



Risk management in public procurement of innovation

*“Don’t focus so much on taking risks,
per se, but on taking the risks OUT
of big and bold ideas .”*



Direktoratet for
forvaltning og IKT

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*“Playing it safe
is the riskiest choice
we can ever make.”*



Introduction

This guide will help your organisation to handle and manage risk in public procurement of innovation.

The guide addresses issues that are relevant to risk management in a public procurement of innovation. For further information and descriptions on public procurement of innovation, we recommend that you visit Difi's website at www.anskaffelser.no. The website also contains examples of completed public procurement of innovation.

The initiative to create this guide came from Difi's resource group for public procurement of innovation. The group consists of state and municipal entities. These bodies have tested public procurement of innovation in cooperation with the National programme for supplier development. The National programme for supplier development, Innovation Norway and the Research Council of Norway were important partners in the resource group. The resource group has convened several meetings in which they have shared experiences with implementing public procurement of innovation. The result is a risk management guide that is specially designed for this purpose. Procurement of something that is not yet fully completed is naturally enough more complex and associated with greater uncertainty than procurement of off-the-shelf goods and services. The resource group therefore found that they needed a tool for managing the increased risk in a good way.

Difi would like to take this opportunity to thank NAV, the Municipality of Stavanger, the Municipality of Oslo, Avinor, Hinas, the National programme for supplier development, the Municipality of Ålesund, Sykehuspartner (sourcing non-medical services to hospitals), the Norwegian Defence Estates Agency, the Research Council of Norway and Innovation Norway for their valuable contributions to this work.

DEFINITION OF RISK:

Conditions or events that may occur and negatively affect the attainment of objectives.

Risk is assessed in relation to the likelihood of it occurring, and the expected consequences it will entail for attaining objectives if it occurs.

Innovation and procurement

There is a lot to gain from implementing innovation through procurement, whether the focus is on saving costs, benefiting the environment, or obtaining better solutions.

Innovation can be achieved by existing knowledge in new contexts, to yield cost-effective and improved solutions. Innovation can also involve the latest technology on the market to deliver better and safer services. In addition, innovation can require thinking out of the box about a problem and choosing new and better solutions.

When you undertake public procurement of innovation, you can be part of solving societal challenges, promoting development of environmental technology and providing better products and services to end-users.

Risk management in public procurement of innovation

Some public agencies have risk management tools that they use for management and internal control in their operating activities in general. For those that do not have such a tool in place, or would like a separate tool for procurement, we have created this guide. In organisations that have integrated risk management into their overall objective and result management system, risk management for public procurement of innovation should be viewed in connection with this.

Risk management method

Risk management should help to create a good balance between the risks and benefits associated with a public procurement of innovation. Risk management in this context must therefore be understood as managing risks in relation to benefits, where risk should not merely be assessed in relation to the likelihood of it occurring and the consequences of its occurrence, but also in relation to the benefits of the procurement for the various parties involved.

Risk management means that you are ahead of the challenges and can take pro-active steps to address them.

Responsibility and roles in risk management

Responsibility for ensuring that risk management tools are used lies with senior management. It may be sensible to delegate the responsibility to the project manager of the individual procurement project. The project manager has the responsibility for implementing risk management and risk reporting. This responsibility also includes involving other people when it is appropriate to do so.

When to implement and follow up risk assessments

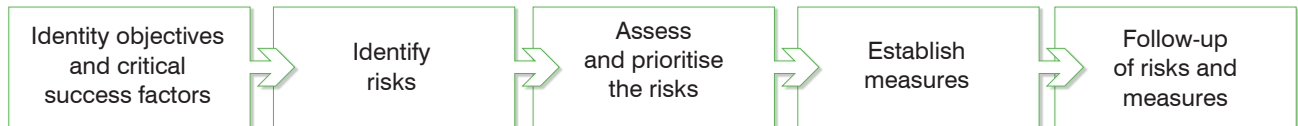
An initial risk assessment should be undertaken early in the planning phase. It can be done as a one-off exercise, or it can be done in several rounds during the procurement process depending on the size and complexity of the procurement. As a rule, it will be necessary to review the risk assessment periodically. This is to check whether the conditions have changed, and whether the measures that have been implemented to counteract risk are working or not. It will often be necessary to conduct a new risk assessment when entering into a contract, it provides the opportunity to uncover risks in the contract period.

DEFINITION OF RISK MANAGEMENT IN RELATION TO PROCUREMENT:

Process integrated into the implementation of procurement that:

- Is designed to be able to identify, assess, handle and follow up risks with identified measures so that risks are kept within acceptable levels
- Is carried out by the employees involved in a procurement

Phases of the risk management method



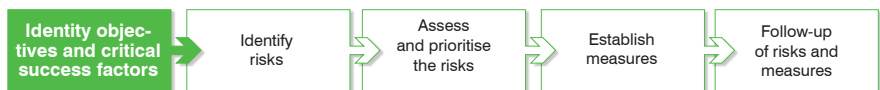
TIPS!

In order to map the needs of the procurement as well as possible, it is a good idea to set up an internal working group or procurement team. This group should have a broad composition with people from the expert communities, procurement community and, if applicable, internal research and development environments.

You might like to involve people from external communities, such as users, users' interest organisations, supplier organisations, external research environments, experts in innovation processes, planning authorities or similar. Evaluate whether it is a good idea to explore the market before identifying the objective. A stakeholder analysis helps you to find out who should be included in such a working group.

