time available to devote to the project?	10
5	Is there contingency in the plan?	5
6	Has an up-to-date risk analysis been performed and are the jobs to reduce those risks part of the project plan?	5
7	How much does the project manager vary his or her management style with the circumstances: micro-managing where necessary and hands-off in other situations?	10
8	Is the project tracked on a regular basis? Never = 0; Daily = 10	10
9	Is there a weekly *meaningful* status reporting?	10
	Total	100

Table 1: Criteria of the PSI

How to calculate the PSI

1: How well-defined (or not) is the goal?

This is a measure of how well defined the goal is. The acid test here is that if you ask each stakeholder what the goal of the project is, and if each gives you almost exactly the same reply, then the goal is well defined. Otherwise it is not. You only get a 20 when the project is complete because only then do you know exactly what was achieved. A project which is at a very early stage and where the goal has yet to be nailed down would have a low score. A project where the goal has been reasonably clarified but agreement is still needed from some of the stakeholders would get a medium score. Pick a number between 0 and 20.

2: Is there a final, detailed list of tasks?

This is a measure of how complete the list of tasks is. Zero is no list. You might get 2 or 3 for a high-level Work Breakdown Structure. You only get 20 when the project is complete because only then do you know exactly what the list of tasks was. Pick a number between 0 and 20. If the goal (Step 1) scores low, then this will have a low score, since, if you don't know what you are trying to do, how could you have a list of jobs to do it?

3: Does the project have somebody who, day-to-day, shepherds all of the tasks forward?

If the leader can be named and that person has adequate time available to run the project, then score 10, otherwise score 0. This is the simplest way of doing it and for the Simple PSI, simple is best.

4: Are there people to do all of the tasks identified in 2?

If there aren't any / enough people to do the work, score this 0 or low. Put simply, if there are 100 person-days of work in the project, there have to be 100 person-days' worth of people available to do that work.

5: Is there contingency in the plan?

The more contingency, the higher is the score out of 5.

6: Has an up-to-date risk analysis been performed?

How well or how badly have the risk-reducing activities been identified? Have they been carried out? For a project with many high risks, score low; for projects with few high risks, score high.

7: How much does the project manager vary his or her management style

Pick a number between 0 and 10 based on how well the project manager adapts his or her management style to the circumstances. For example, a team member who is experienced, motivated and known to get things done, will manage differently than somebody who is straight out of university and in his first job.

8: Is the project tracked on a regular basis?

Pick a number between 0 and 10 based on how well the project manager uses the plan to steer the project. If the plan was thrown out as soon as the project was given the green light, score 0. If the project plan is updated daily, give 10. In every other case, pick a number between 0 and 10.

9: Is there a weekly meaningful status reporting?

Pick a number between 0 and 10 based upon the regularity and adequacy of status reporting.

How to interpret PSI

If the goal is not right, nothing will be right

If the goal is not right, you will miss one of the two opportunities to get a high score. But more importantly, you should notice now how it all unravels from here: If you don't know what you're trying to do, creating a list of tasks [plan] to do is impossible. It is worth noting that setting stakeholder expectations can also be impossible. If you don't know what you are trying to do how could you set them? What will happen then is that everyone will set their own expectations. (Note that the UK government's handling of Brexit is a textbook example of this.) Thus, the list is flawed from the start, resulting in missing the second opportunity to get a high score. If the list is flawed, then project managing that list (3) is impossible, as is assigning people to the tasks (4). Contingency (5) and risk analysis (6) have no meaning. (7) - (9) all require the task list; a flawed task list causes these to fall apart as well.

60 is an important threshold

In using the Simple PSI over many years, we have observed that 60 appears to be an important threshold. A PSI should start off low and rise steadily over the life of the project. Initially, projects

may not score more than 60, and this can just mean that there is more work to be done in terms of scoping the project (1) and planning it (2 through 6). However, a project should quickly go above 60 and stay above it. Notice that the latter is not guaranteed and a project can drop back again. This could happen, for example, if there was no or inadequate change control on the project.). How quickly a project crosses the 60 threshold will be different for each project. **The key thing is to get it past 60 as quickly as possible and keep it there.**

Low individual scores always point you at the priority problem areas

In a very real sense low individual scores are exactly like warning lights on the dashboard of a car. They tell the project manager where the problem areas are in the project. Warning lights always need to be addressed as a matter of urgency.

