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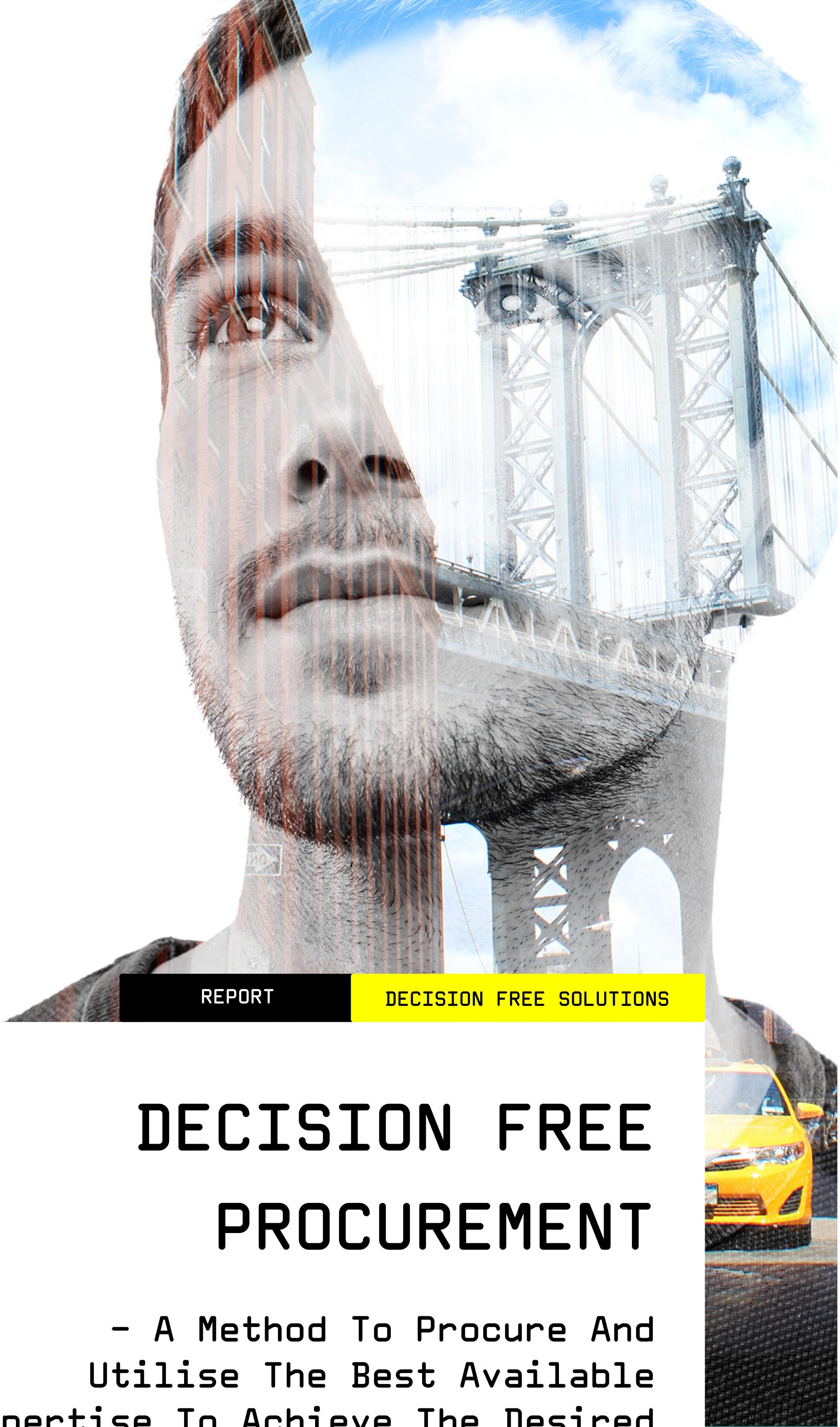

REPORT | DECISION FREE SOLUTIONS

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DECISION FREE PROCUREMENT

- A Method To Procure And Utilise The Best Available Expertise To Achieve The Desired Outcome Against Minimal Risk

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Decision Free Procurement

— *A Method To Procure And Utilise The Best Available Expertise To Achieve The Desired Outcome Against Minimal Risk*

Note to the reader
The method of Decision Free Procurement is the result of applying the approach of Decision Free Solutions to the field of procurement. With"procurement" is meant both the identification of the vendor *and* the delivery of the product/solution with which the desired outcome will be achieved.

