



جامعة الجميع الذكية
EVERYONE'S SMART UNIVERSITY

Everyone's Smart University

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Project Risk Management

Introduction:

The traditional risk management focuses on the risks resulting from physical or legal causes (for example: natural disasters or fires, accidents, death and lawsuits). On the other hand, financial risk management focuses on those risks that can be managed using financial barter tools. Regardless of the type of risk management, all major companies as well as groups and smaller companies have a dedicated risk management team. In the case of ideal risk management, a prioritization process is followed, so that risks with higher losses and higher likelihood of occurrence are addressed first while risks with lower losses and less probability of occurrence are treated later. In practice, this process can be very difficult, and the balance between high-probability risks and low losses versus low-likelihood risks and high losses may be poorly handled. Management of intangible risks defines a new type of risk, which is those that have a 100% probability of occurrence, but they are ignored by the institution due to the lack of the ability to identify them. An example is the knowledge risk that occurs when deficient knowledge is applied. As well as relationship risks and occur when there is ineffective cooperation. All of these risks directly reduce the productivity of knowledge workers and reduce the effectiveness of spending, profit, service, quality, reputation, and quality of gains. Risk management also faces difficulties in allocating and distributing resources, and this clarifies the idea of opportunity cost as some of the resources spent on risk management could have been used for more profitable

activities. Once again, an ideal risk management process reduces spending while minimizing negative risk outcomes as much as possible. Risk management must be integrated with the corporate culture and with effective policy and programs of senior management. Risk management strategies should translate into practical and tactical goals and define responsibilities throughout the organization for each manager and employee responsible for managing risk as part of his / her job description.

Types of risk

There are two types of risks, one of which relates to the moral and social aspects of people and does not directly affect the economic and financial aspects of them, so it is known as moral (non-economic) risks, and the second type relates to the economic and financial aspects of people and therefore it is called economic risks that directly affect their economies.

First - moral dangers (Non-economic):

It is the one whose causes achieve a purely moral loss, i.e. it has nothing to do with the financial and economic aspects of people, for example the death of a religious reformer, a dear friend, or a great leader and leader, as the survival or death of any of these does not return to the other person any profit or loss in income or property In a direct way, but it affects positively or negatively on his moral and psychological state.

Second - Economic Risks:

They are those dangers whose causes are an economic loss, usually borne by the decision-maker in the form of loss of income, a decrease in its value, loss of an asset or a decrease in its value, or also in the form of a decrease in sales and the consequent realization of losses.

These dangers are clear with regard to the risk of death associated with the loss of income, and with regard to the risk of fire associated with the loss of the asset, and other economic risks related to the loss of financial or economic aspects to which all elements of production are exposed, namely capital, labor, land and administration.

Types of economic risks:

Economic risks are divided according to their origins into personal risks, i.e. speculation and natural hazards, i.e. pure, where a distinction can be made between them if the reason for their emergence is searched. Below is the definition of the concept of each of them:

1. Personal risks (speculation):

They are those dangers that are caused by phenomena that a person creates by himself and for himself by imposing a benefit, profit or interest, but he is afraid that this goal (profit) will not be achieved. These dangers appear clear in all commercial, industrial and service businesses that arise with the intention of making a profit from dealing in them. For example, a person who buys shares in the stock market, he will make a profit if the share price rises and he fears a loss, which is a drop in the share price.

2. Natural hazards (pure):

They are the ones that are caused by natural and general phenomena that the person has no income in their existence and he cannot avoid in any way, and their realization

entails a certain financial loss and there is no room for it for any speculation, and these risks often involve the opportunity to lose in relation to the thing at risk, that is, no one expects Whoever makes any profit, and examples of these dangers are the risk of death that results in interruption of income, the risk of fire that results in loss or shortage in the value of the exposed thing, and the dangers of earthquakes, volcanoes, floods ... etc.

Environmental risks threatening humanity

The twenty-fourth conference of the parties participating in the United Nations Framework Convention on Climate Change will be held in the Polish city of Katowice on the third day of December. Planet Earth is currently facing many environmental concerns, most notably pollution and climate change.