TOOLS TO ASSIST YOU:

Stakeholder analysis, see the Tools, templates and examples chapter



Identity objectives and critical success factors

In order to assess the risks associated with the procurement, you have to define the objective of the procurement. What types of needs should the procurement fulfil? Without a clearly defined starting point against which the risks should be assessed, it is not possible to comment on the consequences that a risk may lead to.

The needs assessment in a public procurement of innovation is an important phase, and often requires several communities and experts to be involved. Put the user in the centre and ensure that the needs are well anchored in the organisation.

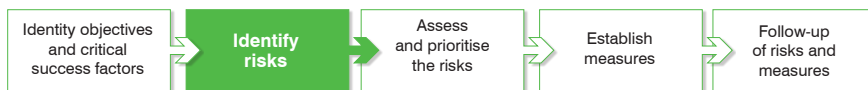
The objectives that are defined must be as specific and clear as possible. Describe the objective as a desired result or outcome, not as a tool or an activity description. Afterwards, it must be possible to check whether the objective has actually been attained or not.

Critical success factors

Critical success factors (CSF) are factors that are essential to attaining the objectives. When you define critical success factors, it is a useful step on the way to identifying risks. Focus on the factors that are most important to succeeding in attaining the objectives - do not go into too much detail.

If you invert the critical success factors you will bring out the risks.

It is important to have the right people involved. Who is it that can give us information on critical success factors? Sometimes it will be users outside your own organisation who can give us answers about what is critical.



Identify risks

When you identify risks you are mapping what events (risks) may threaten attainment of the objectives for the procurement.

Use the critical success factors as a starting point. Reformulate CSF into risks.

It is important to think about the whole period of use, and to include an operating perspective on the goods and services being purchased. For example in building projects it will be relevant to use the standardised lifetimes of buildings as a basis.

Describe the risks as specifically and clearly as possible. This will provide a good basis for both the risk assessment and the preparation of measures.

Write a list of the risks that have been identified. It is a good idea for the list to contain a detailed description of each risk. Under what conditions is this a risk? See the paragraph below on Cause analysis. Then limit the number of risks to the most important.

Examples of types of risks that are relevant to public procurement of innovation:

Organisational risk

POLITICAL PRIORITIES

Changes in political priorities may constitute a risk.

REORGANISATION

The process is often driven forward by committed enthusiasts, and if these people leave, it may have a large effect on the project.

INTERNAL EXPERTISE

The organisation often does not have the necessary specialised expertise, procurement expertise or innovation expertise internally.

TIPS!

Use the internal working group to identify CSF.

Involve the key informants

Assess a suitable method for getting suggestions

1. Interviews
2. Written suggestions
3. Brainstorming/workshop

SOME TIPS WITH REGARD TO FORMULATING RISKS:

It must be clear what the risk is, i.e. the event, not the consequences.

Make the formulation as specific as possible, but ensure that the number of risks is manageable.

Formulate the risks so that they are mutually exclusive as much as possible, i.e. not so that several risks deal with the same issue (some overlap may occur).

If several risks clearly deal with the same condition, consider merging.

Checklist for implementing risk assessments (risk workshop) is shown in the chapter on Tools, templates and examples.

TIME

The first time that a public procurement of innovation is undertaken it often takes longer than estimated. But even on the second time it is carried out, it happens more quickly.

FUNDS

It can be demanding to set aside funds to a development process that will last several years, especially since public budgets are only set for one year at a time.

Technological risk

LACK OF TECHNOLOGY

Public procurement of innovation more often utilises newer technology. Can the suppliers deliver the technology that the solution depends on? Are they capable of developing what you need?

TECHNOLOGICAL CHALLENGES

With new ICT projects there will be risks associated with whether the solutions are compatible or can be adapted to existing ICT systems. Market readiness for this type of technology may also be uncertain. Can it be installed and utilised within existing frameworks or must something be changed?

Market risk

MARKET COMPETITION

Is there adequate market competition? It may be especially risky to end up in a lock-in situation where you are reliant on a supplier that has developed a unique solution for a long time to come.

PRICE

Price will be one of the greatest elements of uncertainty when you are undertaking a public procurement of innovation.

Other risks

THE TENDERING PROCESS

If this has to be interrupted due to errors or omissions it can significantly delay the process.

USER PERSPECTIVE

The risk associated with whether the users can utilise the new solutions, and whether the gains turn out to be as expected.

If the project is unsuccessful, assess unanticipated events and reputation risk.

Cause analysis

Discuss what is the reason that a condition or an incident constitutes a risk. Such a discussion provides a more unified understanding of the risk, and may lead to the formulation of the risk being more precise. Cause analysis gives important information about what measures ought to be implemented.

Evaluating risk during the process

Changes may occur during a procurement project. There may then be a need to perform a new assessment of the risk picture. The purpose of the assessment is to check whether new elements of risk have arisen during the process. Create routines for regularly updating the risk analysis.

Different ways to map risks

- Interviews with people who have insight into the relevant area of expertise. The suggestions provide a list of risks which form the basis for the risk assessment.
- Working meetings/workshop where those who will participate in the risk assessment jointly identify and formulate the risks. This is a good way of ensuring decent discussion and common understanding of the risks.
- Written suggestions can be made when everyone meets or via e-mail. The person who will lead the risk assessment compiles the risks based on the suggestions prior to the risk assessment itself.

What mapping method is used will depend on how much time you have available, and the scope and complexity of the procurement. It is also fine to combine the different methods. It is recommended that those who will assess the risks are also involved in the mapping. The project manager decides who will participate in the risk mapping, and who will be the facilitator.