This document assumes a familiarity with (or access to) the approach of Decision Free Solutions, including the four steps DICE, the five principles of TONNNO, the concept of the Decision Free Leader (DFL) and the definitions of "risk", "decision" and "expert".

Jorn Verweij | Decision Free Solutions
Hilversum, October 5, 2018

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About DF Procurement

Introduction of DFP

In Decision Free Procurement[1] (DF Procurement or DFP) there is an owner who is in need of help to achieve a desired outcome. This help comes in the form of expertise and will be provided by a vendor. DFP is the resulting method when applying the approach of Decision Free Solutions (DFS) to achieving the desired outcome by way of procuring expertise. Procurement here thus refers to both the identification of a vendor and the delivery of the vendor's solution.

DF Procurement is one of several methods developed by applying DFS to a particular field. DF Procurement is of particular interest, as by definition procurement involves two organisations with different expertise who have to communicate and collaborate in a high-stakes environment (e.g. achieving organisational aims, financial risks, reputation). To create transparency in such an environment is as challenging as it is rewarding. The method of DFP is thus an example of how to communicate in a very complex situation, which at the same time is very common: all organisations need to procure products and solutions and have them delivered against minimal risk.

The definition of DFP — annotated

> DF Procurement is a method to procure and utilise the best available expertise to achieve the desired outcome against minimal risk

This definition communicates the following:

- Despite its name, the method is not "a procurement tool". The method is of no value to anyone when expertise is merely procured but then not utilised. If DFP is run by a procurement department and then "handed over" to the operational people who have to assist, support and or collaborate with the identified vendor failure is all but certain.
- No assumptions are made as to where or with whom expertise resides. The one who looks for expertise to achieve a desired outcome almost invariably also possesses expertise which is essential in achieving this desired outcome. In fact, as will be explained in the next section, an organisation that possesses no expertise will not be able to run DFP successfully.
- The method does not assume "a perfect match" between the expertise that is desired and the expertise that is available. In fact, it may well be that "the best available expertise" is still lacking in several important areas. The identified "expert vendor" may still show characteristics which are not fully aligned with expert-behaviour as identified by the EXPID model. This only means that the owner has to be aware, maybe even vigilant, the identified vendor may still make assumptions or other types of decisions. The EXPID model is of great importance in assessing the presumed level of expertise. This information is to be put to use

[1] DF Procurement is inspired by Best Value Procurement (BVP). BVP is the Best Value Approach as used in procurement and documented in several textbooks [12,13,14,15,16]. BVP claims a documented performance of over 1,700 projects delivering $6 billion in products and solutions since 1994 [17]. BVP and DFP have identical aims — the utilisation of expertise — but DFP, through the systematic avoidance of decision making and by providing guidelines and principles instead of a template, is to avoid the confusion that surrounds BVP in practice.

in the Clarification step where any type of decision making is to be "uncovered" before the delivery of the solution is to begin.
- What is procured is "expertise" and not merely a solution. Expertise includes a solution (usually in the form of one or more products and or services), but also the knowledge required to deliver it in a given and often unique situation.
- The expertise procured and utilised is to achieve a desired outcome. The desired outcome is thus what is used to identify the best available expertise, and at the same time is what the identified vendor is to work towards. This makes its pivotal that the desired outcome is transparent and understood the same by all involved.
- DF Procurement, like all methods following from the application of the approach of Decision Free Solution, is a method to minimise risk. The risk minimised is resource risk and outcome risk. The greater the risk in achieving the desired outcome — the greater the need for the use of expertise — the greater the potential benefit of using DF Procurement.
- The organising principle of the method is the avoidance of *unsubstantiated choices* also known as decision making. It applies everywhere. All the time.

Expert vendors select their owners, who compete with other owners

An owner in need of expertise is competing with other owners for this same expertise. The vendor in possession of this expertise will select the owner that will allow it to make optimal use of its resources. Profit is the result of delivering solutions quickly and successfully, not from contract clauses, extra work and inefficiency.

An expert vendor will not participate in a tender when it becomes clear the owner can not transparently define what it is it is in need of. An expert vendor will recognise any decision making from the owner's side, be it in its past behaviour, during the market exchange or during other interactions, or at the very latest in the procurement documents. There is no point in running a DFP tender as a non- or sub-optimally-performing organisation. It will become a flawed process aimed at identifying vendors who aren't experts to begin with.

