

Risk Management

Organizations have been practicing risk assessment and risk management since the 17th century, and “since the beginning of recorded history, gambling – the very essence of risk-taking – has been a popular pastime and often an addiction” (Bernstein 1998). Yet, most companies do not formalize their risk management plan. Risk management should be a systematic process to identify, analyze, treat and monitor all possible risks. There are many different descriptions of this systematic process, but they all have these fundamental steps:

1. Identify – making a list of all possible risks that could happen.
2. Analyze/Assess – give each risk identified a probability and impact it could have.
3. Plan – create risk management plan.
4. Track & control – continuously monitor the risk and respond when it actually happens.

Identify

There are many commonly used techniques for risk identification. Such as documentation review, information-gathering techniques (brainstorming, Delphi technique, interviewing, SWOT), checklists, assumptions analysis, and diagramming techniques (cause-and-effect diagrams, process flow charts, influence diagrams) (PMBOK 2000). These techniques will produce a long list of risks that will have to be processed. This unorganized laundry list of risks does not provide the big picture view of the project risks.

The Risk Breakdown Structure (RBS) is similar to the Work Breakdown Structure (WBS) commonly used in estimating the work required to get a project done. It’s a top-down breakdown of the risks faced by a project. A RBS is “a source-oriented grouping of project risks that organizes and defines the total risk exposure of the project. Each descending level represents an increasingly detailed definition of sources of risk to the project” (Hillson 2002). Just as in WBS where we have a big picture of work needed but can also dig down to see the details of each item, RBS does exactly the same thing for risk identification. This creates a more organized list of risks to aid in their comprehension and interpretation (see Figure 1). Since not all projects are the same, organizations wanting to use the RBS should develop their own specialized RBS, either one generic one covering all the projects or specialized ones depending on the project types.

RBS is used in risk identification phase, brainstorming process where project members try to identify all the risks at the first and second levels of the RBS. Once this is done, you can convert it to a risk checklist by taking the lowest level risks of the RBS – this is equivalent with the risk list that you would gather if you used the previously mentioned common techniques. Working in reverse, you could also take a risk list gathered by other methods, and put it in the RBS structure. This could reveal some holes or duplications in your original risk list.

By using the RBS structure when identifying risks, it will give you perspective of where are the risks coming from, concentrated at, and also dependencies between risks. This information should help in focusing risk response efforts in the high risk areas.