For documenting the risk management method you could use, for example, a spread sheet based risk management tool. A simpler documenting method is to write the information into an Excel or Word document and save it.

TIPS!

The Municipality of Oslo has prepared a suitable risk management tool. It is available from the website www.anskaffelser.no



Assess and prioritise the risks

When all the risks that may arise have been mapped, the risks should be assessed. What risks are most critical, and what should be further addressed?

Likelihood and consequences

A risk is assessed in relation to the likelihood of it occurring. And if it occurs, what are then the consequences for achieving objectives? One model for assessing and ranking risks can be a scale from 1 to 4 for both the likelihood of the risk occurring and the consequences if it were to occur. We recommend that this assessment is conducted in a working meeting/workshop.

Prior to the risk assessment it is important to decide the criteria for the different rankings.

Example of a model for assessing and ranking risks:

Likelihood of the uncertainty condition occurring on a rising scale from 1 - 4:

1. The uncertainty condition will probably not occur - occurs in only one of ten cases.
2. Less chance of it occurring than not occurring
3. 50/50 chance of it occurring
4. Greater chance of it occurring than not occurring

Define the meaning of these points with the participants, so that you have a common reference.

Examples of criteria for consequences if the uncertainty condition occurs may be:

1. Minor consequences that can easily be rectified
2. In isolation, it will not lead to a deviation on the criterion mentioned above, but in conjunction with an undesirable outcome on 1-3 other risk conditions could lead to a deviation
3. Will lead to deviation on at least one important criterion for attaining the objective (the criteria must be defined in more detail)
4. The suggested solution cannot be implemented i.e. Showstopper.

Other criteria may be used. See the attachment for further information on this.

Assess and prioritise the risks

Discuss why the condition constitutes a risk, and what the consequences are of each individual risk. During the discussion you should think about what measures, if any, the organisation has already implemented to handle the risk. This is a key premise for the assessment, since the risk will be assessed based on the current situation, given the present measures. To ensure an understanding of the risk that is as unified as possible, the participants must discuss the mapped risks one by one.

Each risk factor is assessed separately with these questions:

- *How likely is it that the risk will occur?*
- *Given that the risk has occurred, what then are the consequences for attaining objectives?*

Since the assessments of likelihood and consequences are largely subjective, there may be different opinions about how high the individual risk is.

Reasons why you assess risk differently:

- Different interpretations of the objectives
- Different understanding of the risk
- A lack of expertise on the risk that is being assessed
- Different opinions on the method, e.g. the criteria for likelihood and consequences

For a), b) and d) it is important to discuss the condition in order to reach a mutually agreed understanding. For c), those who have sufficient knowledge about the risk should participate in the assessment.

Risk levels

The risk level is determined by multiplying the likelihood of the event occurring with the associated consequences ($L \times C = \text{Risk level}$). When you have identified the risks, the likelihood of them occurring, and any consequences, can be plotted in a risk matrix or a risk map. The matrix provides a visual representation of the risk factors that have been brought forward and makes it easier to communicate these.



TIPS!

Experience has shown that it is easy for participants to "forget" the criteria for likelihood and consequences (scale values) when they assess risk. The person leading the working meeting ensures that the criteria are actively used so that the group has a common understanding.

Figure 1 Risk matrix

The risk levels in the example above are specified as low, medium and high, as defined by the combination of likelihood and consequences (likelihood x consequences).

After the risk assessment has been carried out the project manager should quality assure the risk picture that emerges. This entails an assessment of whether certain risks have ended up too high/low and ought to be adjusted downwards/upwards. A normal experience in the beginning phase is for the risks in the working meeting to be assessed as too critical. This must be caught by the project manager during quality assurance.

