RISK MANAGEMENT
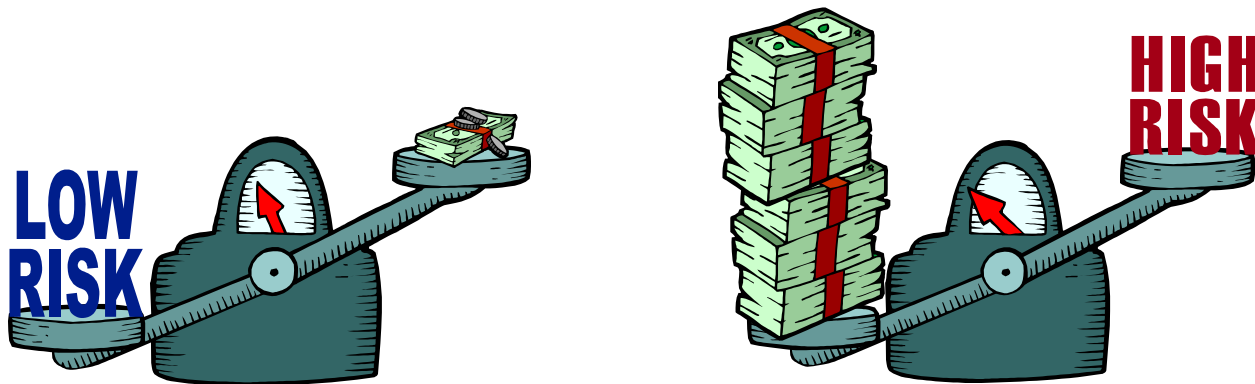
"DON'T PUT ALL EGGS IN ONE BASKET."

WHAT IS A RISK?

Possible negative deviation the objectives of the project.

**There is always some risk probability and it has always some persisting influence.**

PROJECT RISKS

-Must be recognized.

-Must be analysed.

-Must be ranked (importance).

-Must be controlled/prevented/deleted.

-There must be responsible persons.

RISKS IN PROJECT ORGANIZATION (EXAMPLES)

- Too many projects going on at one time
- Impossible schedule commitments
- No functional input into the planning phase
- No one person responsible for the total project
- Poor control of design changes
- Problems with team members
- Poor control of customer changes
- Poor understanding of the project manager's job
- Wrong person assigned as project manager
- No integrated planning and control
- Organization's resources are overcommitted
- Unrealistic planning and scheduling
- No project cost accounting ability
- Conflicting project priorities
- Poorly organized project office

http://www.bia.ca/articles/rm-risk-management.htm
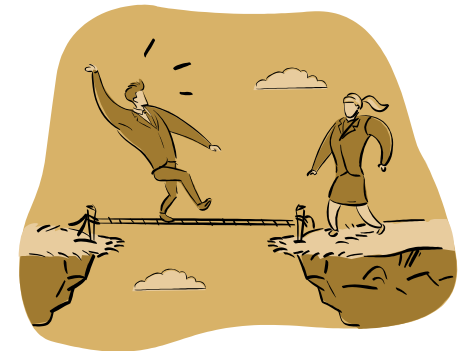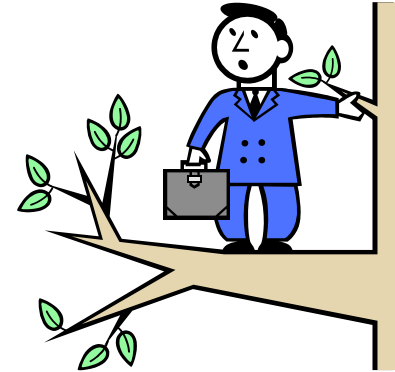
EXTERNAL RISKS

Unpredictable

- Unforeseen regulatory requirements
- Natural disasters
- Vandalism, sabotage or unpredicted side effects

Predictable

- Market or operational risk
- Social
- Environmental
- Inflation
- Currency rate fluctuations
- Media

Technical

- Technology changes
- Risks stemming from design process

Legal

- Violating trade marks and licenses
- Sued for breach of contract
- Labour or workplace problem
- Litigation due to tort law
- Legislation

http://www.bia.ca/articles/rm-risk-management.htm

RISK ASSESSMENT HAS THREE ELEMENTS:

Identify Uncertainties

- Explore the entire project plans and look for areas of uncertainty.

Analyse Risks

- Specify how those areas of uncertainty can impact the performance of the project, either in duration, cost or meeting the users' requirements.