DFP is a method by experts for experts

When an organisation sets out to procure and utilise expertise it is sending a strong signal to the expert-vendors that their expertise will be welcomed with open arms.

The promise of DFP for the owner is that — given the current availability of vendor expertise — the desired outcome will be achieved against minimal risk, with the highest available quality and often for the lowest price[2].

The promise of DFP for the vendor is that — given the ability of the owner to run DFP successfully throughout — it can fully exploit its expertise against the highest margins as it will not be bogged down by an owner who tries to exert control over the process and thus lowers the expert's productivity by wasting its valuable resources.

[2] The low(est) price is a result of minimising risk-associated cost overruns and quality-control related overhead.

Not every organisation is able to create the conditions for a vendor to utilise its expertise. In fact it takes an expert organisation to accommodate expert vendors. In very much the same way an expert organisation that runs DFP well will never end up with a non-performing vendor, an expert vendor will never consider wasting its valuable resources on an organisation that fails to run DFP correctly.

The better an owner sets up a DFP tender, the greater the expertise it is able to attract. The better DFP is run, the more and more efficiently risks will be minimised. The performance of the owner and the performance of the vendor are correlated. In its purest form DFP is a method by expert organisations for other expert organisations. There is only one way to execute the DFP method, and that is to execute it successfully.

The owner, the vendor and the desired outcome

The desired outcome may be achieved by the vendor in full, or the vendor is merely to contribute to it (e.g. as part of a supply chain). Generally the owner is a part of this supply chain in the sense that it is in need of external expertise, a product, a service with which it can utilise its own expertise to achieve the desired outcome. No matter what the situation is the owner is to define the desired outcome, and not merely an aspect of it. The owner is, logically, not to prescribe the part the expert is to provide. And the vendor is to utilise its expertise to contribute to achieving the desired outcome, and not to an isolated aspect of it.

From this also follows that the vendor may contribute to achieving the desired outcome, whereas the desired outcome itself will be achieved only later (either in a supply chain context or because the owner was in need of external expertise in order to achieve the desired outcome). Having said all that, for clarity and brevity it is assumed here that the desired outcome will be achieved once the vendor's plan has been executed. In practice this will often be achieved in a collaboration between vendor and owner, both providing their own expertise.

What is it the owner buys?

How the vendor's expertise (and product or service) will achieve the owner's desired outcome the vendor clarifies by way of a plan. Only when it is transparent to the owner that with the vendor's plan the desired outcome will be achieved will the vendor be awarded and can a contract be signed.

It is important to realise that in DF Procurement the owner doesn't buy a product or service: a product or service with which the desired outcome cannot be achieved is worthless to the owner. The owner doesn't buy the desired outcome either: the outcome may not be concrete enough (impossible to say for certain when it is achieved), or be something that cannot be achieved because of reasons out of the vendor's control. The owner, in essence, buys the vendor's plan and with it the plan's outcome.

The vendor's plan contains all of the vendor's expertise, and includes the delivery of a product and or service, with which the desired outcome is to be achieved. If, to the owner, the plan's outcome — as has been been made sufficiently transparent by the vendor — is in accordance with the desired outcome, then the owner will sign off on it. The owner has bought the plan and with it the plan's outcome.

What to do when the plan changes?

This plan, and thus the plan's outcome, may change. Whenever a risk occurs the plan needs to be adjusted. This may have financial consequences as well as consequences for the plan's outcome. The financial consequences are to be carried by the vendor if the risk occurring is an internal risk, and by the owner if it is an external risk. This is an incentive for both the owner and the vendor to make sure the plan is fully understood, that it is non-ambiguous who is responsible for what, and that the most important risks are identified and mitigated. Any change made in the plan must be substantiated with the desired outcome in mind.

What to do when the desired outcome can no longer be achieved?

Sometimes a risk occurs that is such that the plan's outcome no longer can be brought fully in line with the desired outcome (e.g. some deadline will be missed, some functionality will be missing). In the agreement between the owner and the vendor how to proceed in such a situation is to be described and, alas, agreed upon. Here a distinction needs to be made between an internal risk or an external risk causing this situation. How to determine whether a risk is an internal risk or an external risk, and how to proceed when vendor and owner can't agree on this, are also to be described in the agreement.

When to use DFP, and how does it differ from traditional approaches?