You can do anything you like on a poorly planned project and it won't make any difference

You may have heard of Brooks' Law – 'Adding people to a late project makes it later.' If your project gets into difficulties, go back and look at the plan; don't simply, for example, blindly ask everyone to work harder. The problem is in the plan, not in the execution of the plan.

Uses of the PSI

The PSI is a very versatile tool with numerous uses described here:

- Use the PSI as a project dashboard
- Put the PSI on status reports
- Use the PSI for project status meetings
- Use the PSI if you inherit a project
- Use the PSI to rescue a project

Use the PSI as a project dashboard

1. Calculate the PSI as described above.
2. If any of the nine individual scores are low, consider these as warning lights on your dashboard.
3. These lights need to be put out, so take the necessary action(s) to do that.

Put the PSI on status reports

1. Calculate the PSI as described above. Do this each week.
2. Draw a graph that maps each week's PSI score (on the vertical axis) graphed against time in weeks (on the horizontal axis).
3. If the project is going well, you should see the PSI steadily climbing over the life of the project.
4. This is a helpful visual illustration of progress – particularly for project stakeholders.

Use the PSI for project status meetings

Decide whether you need a project status meeting at all by doing the following:

1. The project manager and the project manager's boss both calculate the PSI and then compare the scores and the totals.
2. If the numbers are identical or very close, then there's probably no need for a status meeting since all of the project essentials are in good shape.
3. On the other hand, if there are any pairs of numbers that differ wildly, this gives the agenda for the status meeting – these are the issues that need to be addressed.

Use the PSI if you inherit a project

You have to take over a project that is already running. What do you do next? For most project managers the next few days, weeks or even months become a muddle of:

- Reading up.
- Holding status meetings where you don't know if what you are being told is true or not.
- Trying to understand the nuts and bolts of the project.
- Hoping not to make a wrong decision in the process.

You can save yourself from all of this by asking the team, at most, 5 questions when you inherit the project.

5 Questions when you inherit a project

The five questions come directly from the PSI.

Question 1: "What's the goal of this project?"

You need two pieces of information to answer this.

The first can be given to you in a sentence. "We're making a _____." "We're solving the _____ problem." "We'll be done when _____". For example, a project I worked on back in 1986: "We're building a laptop computer capable of running a variety of useful software packages".

The second is a document that describes this in detail. This document specifies:

- **Project Scope**: The features, boundaries and business functions that will be included in the product or service under development.
- **Project Deliverables:** What deliverables will be generated during and on completion of project.

This is important so that (a) the project stakeholders know exactly what they are going to get from the project and (b) the project manager and his or her team know exactly what they have to deliver.

If your team is able to deliver these two things you can proceed to question 2. If not, if the team starts to tell you a story, then you are probably in trouble. It probably means that there is no written document which means that they don't really know the true scope of the project or what the deliverables should be. Stories are great at the movies or in novels; they are almost inevitably bad in projects.

If they give you a story, you have learned all you need to know. You have to re-plan the project.

Question 2: "Can somebody show me the plan?"

If they can't or if they say things like, "Well, we have a high-level plan", you have a problem. You will then have to do a proper plan for the project.

If they hand you a plan, **the first thing to check is whether it contains work**, i.e. person-days (PD) or person-hours (PH). If it does not, it is not a plan – it is a timeline – and the problem with timelines is, that they can show almost anything. Timelines can have no basis at all in reality.

If the plan does not contain work, nobody has figured out how much stuff has to be done. Inevitably, there won't be enough people to do each task and the result of this will be, at best, people working overtime or the project does not get completed.

If the plan does contain work**, the other thing to check is the level of detail in the plan**. Divide the total work in PD by the number of tasks in the plan. The result should come out somewhere in the range 1-5. If it does not, there is not enough detail in the plan and you need to add it.

If the result comes out greater than five, it means that there are tasks in the plan which need to be broken into smaller elements of detail. For example, a 10 PD task needs to be broken down into approximately two until four subtasks.

Assuming you are in good shape at this stage, go on to Question 3.

Question 3: "Do we have enough people?"

The best way to answer this question is not to take anybody's word for it but rather to do some basic arithmetic as follows:

You can think of the project as being a problem in supply and demand. Demand is the total work in PD. Supply is the people available to do that work. Here's a simple example to illustrate:

Demand:

100 PD (taken from the plan)

Supply:

- Angela is putting in 20 PD.
- Bob is doing 30 PD.
- Charlie is doing 15 PD, this means that you're SHORT 35 PD, which is then an issue to be solved.