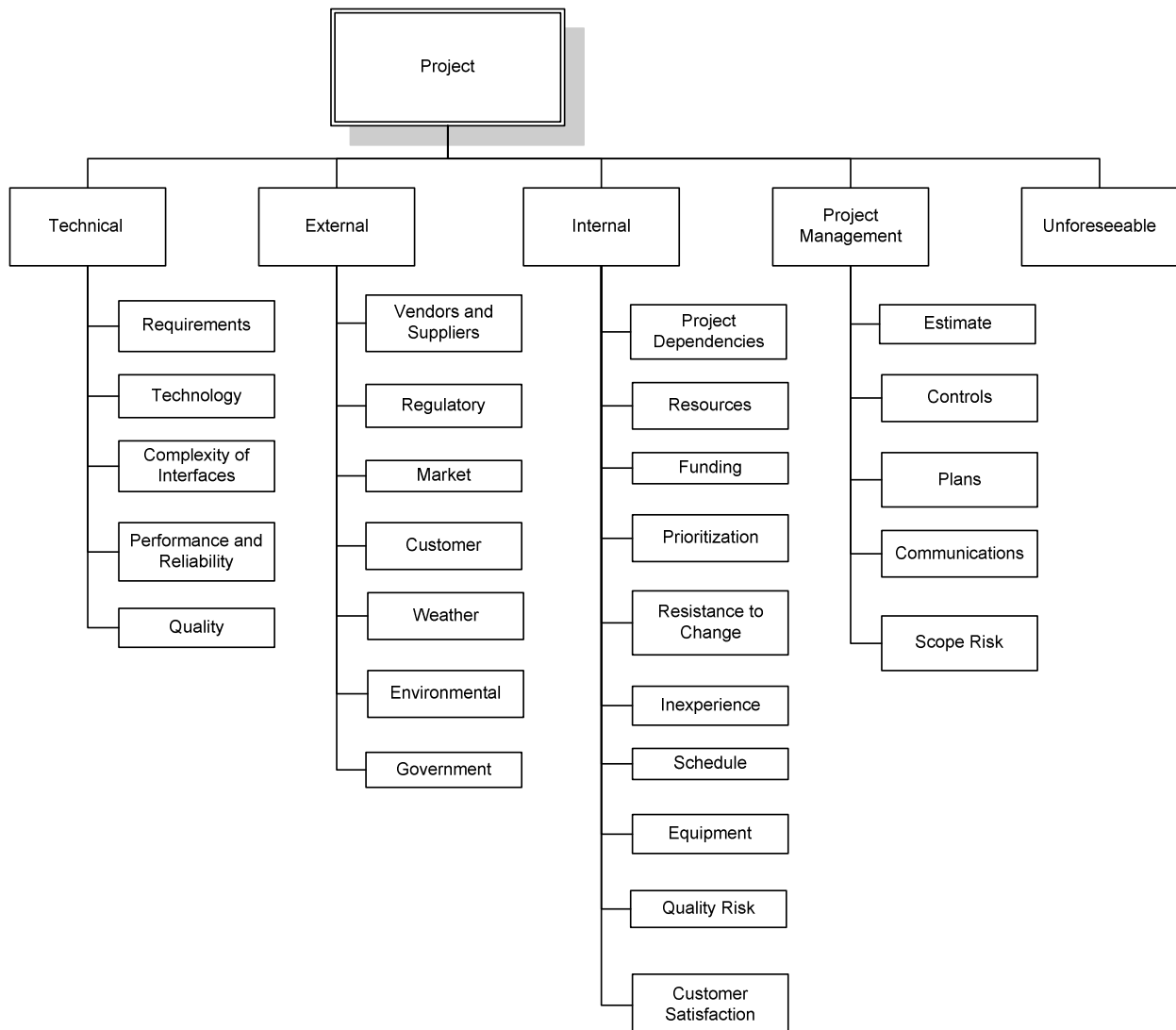


Figure 1 – Sample of RBS (Hillson 2002)

Analyze

To identify the risk concentration areas, the number of risks identified is not enough of an indicator. There could be a lot of minor risks in one area that is still not as important as a single major risk that could halt the project entirely. A common method of giving a “risk score” to each risk is the Probability – Impact scoring. Each risk identified in the previous step is assessed by giving it a probability of it happening and the amount of impact to the project. A Probability-Impact Matrix (see Figure 2) should be used to help you prioritize the risks and spend the appropriate amount of time depending on the severity of the risk.