DF Procurement is a method which can be used in any procurement situation, both private and public. It is not an alternative or addition to the existing public procurement procedures, but can be used in any type of procurement procedure[3]. DF Procurement can be used when considering only one vendor, or when a choice has to be made between several vendors. In this text it is assumed the owner uses a tender, but it is not a prerequisite to use DFP. [*As a consequence of this assumption the documents the owner provides will be referred to as "procurement documents" and the documents the vendors provide as "tender documents"*].

DFP's benefit or value is the greater the greater the risks and the consequences of something going amiss. DF Procurement is to be seriously considered when selecting a non-performing vendor is likely to result in considerable cost overruns and delays, and potentially in not achieving the desired outcome at all.

There is no such thing as a standard procurement process, but many procurements processes follow the template as shown in Table 2. These "traditional" processes involve the definition of requirements by the non-expert owner and the subsequent reliance of a legal contract to "force" the identified vendor to perform. Procurement tends to be an organised process run by procurement specialists, and then handed over to the part of the organisation that needed the procured product or service.

[3] As the DF Procurement method adheres to the TONNNO principles at all times during all steps it also automatically abides the European public procurement directives, as interpreted in case-law.

DF Procurement differs in that it does not define requirements and that its focus is not on a contract but on the actual achievement of the desired outcome (see Table 2). Also, there is no "handover" from one step to the next, as there will be employees who will be involved from the beginning of the tender until delivery is completed[4].

Because of this different approach DF Procurement has considerable advantages over traditional procurement strategies when a) the owner is in need of expertise it knows little to nothing about, and b) the actual delivery of the product or service is complex (and thus prone to delays and cost overruns).

Between 1960 and 1966 NASA's budget went from $400 million to $6 billion, and in this time the number of contractors went from 30'000 to 360'000. Such growth could have led to large scale embezzlement. Many contractors may have made quite a bit of money, but no scandal of note was reported over the duration of the Apollo Program. The closest thing to an out-and-out scandal concerned a procurement process: the way North American got the contract to build the spacecraft. The manipulation of this process, I propose, may be considered the root cause of the Apollo 1 disaster. Joe Shea was in the middle of all of it. In November 1962 it was determined that astronauts would be going to the Moon using the lunar-orbit rendezvous concept. A spacecraft — to be made by North American — and a smaller lunar lander would travel to lunar orbit and the lander would land on the Moon and then re-dock to the spacecraft before being discarded. In November 1963, one year later, Joe Shea found that there was still no design for a command and service module compatible with lunar-orbit rendezvous. He found it hard to understand. What was happening? North American wasn't performing. Ultimately this lack of performance would results in lives lost and the end of Joe Shea at the Apollo Program. North American, it turned out, was only one of five companies that had submitted proposals. They were rated last. Still they got the contract. What happened? The short version is: decision making. The longer version (of how they got contracted and what the consequences of using decision making in procurement for the Apollo program were), will be told in this chapter.
Source: [2], Wikipedia

[4] See the section on the assessment team under "DFP Definition step".

Traditional procurement process	DF Procurement
Organisation invests in knowledge and expertise to define a list of product- or service-requirements which a vendor has to provide.	Organisation defines the desired outcome for which expertise is to be procured.
Organisation may or may not "consult" the market.	Organisation organises an extensive "market exchange" to ensure all available information (including all procurement documents) is shared, that all information required by potential vendors is identified and provided for, and that all information is transparent prior to start of the tender.
Vendor is identified (e.g. by a procurement department) based on scoring against the list of requirements.	The vendor who best substantiates to be in the possession of the expertise with which the desired outcome can be achieved is identified by an assessment team.
A detailed legal contract defines quality control methods and (typically) penalties and (less typically) incentives.	The identified vendor clarifies how (with what scope) the desired goal will be achieved. The contract is largely written by the vendor and focuses on quality assurance.
A well-defined and specified product and or solution is procured.	A plan and with it the plan's outcome — fully clarified to the organisation by the vendor — is procured.
Contract management is used to ensure the identified vendor provides the listed requirements. The owner checks the vendor's activities and controls the quality of the product or service.	The vendor executes the clarified plan and periodically informs the owner on progress and any deviations. The owner verifies quality assurance is in place.

Table 2. Direct comparison between 'traditional' procurement and DF Procurement processes.