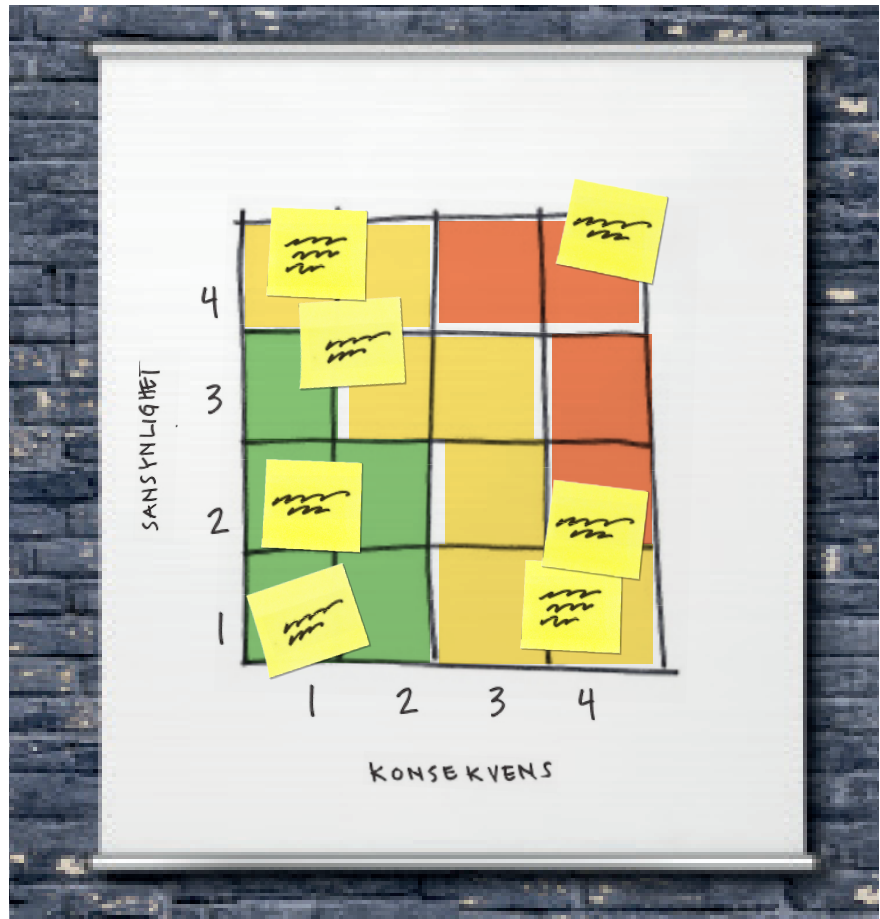


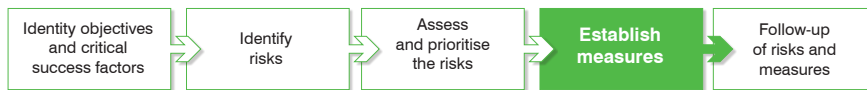
Figure 2 Risk map on a flip chart/board - yellow Post-it notes

Responsibility and participants

The project manager participates in the working meeting to assess and prioritise the risks, and assess the need to also involve others. It is important that those who participate in the risk assessments have the expertise in the area that is being risk assessed, and contribute to good and correct assessments being made.

Documentation

Remember to document the process in an appropriate way through recording minutes of meetings.



Measures

An important risk-reducing measure is to follow the "Innovation step-by-step" method when you are undertaking a public procurement of innovation. With a good needs assessment, you achieve better planning and organisation. Dialogue with the market gives better and more correct conditions for a successful procurement. For more information on the method visit the theme pages on innovation at www.anskaffelser.no. Dialogue with the market will especially contribute to increasing expertise for both parties. Dialogue also leads to a more realistic picture of what can actually be done and what is uncertain.

Establish measures

Use the risks that you have identified as the starting point. The position of the risks in the risk matrix determines whether it is necessary to establish measures:

GREEN FIELD

If risks end up in the green field it is often not necessary to do anything about them. It is not likely that they will occur, if they do, the consequences are not so serious for attaining objectives.

YELLOW FIELD

If risks end up in the yellow field, measures may be required. This particularly applies to risks that are assessed to have serious or very serious consequences, but a low probability.

RED FIELD

If the risks end up in the red field, measures must be implemented. High risk may be accepted in some cases, for example when the organisation does not have any possibility of influencing the risk, or the costs of handling the risk are assessed as too high in relation to the benefit.

In general the following ways of handling risk are relevant:

- Reduce by implementing measures that affect likelihood and/or consequences
- Transfer/share the risk between the parties
- Avoid (for example refraining from actions that create risk)
- Accept (take a calculated risk)

Measures will give the greatest risk-reducing effect if you address the most important reasons. In most cases these measures will also have the greatest cost/benefit.

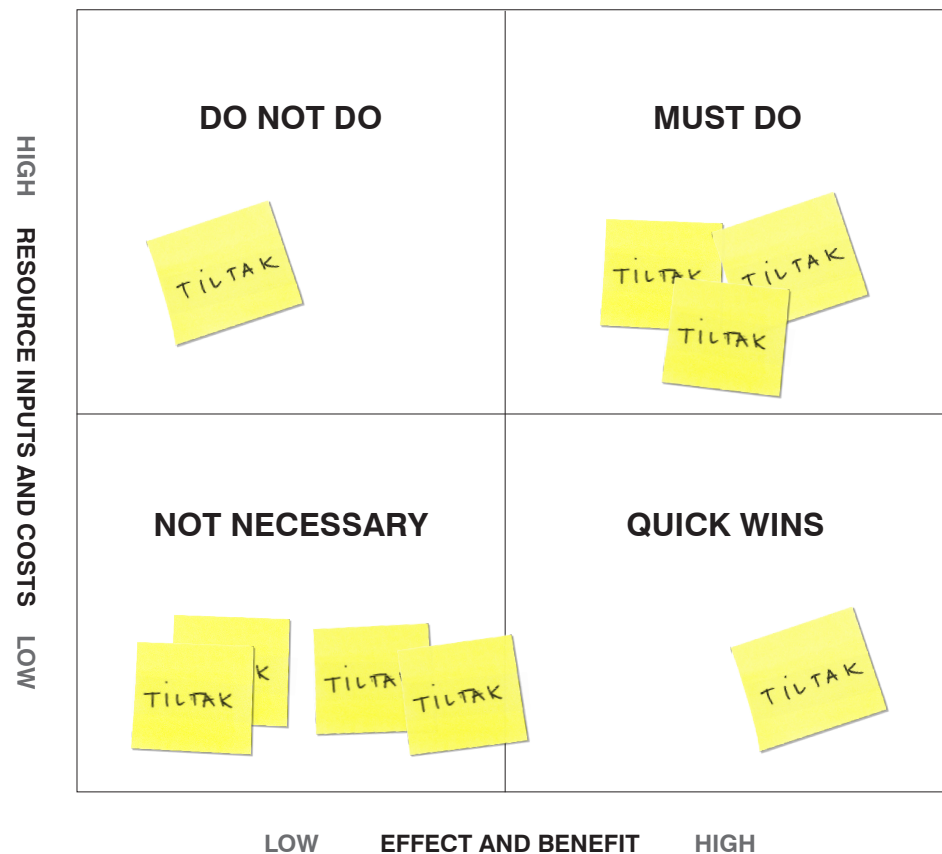


Figure 3 Measures matrix

Methods for prioritisation and selection of measures:

Here the effect is assessed against the resource use and the costs associated with the measure. Describe the measures in sufficient detail specifying how they should be implemented. Be clear about who has responsibility for implementing the measure, as well as the deadline for implementation.