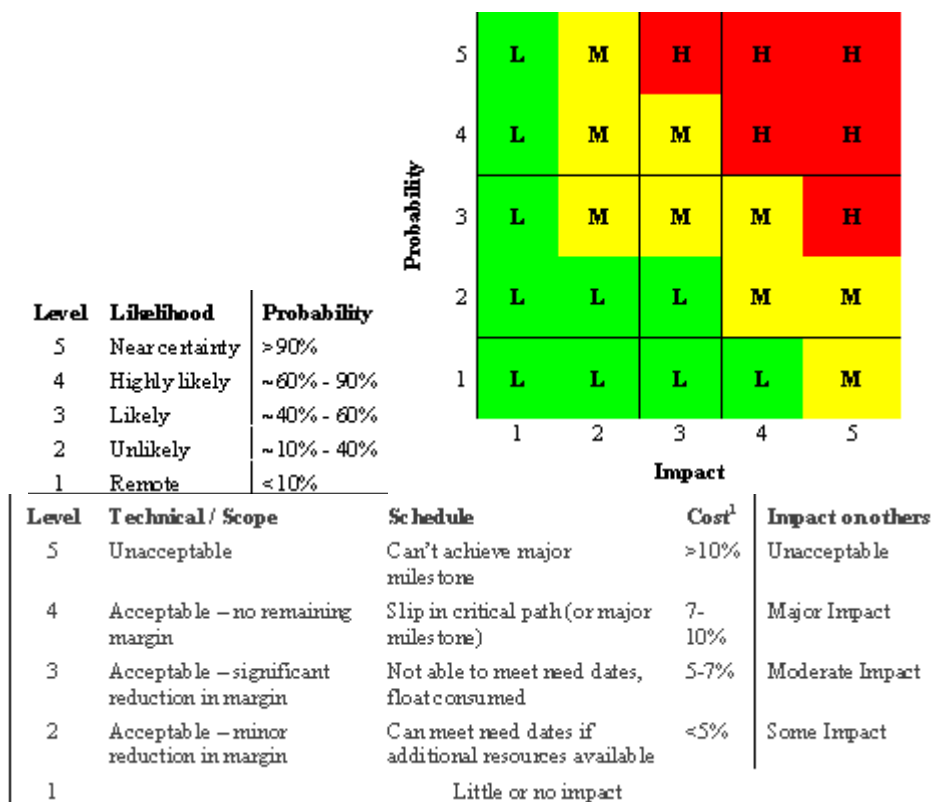


Figure 2 – Probability-Impact Matrix (Stout 2003)

At first glance, one might think that all risks are random, but the reality is, there are random and non-random (learnable) risks. Random risks are risks that no matter how much you try, you won't be able to gain any more insight of that risk. The free market is an example of random risk – no one can consistently predict where the stock market will go. Non-random risks are risks that can be learned or understood to reduce its uncertainty. One novel idea is the concept of “Risk Intelligence” (Apgar 2006) – it's the measure of our ability compared to competitors to assess the risk.

These are the 4 rules of risk intelligence:

1. **Recognize** which risks are learnable – don't waste your time on random risks.
2. **Identify** risks you can learn about fastest – this is how you get an edge over competition.
3. **Sequence** risky projects in a “learning pipeline” – don't try to take on too many risks you need to learn, but keep yourself challenged by trying to learn new risks too.
4. **Keep** networks of partners to manage all risks – distribute risk to whoever can best absorb it.

We need to realize what we're good at, and what we're not-so-good at to be able to apply our efforts more efficiently.

Plan

A plan needs to be developed for each of the high risks, some of the medium risks and keep an eye out for the low risks.

There are 5 classic strategies that can be done for each negative risk:

1. **Avoid** – change the project plan to avoid the risk (ex: risk of earth quake in California, move plant to Kansas).
2. **Transfer** – transfer the threat to another party, usually involving a fee (ex: hiring consultant/insurance premium).
3. **Mitigate** – take positive action to reduce the risk (ex: train a second person as backup).
4. **Accept** – don't do anything to prevent it, accept the consequences when it happens.
5. **Monitor** – design a fallback plan when risk happens.

Less talked about are positive risks (opportunities). A plan should be developed for capturing these opportunities too (Elyse 2007):

1. Share the responsibility and accountability to seize the opportunity.
2. Enhance the chances by focusing on the trigger conditions.
3. Exploit the opportunity by assuring you'll get it (ie. Hiring expert).

Track & Control

Once the plan is in place, we need to constantly monitor the situation to see if any of the risk came true. If it does, respond to it with the plan of action determined earlier. Keep monitoring the risk and keep track of the progress with a risk log. Risk management is a systematic *process* because it's a continuous task (see Figure 3) that runs throughout the lifetime

of the project. As you reach big milestones within the project, plan to repeat these four steps again. Situations changed that might introduce new risks and eliminate ones we've prepared for. To be successful, risks needs to be managed proactively.



Figure 3 – Continuous process (Rosenberg et. al. 1999)

As risks occur or not, the risk plan needs to be updated; a risk database should be kept and risk checklists should be updated for future projects. The key to a successful risk management plan is to continuously go through the process throughout the life of your project.

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