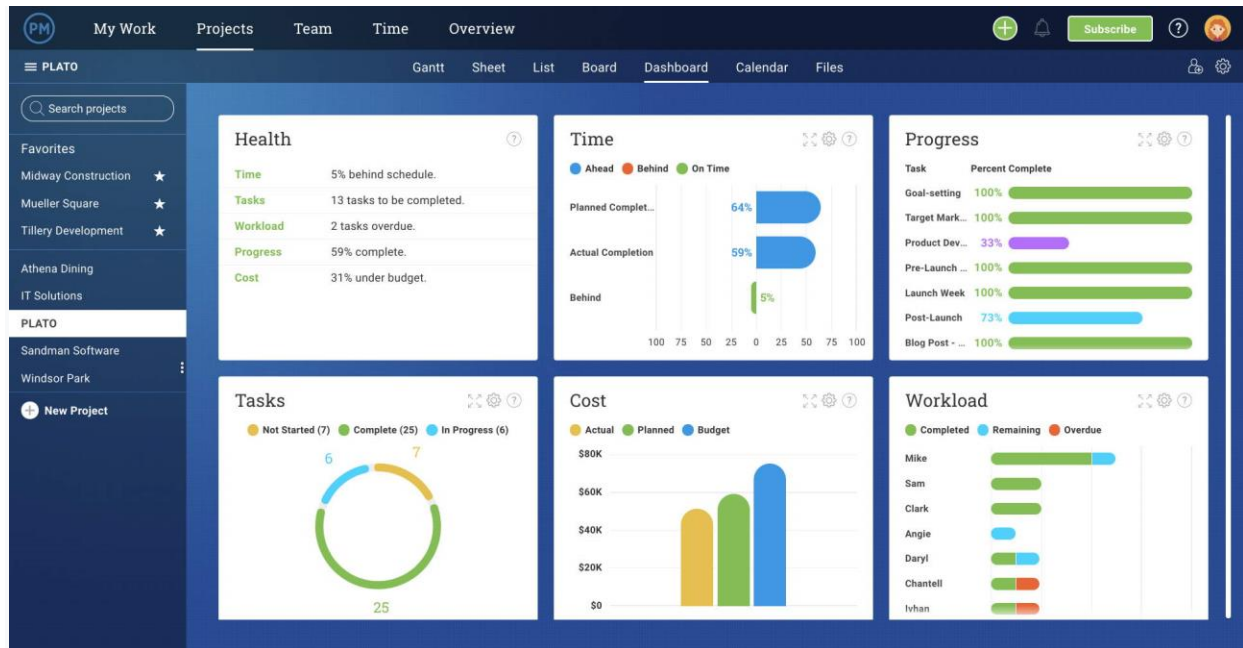
Other environmental problems include acid rain and air pollution, in addition to urban sprawl damage, waste disposal, ozone layer depletion, water pollution, and many others that affect humans and animals. Over the past few decades, planet exploitation and environmental degradation have increased at an alarming rate. And so we have seen more natural disasters in the form of flash floods, tsunamis and hurricanes.

The Risk Management Process in Project Management

It sounds negative, but pragmatic project managers know this type of thinking is preventative. Issues will inevitably come up, and you need a mitigation strategy in place to know how to manage risks on your project.

But how do you work towards resolving the unknown? It's sounds like a philosophical paradox, but don't worry—there are practical steps you can take. In this article, we'll

discuss strategies that let you get a glimpse at potential risks, so you can identify and track risks on your project.



Influence Diagram

An influence diagram is used to represent the summary of information of a decision tree. It shows variables that are known and unknown when making a decision and the relationships that exist among them.

Rectangles indicate decisions, ovals represent uncertainties and values or the required outputs are indicated by diamonds. The influence each variable have on the other is represented by arrows.

How to use it

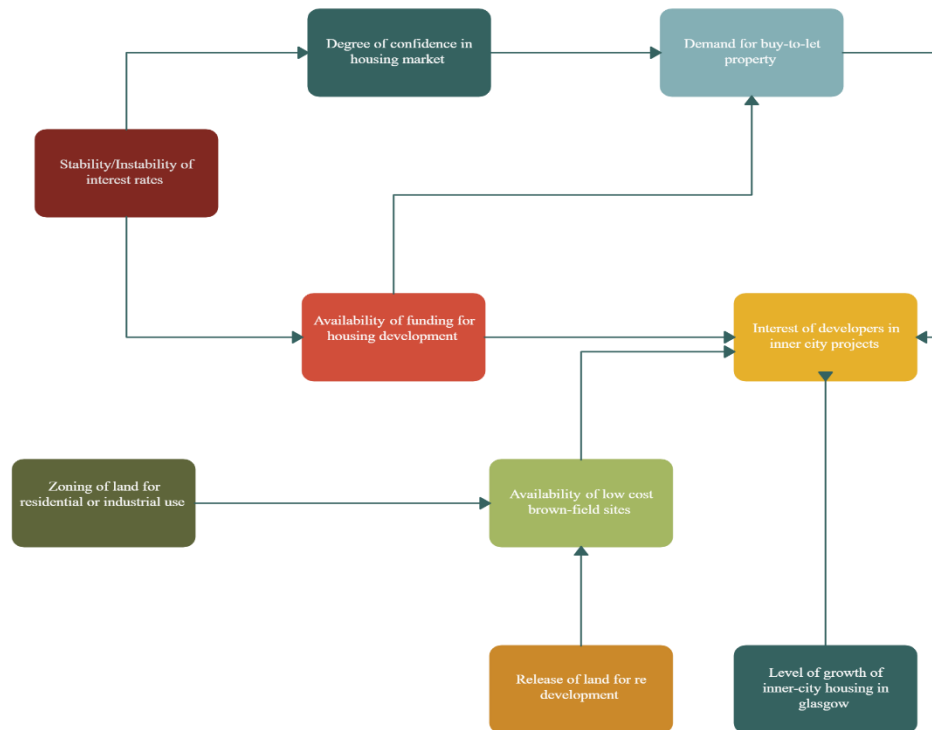
Step 1: Identify the decisions to be made to reach your objective

Step 2: Consider the risks and performance factors that may have an influence on achieving your objective.