It is the project manager's responsibility to ensure that the risk is adequately handled through the measure, and decide what measure is to be implemented. Remember to document the process.

Examples of measures to reduce organisational risk:

Engage all the participants in the project so that not just a few key people are involved. Have a plan in place for how to handle things if key people in the project were to leave.

Take courses, use the guides from Difi, seek assistance from the National programme for supplier development and/or hire external expertise.

Set aside plenty of time for thorough planning. Take into account that it may be necessary to allocate time for training.

Assess whether you can apply for financing through for example the OFU scheme from Innovation Norway, regional funds from the county authority or other sources of financing for research and development for the public sector.

Measures to reduce technological risk:

Add in time for testing during the development of the implementation plan.

Map what other systems adjoin the new one, carry this out as early as in the planning phase. Involve people who work with the most important of these and draw up a plan for ensuring compatibility. If possible involve the users of the systems in the mapping and to obtain an overview.

Measures to reduce market risk:

To avoid ending up in a lock-in situation the solution may be to act together with other public agencies on the procurement. It is likely that other organisations can have the same needs as yours has, and it will be more attractive for the suppliers to develop new things when they know that there are more customers for the solutions. Act together as public purchasers and create a market!

Measures to reduce other risks

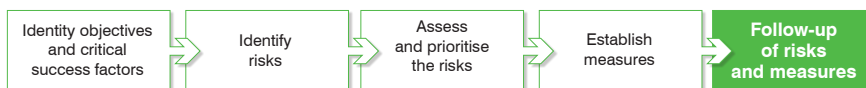
To ensure that the user can utilise the new solutions, include training as part of the delivery from the supplier. Involve users in the clarification of needs phase and in testing during the process.

CARE + NEW SHELTERED HOUSING USING WELFARE TECHNOLOGY:

After a thorough market survey the Department of the elderly and social services wrote a needs-based specification of requirements. Thus, they transferred the risk to the suppliers for the development of suitable welfare technology.

The supplier visited the project and learned more about the needs, and where the solutions were to be used.

The suppliers received all the drawings and information, and bore the risk of the solutions working correctly. In addition, the contract specified that the suppliers should contribute with training and further development, so that the new care technology is used. The municipality had also set aside internal resources for following this up. Employee training was a key element.



Follow-up of risks and measures

The risks must be followed up. Assess whether the implemented measures are working over time through ongoing follow up and evaluations. The scope, and how often measures should be followed up, depend on the progress of the project and the reporting routines in general. It is easier to follow up if you set deadlines for when measures must be implemented.

If the follow-up shows that the risk is as expected, it indicates that the measures are working. If it shows that the risk is higher than expected, it may mean that there is a need for additional measures or surveys. Why are the implemented measures not working? The follow-up may also show that the risk is lower than expected and desired. This may mean that the ambition level is too low, or it can offer an opportunity to move resources from one area to another area where the risk is assessed as being too high.


It is important to place the risk with the party (purchaser or supplier) that is best suited to control the risk. In many cases, this will also be the least costly solution. Can the risk be divided into elements and be shared between the parties based on which party can best carry each risk element?

A needs-based or functions-based specification of requirements places the risk related to the development of satisfactory solutions on the supplier. The procuring entity can facilitate matters such that the supplier gains the greatest possible insight into the needs and conditions under which the solution will be implemented. This contributes to reducing risk. On some occasions it may be relevant to pay the supplier a certain sum of money, for example when development is taking place in a competitive dialogue, or when using planning and design competitions.

Regulating risk in a contract

A contract should contain the following elements:

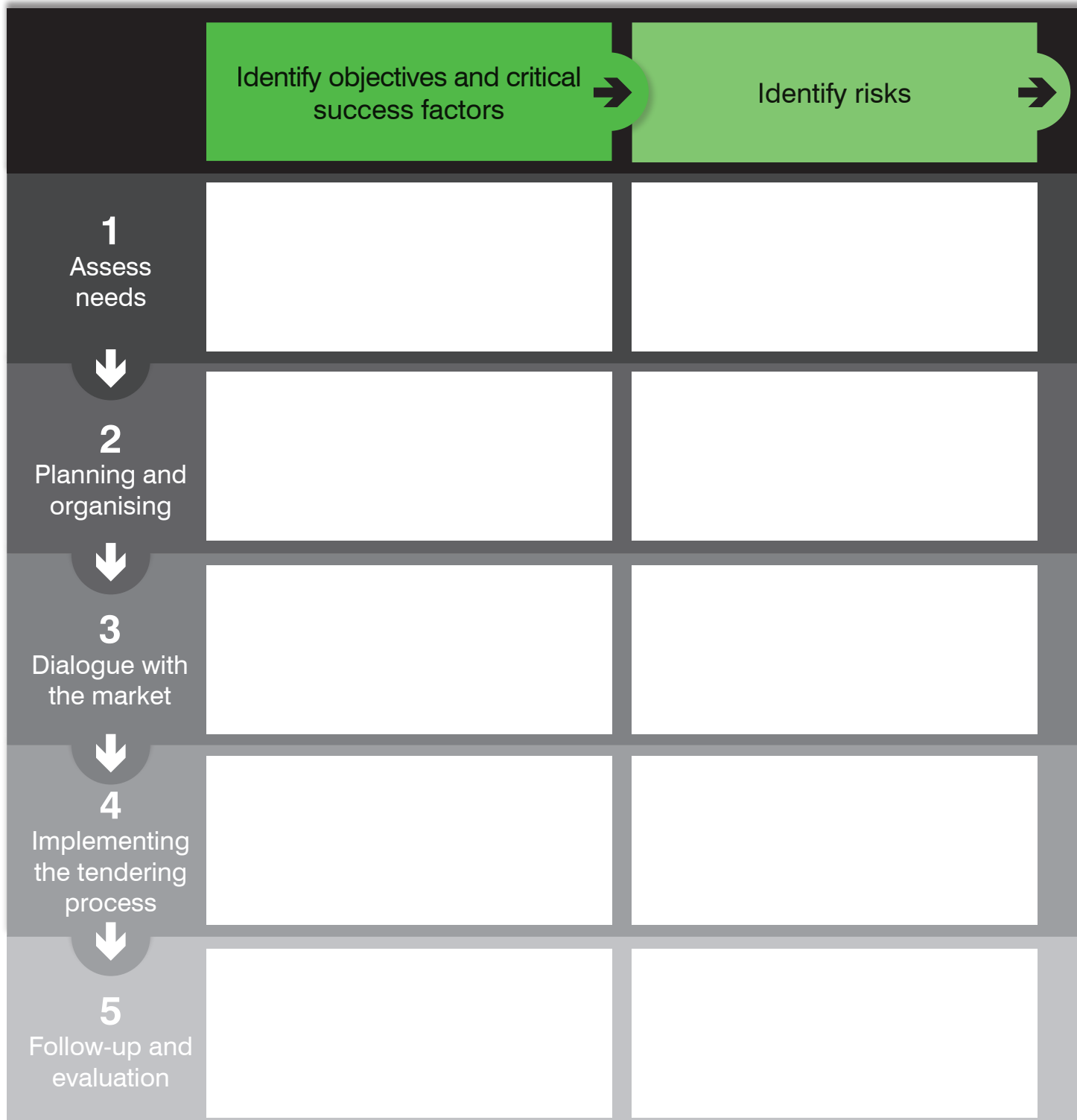
- The supplier's result/obligations
- Assessment from the procuring entity on whether the supplier has achieved the award criteria
- An alternative solution to the suggested one, if the original one is not working
- How contract management is to be handled
- A bonus system (and possibly sanctions) that depends on the results achieved
- Regulations for intellectual property rights and relations to third party rights
- Training in relation to new solutions, which is an obligation for both parties



“It is important that risk be managed as explicitly and as professionally as possible keeping in mind that it can never be eliminated entirely.”

Risk management method used in the procurement process

By using the method for risk management in the various phases of a public procurement of innovation, you have a tool for managing the risks in the different steps of the procurement process.



Assess and prioritise the risks (Grades 1-4)			Establish measures	Follow-up of risks and measures
L Likelihood of risk occurring	C Consequences if risk occurring	L x C Risk	R ≥ X: Description of measures and person responsible / deadline: NEW R	Expected effect of implemented measures NEW R
				Measures implemented. Date and signature ACTUAL NEW R

1 Assess needs

Typical risks in assessing needs:

- The need is not linked to the organisation's long-term strategy.
- The need is not anchored upwards or downwards in the organisation.
- Technology triggers the need, and the desire for new technology creates a "false" need.
- A lack of fresh thinking, innovation or creativity.
- The users' needs are not sufficiently well defined.

Measures to reduce the risk:

- Establish routines where you always check the need against the department's/organisation's long-term plans.
- Establish routines for reconciling needs with management and all affected experts.
- Arrange a workshop for users to uncover real needs.
See the checklist for workshops in the chapter titled Tools, templates and examples.
- Organise a broadly composed internal workshop with people who have different expertise and backgrounds. See the checklist for workshops in the chapter titled Tools, templates and examples.

The aim is to assess whether the need is real and correctly formulated. Is it important and significant to the organisation's attainment of objectives if the need is met? Will meeting this need improve the attainment of objectives? This may be in the form of, for example, more efficient operations, an improvement in the quality of the services, better user experiences or more environmentally friendly operations. A critical success factor may be whether we manage to define the need well enough (function - not solution).

2 Planning and organising

Typical risks in the planning and organising phase:

- Not having the right skills in the team
- Key expertise leaves
- Not enough resources and prioritisation of time
- Change in the organisation
- Arriving at the right solution takes much longer than was budgeted for and planned

Measures to reduce the risk:

- Clarify expectations internally in the team
- Good reward systems
- The team members getting to know each other, arranging kickoff meeting
- Realistic schedule that enables innovation
- Facilitate members' active participation
- Obtain the necessary expertise

The aim is to bring together a good procurement team, as well as draw up a schedule and resource plan. When it comes to public procurement of innovation there is often a need to allocate a longer period of time to the planning phase than otherwise, for implementing market dialogue and other matters. Find out whether the budget allows for commencing development measures linked to the procurement, either in advance or during the contract period.

If you will be undertaking procurement within a completely new field, you must ensure that someone on the procurement team already has or obtains expertise within this field. As applicable, you may address this from external resources.