Assuming you have made it this far, there are just two remaining questions.

Question 4: "Can somebody show me the latest Risk Analysis?"

If they can, good; if they can't, you should better do one.

Do this by doing the following:

1. Identify the risks in the project – the things that could cause it to fail or get into trouble.
2. Grade these risks as to their likelihood (L) – how likely are they to happen? Use a scale of 1-3 where 1 is not very likely and 3 is very likely.
3. Grade the same risks to their impact (I) – if they do happen, will they have a big effect or a little effect? Use a scale of 1-3 where 1 is a minor and 3 is a big effect.
4. Multiply L by I to give Exposure (E) – how exposed are you to the risk. It will be a number between 1-9.
5. For risks where E is 6 or 9, identify actions you can take to reduce or eliminate these risks. You will find downloadable template for this on www.fastprojects.org.

And finally:

Question 5: "Where's the contingency [time buffer] in the plan?"

If a time buffer is there, good. If not, you need to put it in.

In a matter of minutes you can ask just five questions and you will be totally in command of the project.

Use the PSI to Rescue a Project

You need to rescue a project when it was meant to go someplace – let's say from A to B – but in reality, it went someplace else – C.

A rescue is usually triggered when somebody – for example, a boss, a stakeholder, the project manager – realizes that the project is nowhere near where it was expected to be. This often occurs quite late in what was the original project schedule.

A fairly standard knee-jerk reaction is to tell everybody in the team to work harder and longer hours.

However, by this time, the project is usually past the point where that would have any kind of value.

To rescue a project in such a situation, there are three things you have to do:

Understand what went wrong. Why did it go to C?
Just calculate a PSI for the project and it should give you the answer.

Communicate this to everybody involved
A rescue is a situation that calls for diplomacy, sensitivity but also straight talking. That can be a tough act to pull off. As the rescuer, the worst thing you can do is to come along with an "I'm here to sort out the mess you've created" attitude. It won't win you friends or cooperation.

The best thing you can do is to let the people who took the project to C to figure out for themselves why this happened. The PSI is the perfect tool for doing that. You sit down with the team and explain how the PSI works and then ask *them* to score their own project. Very quickly then, they can see where the issues in their project are. You have to say nothing, pass no judgment – they do that themselves.

Fix it. Make a plan to go from C to B*

Make a plan to go from C to B – and allow for the possibility that B may have moved by this time, let's call the new goal B*. So – make a plan to go from C to B*. Critically, the plan you come up with needs to fix the issues that the PSI has highlighted.

Practical example of Assessing a PSI

The following is an example of using the PSI on a real project. The project was for a software company looking to develop an interactive learning product. For obvious reasons, the company name has to be kept confidential. A new CEO had been hired to run the company. Since this was the biggest project the company had ever done, the CEO wanted to get a second opinion to whether the project was in good shape or not. I was asked to give this second opinion. We did this by me explaining the Simple PSI scoring scheme to the CEO and her then giving the scores based on her knowledge of the project.

The project was scheduled to take 17 months and had been running for just over ten months at the time the PSI was calculated. Thus, the project was believed to be nearly two-thirds of the way through its life.

There were 250 people working on the project in three locations – one in the US, one in Europe and one in India, where the bulk of the work was being carried out. The product consisted of ten main components and so, the 250 people were split into ten teams, one per component, each with its own project manager. The project was crucial to the organization and so an executive had been given the task of running it. There was lots of activity on the project. People were working long hours. The team believed that the project was in good shape.
These were the results of the projects PSI:

How well-defined or not is the goal? (Available Score 20)

Specifications for some of the product still did not exist even though the project was meant to finish in seven months. When asked to estimate how much of the product remained to be specified, the CEO estimated "10-15%".

Based on the proportion of specifications completed to those still not done, the score was 14.

Is there a final, definitive detailed list of tasks where every task has been broken down to the 1-5 day level of detail? (Available Score 20)

The quality of the planning across each of the ten components was very uneven. Some of the components had detailed Gantt Charts, some had nothing more than a high-level Gantt Chart. None of the Gantt Charts showed calculations of effort – all focused only on duration. In other words, they were timelines, not plans. Finally – and obviously – the pieces of the product that hadn't been specified had no estimates.