DF Procurement in summary

DF Procurement Definition Step

At the end of the Definition step:

- The owner will have finalised its procurement documents and have a first impression of the participating vendors' ability to minimise risk
- The vendors will have a good understanding of what will be required to achieve the desired outcome, will have made a choice as to whether they want to participate in the tender, and may have begun to collect performance data and draft an outline plan in support of being able to achieve the desired outcome.

Owner activities:

- Prepare the DF Procurement event
- Define, to the best of the owner's ability:
  - The desired outcome
  - The deliverables
  - The event conditions
  - The universal rules pertaining to the owner's organisation
- Define the owner's expertise and perceived role in achieving the desired outcome
- Draft the procurement documents, including:
  - Required tender documents (type, length)
  - Description of scoring process (method, communication)
- Market exchange:
  - To ensure the desired outcome is unambiguous
  - To actively solicit for any additional information which could be provided with respect to the event conditions and universal rules
  - To inform, explain and educate the market with respect to the method of DF Procurement
  - To obtain feedback on the draft procurement documents
  - To observe the vendor's behavioural characteristics

Vendor activities:

- Ensure the desired outcome, and the role of the owner in achieving it, is fully understood
- Assess the owner-specific event conditions and universal rules
- Ensure the draft procurement documents are transparent and complete
- Ensure relevant performance data in support of being able to achieve the desired outcome is or will become available
- To observe the owner's behavioural characteristics

DF Procurement Identification Step

At the end of the Identification step:

- The owner will have ranked the vendors based on submitted price and their ability to substantiate they are able to achieve the desired outcome against minimal risk within the provided event conditions
- The vendor who will enter the Clarification step has been confirmed to fulfil any owner-defined conditions, has had some or all of its substantiated claims verified, and has shown to understand all elements of the desired outcome. This vendor is to begin organising the Clarification step.
- All other vendors are to receive an opportunity to evaluate (the arguments for) their score and, until the tender is officially awarded, are still officially participating in the tender.

Owner activities:

- Publish procurement documents
- Resolve any remaining issues vendors may have pertaining to the documents
- Score the tender documents
- Rank the vendors
- Communicate score and rankings
- Provide evaluation of identification procedure
- Perform the “expert verification check”

Vendor activities:

- Ensure final procurement documents are fully transparent
- Provide tender documents
- Make optimal use of the evaluation as provided by the owner at the end of the Identification step
- Prepare for the “expert verification check”

So how was North American awarded the contract to build the spacecraft (more specifically, the Command and Service Module (CSM))? During the Apollo Program the U.S. government used a standard procedure to award large contracts. It published a Request for Proposals (RFP) describing the work to be done. The contract was awarded based on a prearranged formula that weighed among others the technical approach, the personnel the bidder will use, and the bidder’s corporate expertise. The received proposals were rated by the various subcommittees of NASA’s Source Evaluation Board (SEB). The RFP for the CSM was published late July 1961. Five companies submitted proposals: Convair, General Dynamics, Martin, McDonnell, and North American. NASA’s SEB met October 9, 1961. North American was rated 5th by the subcommittee evaluating administrative capacity, 5th by the subcommittee on business criteria, and 5th by the subcommittee evaluating technical approach. But all of the subcommittees were then asked by the

acting manager of the Apollo Spacecraft Program Office to consider more criteria and to rescore. For one, they were to give more weight to the bidder's experience in producing experimental aircraft. This rescoring exercise helped North American considerably since they had just built the experimental X-15, which in its initial flights was proving to be an exceptional aircraft. In "technical qualification" North American now edged Martin, but overall Martin was still first with North American tied for second with Convair. The SEB was unequivocal in its recommendation: "The Martin Company is considered the outstanding source for the Apollo prime contractor." But rescoring wasn't the only funny thing that happened with the CSM contract. In those years North American seemed to be able to rely on strong relationships with key people in the organisation (at one point a senior executive of North American was overheard threatening to have the Director of one of NASA's offices fired if they were not allowed to bid for the lunar module). Someone on the CSM review panel thought the bidding process was all a waste of time as North American was going to win regardless of the score. He was not the only one thinking this way. Or trying to make this happen. Once James Webb received SEB's recommendation and asked a series of managers (among others the NASA's Associate Administrator and Deputy Director and the directors of the Office of Manned Spaceflight and of the Manned Spacecraft Center) whether there were, perhaps, other factors to be taken into account. And so, despite Martin coming out ahead, even after a rescoring exercise that heavily favored North American, North American was awarded the contract following a weekend of James Webb sleeping it over. It was awarded because several people who were not involved in the evaluation process considered a spacecraft an outgrowth of a more conventional flying machine. Thus they favored a company able to build an experimental flying machine, the X-15. In doing so they mistook a company able to build complex machinery for a company able to minimise risk in building entirely new complex machinery in a completely different environment, both literally and figuratively. Tensions between NASA and North American started the night of the award and would not fully end until 1968. In between three astronauts lost their lives (and Joe Shea his mental health). During Apollo 1's launch rehearsal test on January 27, 1967, the Command Module caught fire. In the end nobody got blamed for the fire. Based on a series of observations — observations which will be shared next — it becomes clear, however, that North American's culture was incompatible with minimising risk. A serious accident involving North American was written in the stars. A consequence of using decision making in procurement.
Source: [2], Wikipedia