3 Dialogue with the market

Possible risks in this phase may be:

- Not enough participants for external activities, for example dialogue conference.
- Not coming into contact with the right private sector companies.
- The organisation does not handle the information received from the suppliers well enough (reveals business secrets).
- The organisation does not come across as being professional enough.
- You do not manage to mobilise industry associations and commercial clusters.
- The need is not defined clearly enough.
- A lack of understanding in the market about what a dialogue conference is.
- Too few suppliers.
- The market not understanding the order.

Possible measures to reduce risk:

- Well formulated description of needs with the right level of detail.
- Broadly advertise the dialogue activity.
- Send out invitations to suppliers.
- Request concise information from suppliers. Maximum number of pages in written suggestions.
- Prepare specific questions for the suppliers to answer.
- Prepare a message that is communicated to the market.
- Skills training within dialogue processes.
- Skills training for suppliers through information on the purchaser's web.
- Arrange information meetings to inform and educate the supplier market.

The aim of the dialogue is to obtain insight into what is available on the market, as well as to give the market insight into what your needs are. When purchasing innovation there is an even greater need to obtain an overview. Perhaps there is not currently a solution for our needs, but several suppliers together can develop a coherent solution? Perhaps the solution exists, but it is not yet utilised in this market?

4 Implementing the tendering process

Typical risks in this phase may be:

- The supplier sets the price too high to be on the safe side, or too low in order to win the tendering process.
- Ambiguity in relation to how much non-technology is included in the technology projects.
- Can the suppliers actually deliver what they say they can?
- The specification of requirements is not sufficient, and technical expectations are not well enough defined.
- There is not a real competition in the tendering process.
- The function-based specification is viewed as too general, the market dares not answer.
- Assessment criteria are unclear.
- Difficult to assess tenders on the basis of a function-based specification of requirements.

Possible measures:

- Arrange for the price risk to be shared in the contract.
- Involve a broad range of people internally in assessing the tenders.
Relevant areas of expertise may be subject specific, within IT and HR.
- Have a dialogue with the suppliers prior to the procurement so that the specification of requirements is sufficiently well understood.

Training and mobilisation of the supplier market reduces the risk of suppliers not daring to participate in the tendering process.

The aim is to find the right tendering procedure, write good tender documentation and implement a good tendering process. When the purchase is intended to bring about innovative solutions, it is relevant to use flexible forms of procedure. This gives access to more collaboration with the suppliers. Competitive dialogue is a possibility. It may be relevant to ask about alternative tenders, or announce a plan and design competition to generate more good ideas.

5 Follow-up and evaluation

Typical risk factors may be:

- Wrong delivery.
- Risk of the innovation not being utilised.
- How to measure the degree of success? Test documentation has not been prepared.

Possible measures:

- Ensure that testing and training are included in the contract.
- Inform and motivate own employees about new solutions.
- Prepare success criteria and measurement of cost/benefit from the innovation.
- Implement evaluation to ensure skills development.

In this phase you must follow up the implementation of the procurement, involve the employees, users and others to ensure that the new solution is used in the right way. This will often involve training the employees and users, and reorganisations if applicable. This point is very important with regard to new solutions. Without a good plan for implementation and training, the benefit of the procurement can be very low. It is appropriate to evaluate the process to find out what went well, and what did not go so well. What lessons can be learned for the next time? Try to measure if the procurement led to the gains that you expected to have.

Risk management in a research and development project

A thorough survey of the market will show whether there are solutions that can easily be further developed right away, or whether a research and development project must be initiated. A broad dialogue with the market, including industry organisations and research and development communities is the best starting point from which to find an answer to this.

In cases where you determine that there are no solutions available on the market, or that solutions cannot be developed within a short time, several key questions arise:

Why are there no solutions?

Have we sought the right companies and people?

Do we have the necessary knowledge in relation to the needs and the challenges?

Have we reached those who have the solutions?

What is the time frame within which it is possible to develop a solution?

When something entirely new is to be developed, there will be a certain risk of not succeeding in bringing about a solution at all, due to technology. The R&D market can be complex and without geographical boundaries. Obtaining an overview of ongoing R&D projects and relevant communities can be difficult. Developing something new can also be too time consuming if the need is acute. There will also be substantial risk associated with the final price.

Internally it can be challenging for people to understand that implementing a research and development process is a good investment of both funds and time. In addition, the financial framework may change during the R&D process due to new political priorities or other reasons.

Important measures to limit the risk in R&D projects:

- Good anchoring internally
- A culture for collaboration
- Knowledge on innovation, R&D and the processes
- Right skills
- Use more user-controlled research.

Funds for risk mitigation are available from Innovation Norway and the Research Council of Norway. For example the OFU scheme from Innovation Norway is a potential framework for a development collaboration between public and private sector entities.

Tools, templates and examples

Checklist for risk workshop

Before the meeting you should:

Clarify with the manager:

- Objective, time frame, criteria for likelihood and consequences.
- Number of participants, 5-15 is recommended.
- Time/date.
- Will there be a need for a preparatory workshop where you will perform a preliminary assessment, and reduce the number of risks that will be assessed?
- Decide whether there is a need to divide the process into two parts. One part for mapping and assessing, and a second part for assessing and establishing measures.

Carry out a conversation with selected participants:

- Arrange an interview to map risks.
- Provide information on what will happen in the conversation, how the information will be handled, and what will happen in the workshop.
- In the conversation you will map what constitutes a risk, and what measures have been implemented. Also find out what can happen if the risk were to occur.
- Formulate the risks with additional information in a list that is quality assured by the manager prior to the workshop.