Since only 70% (14/20) of the project had been defined, this is the most that this could have scored. A 70% would have been possible if all the parts of the project that were specified had plans.

However, as mentioned already, the plans were Gantt Charts showing durations. No estimates of effort had been made. Thus, it was impossible to know how much work in person-days had to be carried out. We scored this (a rather generous) 10.

Does the project have somebody who, day-to-day, shepherds all of the tasks forward? (Available Score 10)

An executive assigned to run the project still had all his other responsibilities, so he could not possibly give enough time to a project of this magnitude. The executive saw his job as just coordinating the ten project managers and assumed that the ten project managers were actually shepherding the project forward. The executive saw it as his job to merely referee any disputes that arose and to ensure that morale stayed high. Score 0.

Are there people to do all of the tasks identified in 2? Do those people have enough time availability to devote to the project? (Available Score 10)

Really, this question is whether there is adequate Supply to match Demand. Since the Demand (work to be done) was unclear, this question couldn't be answered accurately.

Since only 50% (10/20) of the jobs had been identified, this could have scored no more than 50%. Score = 5.

Is there contingency in the plan? (Available Score 5)

No. There is not really a proper plan so then, it is really not possible to say that there is contingency. Score 0.

Has an up-to-date risk analysis been done and are the jobs to reduce those risks part of the project plan?

No risk analysis had ever been carried out on this project. Score 0.

How much does the project manager vary his or her management style with the circumstances, micro-managing where necessary and hands-off in other situations? (Available Score 10)

See the earlier description of the executive in charge of the project. Score 0.

Is the project tracked on a regular basis? Never = 0; Daily = 10 (Available Score 10)

See the earlier description of the executive in charge of the project. Score 0.

Is there weekly meaningful status reporting? (Available Score 10)

There was no plan to track against so any status reporting that may have been done would have been meaningless. Since there is no proper plan, status reporting has no meaning. Score 0.

Summarized you find here the available and reached scores of the project:

	Criterion	Available score	Actual score
1	How well-defined or not is the goal	20	14
2	Is there a final, definitive detailed list of jobs where every job has been broken down to the 1-5 day level of detail?	20	10
3	Does the project have somebody who, day-to-day, shepherds all of the jobs forward?	10	0
4	Are there people to do all of the jobs identified in 2? Do those people have enough time availability to devote to the project?	10	Since only 50% (10/20) of the jobs are identified, this could have scored no more than 50%. Score = 5.
5	Is there contingency in the plan?	5	Score 0.
6	Has an up-to-date risk analysis been done and are the jobs to reduce those risks part of the project plan?	5	Score 0.
7	How much does the project manager vary his or her management style with the circumstances, micro-managing where necessary and hands-off in other situations?	10	Score 0.
8	Is the project tracked on a regular basis? Never = 0; Daily = 10	10	Score 0.
9	Is there weekly *meaningful* status reporting?	10	Since there is no proper plan, status reporting has no meaning. Score 0.
	Total	**100**	**29**

Table 2: The PSI of the software company's project

Conclusion of the project

The project is supposedly nearly two-thirds of the way through its planned life and yet its PSI is well below 60. The project is in disastrous shape and is going nowhere. It has no chance of succeeding in its current form and will seriously overshoot its budget and deadline.

To rescue this project, the following steps were carried out in the order indicated:

1. The specifications were completed as a matter of urgency. This caused the 14/20 score to climb.
2. With the goal specified, it was possible to finalize the detailed list of tasks (causing the 10/20 to climb).
3. By including contingency in the plan and doing a risk analysis, scores 5 and 6 both climbed.
4. The plan was then used to reset the expectations of the stakeholders (which was not a pleasant exercise).

5. Now people were working on the right things and proper progress began to be made. The project was eventually delivered six months later than had been originally promised and $ 4.5 million over budget.

Conclusion

The Simple PSI is a very basic tool. It measures just nine aspects of a project. There are many things it does not measure or consider. Despite this, my experience over the years has been that it always gives good information. I personally have *never* used the more sophisticated versions and my colleagues in my company only use them when we are asked to do a fully detailed written assessment of a project. We have a client who calls the Simple PSI "the gift that keeps on giving".

I would recommend the PSI to anyone starting a project, already running a project or taking a project over from somebody else.