DF Procurement Clarification Step

At the end of the Clarification step:
- The owner will have procured a plan (and with it the plan's outcome) which has been transparently explained to achieve the desired outcome
- The vendor will have a signed agreement and is fully prepared to start executing the plan with which the desired outcome will be achieved

Owner activities:
- Accommodate the vendor in making it transparent that the vendor will be able to achieve the desired outcome

- Ensure that it is, indeed, transparent to all involved that the vendor will achieve the desired outcome — and when the vendor fails to do so: exclude vendor and start process with the vendor who ranked just below this vendor
- Conclude the agreement and inform the other vendors

Vendor activities (following the owner's verification step):

- Clarify to the owner how the desired outcome will be achieved using all or some of the following:
  - Summary of products and or solutions to be provided (scope)
  - An outline plan from-beginning-to-end (defining the plan's outcome) as to how the desired outcome will be achieved
  - A milestone schedule including key performance indicators
  - A risk management plan
  - Verification and commissioning procedures
  - Quality Assurance procedures
  - Clarification step report
  - Executive summary of main points

DF Procurement Execution Step

At the end of the Execution step:

- The vendor will have executed the plan with which the owner's desired outcome is achieved
- The vendor will have achieved the owner's desired outcome and will have collected performance information in support of its expertise

Owner activities:

- Evaluate the vendor's periodic progress reports
- Execute the owner's activities according to the plan and provide the vendor with periodic progress reports on these activities

Vendor activities:

- Execute the vendor's activities according to the plan
- Provide the owner with periodic progress reports, including occurring risks and deviations to the plan, how they may affect the desired outcome, and how they will be mitigated
- Evaluate the owner's periodic progress reports (if utilisation of owner's expertise is part of the plan)
- Collect performance information

DFP Definition step

Preparing the organisation for the DF Procurement event

As experiences with BVP have shown, the idea of identifying the expert vendor based on a description of the desired outcome (as opposed to a long list of requirements) tends to be embraced by professionals throughout the organisation. However, the organisation itself is not always set up to translate this enthusiasm into success.

One obvious "hurdle" is the existence of a procurement department. Procurement departments have the advantage of bringing procurement needs, knowledge and experience into one place. Almost all such departments have a vested interest in finding ways to minimise procurement risks, and will embrace — or at least professionally consider — any method that sets out to do so.

However, DF Procurement is a method to procure *and utilise* expertise. Generally procurement departments are set up to focus on the identification of the vendor. Instead of relying on the organisation to provide the conditions to utilise expertise some procurement departments rely on "contract management" to minimise risk and "ensure" the performance of the vendor. Other procurement departments will be still less involved in the actual delivery of the product and or solution. Whether some desired outcome will or will not be achieved may actually be invisible to the procurement department.

The consequence of this is that risks may be minimised in identifying the expert vendor, but then business-as-usual kicks in, which tends to mean that decisions will get made and risk increases again. It is not enough for the procurement department to be "ready". Also the operational part of the organisation must be ready. What is more, if operations is not involved from the very beginning, expectations of both the identified vendor and operations will not be met and failure will be guaranteed. It often takes only one operational failure for scepticism and resistance against a new way of working to take hold.

Another practical challenge is the involvement of higher management. Agreements need to be signed, and higher management may be accustomed to have some sway over these agreements or expect to see ways to control or force a vendor into performance. Decision making may be seen as their prerogative, and resistance may be strong. As stated before, an organisation may simply not be ready to run DF Procurement successfully.