Prioritise Risks

- Establish which of those Risks should be eliminated completely, because of potential extreme impact, which should have regular management attention, and which are sufficiently minor to avoid detailed management attention.

http://www.netcomuk.co.uk/~rtusler/project/principl.html

THE ELEMENTS OF RISK ASSESSMENT

Identify Uncertainties (and Constraints)

- Explore the entire project plans and look for areas of uncertainty or constraints. It is not possible to stress too often that "The project will be late." is not a risk, it is an impact. We need to crawl over the plans to search for things which could make the project late. The risk could be expressed as "We have underestimated the likely duration of task xxx."

http://www.netcomuk.co.uk/~rtusler/project/principl.html

THE ELEMENTS OF RISK ASSESSMENT SOME EXAMPLES OF AREAS OF UNCERTAINTY

- Failure to understand who the project is for

- Failure to appoint an executive user responsible for sponsoring the project

- Failure to appoint a fully qualified and supported project manager

- Failure to define the objectives of the project

- Failure to secure commitments from people who are needed to assist with the project

- Failure to estimate costs accurately

- Failure to specify very precisely the end users' requirements

- Failure to provide a good working environment for the project

- Failure to tie in all the people involved in the project with contracts or Documents of Understanding

http://www.netcomuk.co.uk/~rtusler/project/elements.html

THE ELEMENTS OF RISK ASSESSMENT ANALYSE RISKS P X I

- **Risks are listed**

- **Every risk are evaluated by probability (P) and impact (I)**

- **The scale is usually 1 – 5.**

- **List is organized by P x I value**

- **The plan for mitigating the most dangerous risks**

- **Responsible person for each risk**

- **Deadline for the date when things told in the mitigate plan are done**

THE ELEMENTS OF RISK ASSESSMENT ANALYSE RISKS P X I

Code	Risk	Prob.	Imp.	P*I	Action	Output	Responsible	Ready date
P1	The schedule is too tight	6	5	30	The schedule and project progress is followed up weekly by project manager and in every second week by the project steering group	Project's status in progress reports. Decided actions made by steering group e.g. for giving extra time, if needed.	Hanna	before end of project
T2	It is hard to integrate the product to customer's environment or the integration fails	4	5	20	The integration to the customer's environment is tested a couple of times before the final product version.	Integration results that can be used when planning the last integration.	Mari	before end of project
P10	The product support will be inadequate	4	5	20	The support will be planned during the project as a separate track.	Support plan, Support agreement	Antti	before end of project
P4	The project members will be needed for previous version's support	4	4	16	All needs for support are separately decided by the project manager and customer's representative.	Common understanding of the priorization between this project's and previous version's tasks.	Antti	before end of project
P14	The software development tools are new for the most of the developers	3	4	12	The knowledge will be get by using existing information inside SSw, asking specialists from IBM and reading manuals.	Better knowledge of the used tool, ability to successfully go through the project.	Hanna	before MS2
P17	The product functionality and performance is difficult to verify because of the character of the product	4	3	12	The module tests are made and the functionality is tested in the integration testing environment, too.	Test results	Harri	before end of project

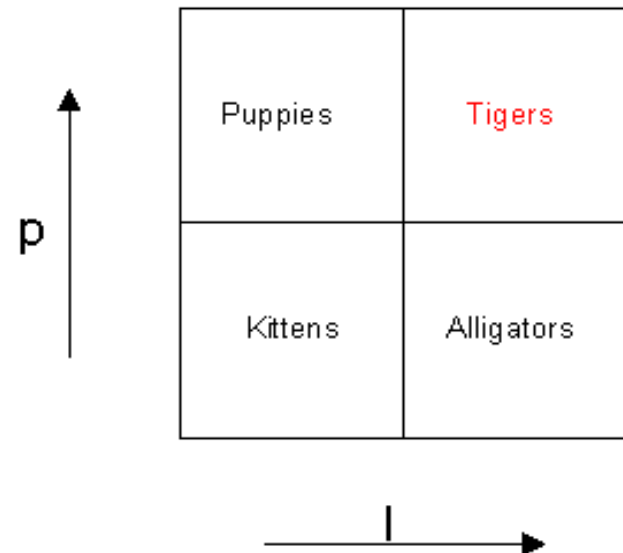# THE ELEMENTS OF RISK ASSESSMENT ANALYSE RISKS

PUPPIES, KITTENS, TIGERS AND ALLIGATORS

The chart plots **Probability** of occurrence of a risk, which is another way of saying how uncertain the success of the task would be, against the Impact.

By **Impact** we mean the severity of the effect on either the budget, the timeliness of project completion, or the ability of the project to meet the users' requirements.

Whether the severity of Impact or the Probability is high or low is a matter for the judgment of the Risk Assessor and the Project Manager - even with rational method involved we are still talking of an art!