Step 3: Recognize secondary factors that affect uncertainty associated with the performance factors.

Step 4: Identify second-order risk factors that can influence secondary factors.

Step 5: Continue to figure out what factors influence uncertainty until all key risks are identified.



The matrix assumes that risk is driven by two aspects:

1. Probability

Probability refers to the likelihood of a risk transpiring.

2. Impact

The impact of risk refers to what happens when it is realized (when it turns from a risk into an issue). The size of the impact can vary on several facets (including elements like Cost and Time for example).

The tool utilizes a range for each usually either in numerical terms (e.g. 0-10), or in percentage terms.

While there is a standard structure to the Impact matrix, if you take a look around google for some examples, you'll see the finished result can vary depending on the business or industry you find yourself in. Different industries/businesses may group low, moderate and high differently to you.

This is by and large due to the weighting of the risk. Often this is driven by varying assessment criteria or prioritization methods. However, these are all variations on a theme; the core of the tool remains the same.

The matrix typically has several sections defined by the scores of probability and Impact they are:

- Low – typically a combination of low impact with low to medium probability
- Medium – generally moderate impact and a moderate probability
- High – usually high impact and high probability.

Note these segmentations are subjective and are usually set by the business executing the risk assessment.

When the Impact and Probability are analyzed, the result is one of several scenarios, which may result in different actions:

1/ Low impact / Low probability

These risks are characterized by low levels of risk and are often disregarded.

2/ Low impact/ High Probability

These risks are likely to turn into issues but have a low enough impact that they can be managed. Note: Managing them may prove challenging, depending on the quantity of them.

3/ High impact / Low Probability

These risks have a high impact but are unlikely to turn into Issues. These can be managed by proactively taking actions to reduce either probability or impact.

4/ High Impact / High probability

These are risks that have a significant impact on your project if they are realized and have a high likelihood of occurring. These are the ones that your resources should be focused on managing.

Likelihood	Rating	Description	Action
1-25	Rare	Not expected	Ignore
26-50	Unlikely	Unlikely to occur	Record and monitor
51-75	Possible	Might occur	Develop Mitigation plans
76-100	Highly probable	Highly likely to occur	Prioritise, Develop Mitigation plans and execute

Example scoring guide for Likelihood

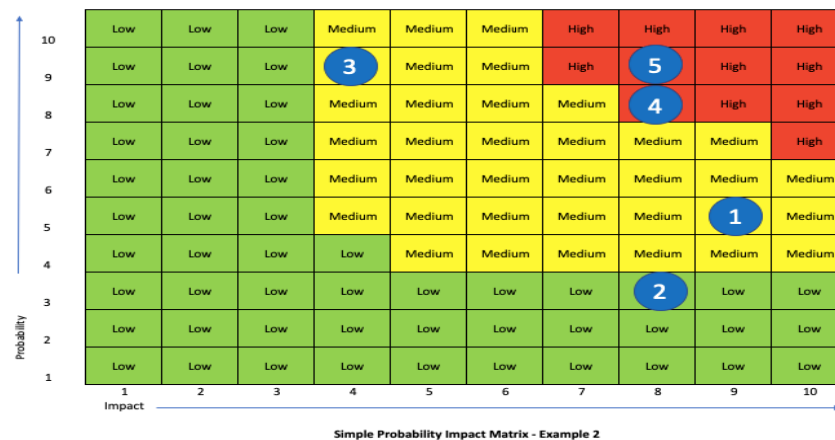
Example Probability Impact matrix

Let's take a look at an example of using the matrix.

We've identified five risks for our project and have scored their impact and probability as shown on the table below.

No	Risk	Impact	Probability
1	Insufficient resources to deliver project on time	9	5
2	Project Schedule is not clearly defined	8	3
3	Large quantity of unplanned work arises, impact completion date	4	9
4	Recruitment delays	8	8
5	Scope Creep	8	9

We've now placed them on the Probability Impact Matrix which you can see below.



You can see that Risks 4 & 5 are our priority, and we need to ensure we focus efforts on developing appropriate mitigation plans for these.

As you can see, the matrix is simple to use and offers a structured methodology for making assessments of risk.

Positives and Negatives of using the Probability Impact Matrix

Benefits

There's several positive attributes about integrating the matrix into your process:

- It's simple to use and easily repeatable
- It provides a qualitative and quantitative assessment of risk
- It allows you to categorize your risks easily
- It will enable you to visualize your risks (which is excellent when you want to communicate them out to a wider audience).

Some things to watch out for

As with all tools, the impact matrix is not a panacea, and there are a few things to watch out for:

- It is only an assessment tool, and you still need to contingency plan
- It does not replace your risk process, and you still need to capture and manage your risks accurately.
- Different individuals may score risks differently (look to utilize some form of rating system/score guide, so all risks are graded equally)

EVM calculation:

Risk	Risk Probability (P)	Cost Impact (IC)	Risk Contingency (P*IC)
1	9	5	45
2	8	3	24
3	4	9	36
4	8	8	64
5	8	9	72