Planning:

- Draw up a schedule.
- Clarify tools.
- Convene a workshop, including supporting information (agenda), reports linked to the meeting and assessments.

In the meeting you will:

Start the meeting by:

- Reviewing the agenda and what you want to achieve with the meeting.
- Present the objective that is to be risk assessed, the time frame for the process and review the criteria.

Discussion:

- Discuss each risk, what can happen if it occurs and what measures have been implemented.
- Assess the likelihood of the risk occurring and any consequences.

Documenting:

- You document the mapping and assessing work in the organisation's risk management tool.
- Write up minutes for the meeting.
- Follow up on whether the work with the measures is implemented.

Methods for identifying risks

Interviews:

A conversation between the person who will lead the meeting in which the risks will be assessed, and people who have insight into the relevant area of expertise. The aim of the interview is to prepare suggestions for a risk list that forms the basis for the risk assessment.

Working meetings/workshop:

Meeting where participants map and formulate the risks together. This is an appropriate way of ensuring good discussion and common understanding of the risks.

The meeting should be prior to the risk assessment itself, so that there is time to assess the risk list. In order to ensure focus and progress, a facilitator should be appointed to lead the meeting.

Written suggestions:

In working meetings and in dialogue with the individual, you can request written suggestions, for example, by mail. The person who will lead the risk assessment compiles the risks in a risk list. This list is discussed prior to the risk assessment to ensure a mutually agreed understanding.

Criteria for likelihood and consequences

Likelihood of risk

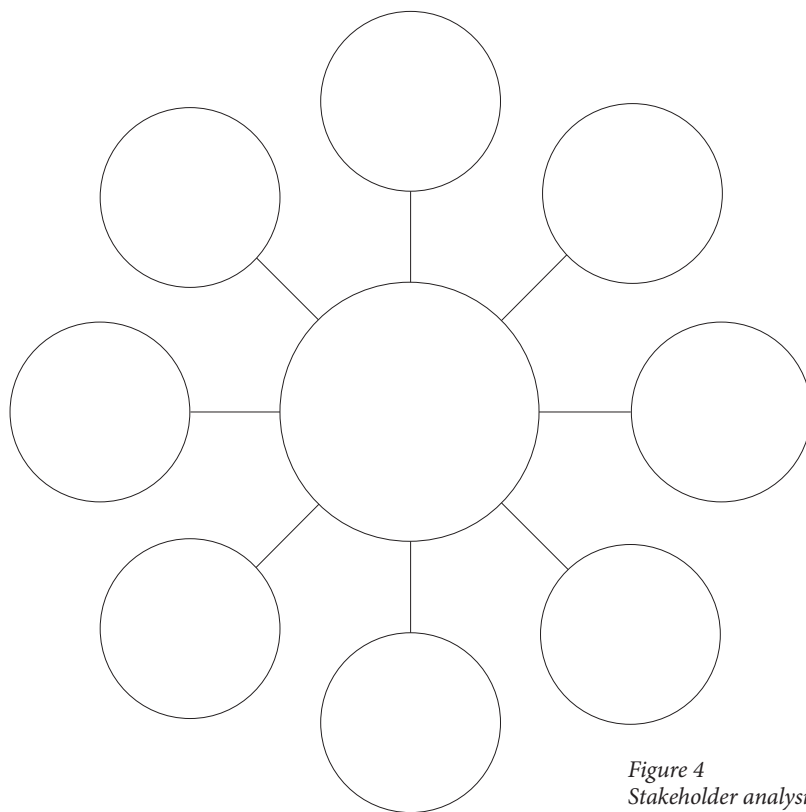
<i>Level</i>	<i>Description</i>	<i>Likelihood criteria – either or</i>
1	Very low	The incident will only occur under very special circumstances (0-5 % chance of occurring)
2	Low	The incident may occur under rare circumstances (5-10 % chance of occurring)
3	Moderate	The incident may occur under some circumstances (10-30 % chance of occurring)
4	Large	The incident may occur under several circumstances (30-70 % chance of occurring)
5	Very large	The incident will occur under most circumstances (70-80 % chance of occurring)

Consequences of risk

<i>Level</i>	<i>Description</i>	<i>Consequence criteria – ranked by most serious consequences</i>
1	Insignificant	Insignificant effect on attaining objective (X)
2	Low	Little effect on attaining objective (X)
3	Moderate	Moderate effect on attaining objective (X)
4	Serious	Serious effect on attaining objective (X)
5	Very serious	Very serious effect on attaining objective (X)

Stakeholder analysis

When identifying objectives it is useful to think through the relevant stakeholders for the procurement. This is done by undertaking a stakeholder analysis. A stakeholder analysis gives you an overview of the internal and external parties. These are parties that are both part of the procurement and on which the procurement depends.



*Figure 4
Stakeholder analysis
in 1-2-3*

Step 1: Identification

- AIM: Identify relevant stakeholders to the result of the procurement.
- IMPLEMENTATION: 1. Draw the figure below on one sheet of the flip chart. Do not fill in the circles.
2. Write the name of the procurement in the middle, and all the relevant stakeholders in the surrounding circles.

Step 2: Prioritisation

Prioritise the most important stakeholders.
Draw a circle around the 3-5 most important stakeholders, those who have an interest in the results of the procurement.

Step 3: Clarification of expectations

Uncover what types of expectations the stakeholders have in relation to the procurement.
What will they be concerned with in relation to the procurement?

Step 4: Involvement

How can the most important stakeholders be involved in the procurement and in the risk assessment?