Classifying Risks

Puppies	Tigers
Kittens	Alligators

p → (vertical axis)
I → (horizontal axis)

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THE ELEMENTS OF RISK ASSESSMENT ANALYSE RISKS
PUPPIES, KITTENS, TIGERS AND ALLIGATORS 2

Tigers: High Probability, High Impact. These are dangerous animals and must be neutralized as soon as **possible.**
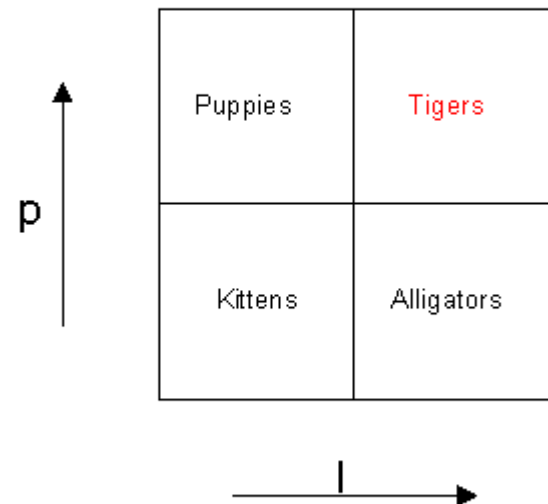
Alligators: Low Probability, High Impact. These are dangerous animals which can be avoided with care. However, we all remember the old joke that it is difficult to remember when one is up to the arse in alligators that the original objective was to drain the swamp.

Puppies: High Probability, Low Impact. We all know that delightful pup will grow into an animal which can do damage, but a little training will ensure that not too much trouble ensures.

Kittens: Low Probability, Low Impact. The largest cat is rarely the source of trouble, but on the other hand a lot of effort can be wasted on training it!

List each of your identified Risks, decide on the probability occurrence of each, and define the expected impact on schedule, budget, and ability to meet the users' requirements.

Classifying Risks

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http://www.netcomuk.co.uk/~rtusler/project/elements.html

RISK CONTROL HAS THREE ELEMENTS, AS FOLLOWS:

Mitigate Risks

- Take whatever actions are possible in advance to reduce the effect of Risk. It is better to spend money on mitigation than to include contingency in the plan.

Plan for Emergencies

- For all those Risks which are deemed to be significant, have an emergency plan in place before it happens.

Measure and Control

- Track the effects of the risks identified and manage them to a successful conclusion.

http://www.netcomuk.co.uk/~rtusler/project/principl.html

THE ELEMENTS OF RISK CONTROL 1

Mitigate Risks

- You would do this for all those risks categorized as Tigers.

- We can mitigate risks by reducing either the probability or the impact. Remember that we identified the risk by seeking uncertainty in the project.

- The probability can be reduced by action up front to ensure that a particular risk is reduced.

- An example is to employ a team to run some testing on a particular data base or data structure to ensure that it will work when the remainder of the project is put together around it.

- The technique of building a pilot phase of the project is an example of risk mitigation. Unfortunately it often fails, because the team works closely with the pilot user group, and then thinks that all the problems are solved for the roll out. This is rarely the case.

http://www.netcomuk.co.uk/~rtusler/project/elements.html

THE ELEMENTS OF RISK CONTROL 2

Plan for Emergencies

- By performing the risk assessment, we know the most likely areas of the project which will go wrong. So the project risk plan should include, against each identified risk, an emergency plan to recover from the risk.

- As a minimum, this plan will name the person accountable for recovery from the risk, the nature of the risk and the action to be taken to resolve it, and the method by which the risk can be spotted.

- A risk which has been mitigated may still be a significant and dangerous risk - it is rare for a tiger to be converted to a kitten by action before the event. These will require emergency plans as well as alligators and puppies. Kittens can probably be allowed to play at will, provided we are satisfied they really are kittens!

http://www.netcomuk.co.uk/~rtusler/project/elements.html

THE ELEMENTS OF RISK CONTROL 3

Measure and Control

- The owner of each risk should be responsible to the project manager to monitor his risk, and to take appropriate action to prevent it from going on, or to take recovery action if the problem does occur.

- Nothing can be controlled which cannot be measured. In a project there are three things which can always be measured - the schedule, the cost, and the users satisfaction!

http://www.netcomuk.co.uk/~rtusler/project/elements.html

SWOT

SWOT analysis can be simple or complex. When we use this tool we are analyzing internal factors (Strengths and Weaknesses), and external factors (Opportunities and Threats). Let's define them:

Strengths: List the advantages you and your team have that will help you reach project goals. It's important to know our special skills that give it an advantage.

Weaknesses: List anything internal to your organization or team that could prevent you from meeting objectives. Something that gives you a disadvantage relative to others.

Opportunities: An external situation or fact that could lead to a positive outcome in meeting objectives. Anything that could lead to a positive outcome

Threats: external elements that could jeopardize your project.

Those are the questions you must ask yourself:

How can we Use strength?

How can we Stop each weakness?

How can we Exploit each opportunity?

how can we Defend against each threat?

Strengths	Threats
Weakness	Opportunities