DF Procurement will fail to truly minimise risk if it only lives within a somewhat isolated procurement environment, if operations is not involved, or when decision making remains a popular tool within higher management. Procurement professionals, those who will be involved in the Execution step and those who will be signing of on it need to understand what DF Procurement sets out to achieve, and what role they have to play in it. This is to be taken into consideration when assembling the "assessment team".

The assessment team

The assessment team has the following tasks and responsibilities:

- To have intimate knowledge of the desired outcome and to prepare the organisation for the delivery of the product and or solution with which the desired outcome will be achieved
- To run the market exchange: to ensure all of the vendors receive all of the requested information pertaining to the desired outcome, event conditions, universal laws and provided procurement documents, and that all is transparent.
- To register the vendors' characteristics
- To finalise the procurement documents
- To identify the expert vendor
- To provide evaluations of the assessment process to all participating vendors
- To verify a) the identified vendor fulfills eventual qualification conditions, and b) some or all of the claims made in the tender documents
- To verify the identified vendor has a transparent plan with which the desired outcome will be achieved
- To ensure any agreement to be signed contains all the relevant documents as provided by the vendor
- To present the outcome of both the identification and clarification step to the owner's organisation as required
- To identify and avoid decision making throughout the entire process

From this follows that the assessment team is to contain:

- Someone who takes on the Decision Free Leader role
- Someone who organises the various assessment team and vendor meetings
- Someone who chairs the assessment team meetings
- Intimate knowledge of the desired outcome
- Intimate knowledge of the owner's expertise for as far it will contribute to the achievement of the desired outcome
- Someone with little to no knowledge or affinity with the expertise required to achieve the desired outcome
- Someone who will be responsible, from the owner's side, for the delivery of the procured plan by the identified vendor
- Someone responsible for the correctness and completeness of the final agreement
- Someone with the responsibility to sign the final agreement or with direct access to this person

With respect to the assessment team the following:

- All members of the assessment team must be both familiar with the underlying principles of DF Procurement and be able to attend most of the assessment team meetings as to facilitate achieving consensus
- Achieving consensus will furthermore be facilitated by:
    - A transparent and complete description of the scoring process: what the vendors have to provide, how it will be scored, what the scoring guidelines are, how the consensus score will be achieved, and how it will be shared and evaluated with the vendors (as to readily identify unsubstantiated scores by individual members)

- A transparent description in the procurement documents of the owner's expertise in contributing to achieving the desired outcome (as to avoid technical and or detailed substantive discussions within the assessment team)
- The presence of team members with little affinity with the subject matter (as to avoid informed assumptions to affect the consensus score)

How to procure exactly what you are in need of

When you don't know what you are in need of

The more traditional approach in procurement concerns the scoring of a list of owner defined requirements. Often the owner first has to make substantial investments in obtaining sufficient knowledge within the organisation to be able to come up with these requirements. This approach may be expected to produce good results when the product or service is either not too complex or the owner has procured the same or something similar before.

This model, which is resource intensive and risk-prone (you don't know what you don't know), tends to break down when the product or service is very complex and or the organisation has no prior history in procuring it. In these instances the risk of procuring something which turns out to be suboptimal increases considerably.

DF Procurement can be used in all instances something needs to be procured, but the benefits of the method are the greater the greater the risks associated with selecting a poorly performing vendor. In DF Procurement the owner steps away from trying to specify a product or service it is not an expert in and defines a desired outcome instead.

Defining this desired outcome is the most crucial and generally the most challenging element in a DF Procurement event. Crucial, as the desired outcome is what will be used to identify the expert vendor and is what the identified vendor will work to achieve. Challenging, as the owner generally holds beliefs on what functionality or aspects of a product or service are pivotal in achieving the desired outcome and doesn't want to "run the risk" on missing out on them.

But it is not only challenging to "cede control" and let go of requirements, it is also just outright difficult to strike the right balance when defining a desired outcome. The desired outcome needs to be defined broad enough to leave ample room for vendors to utilise their expertise. But if is defined too broadly it may no longer be useful in differentiating between vendors. Complicating the matter in all of this is the role the owner's own expertise plays in achieving the desired outcome.

The desired outcome needs to be defined such that the vendor can fully utilise its expertise, while also identifying and acknowledging the owner's own expertise and ideas. To achieve this DF Procurements provides guidelines and suggestions described in the next five sections:

- Guidelines in defining the desired outcome
- Defining the deliverables
- Prerequisites or functional conditions — an outcome of the owner's expertise
- Sought performances — a reflection of the owner's understanding
- What-we-think-we-want — a quantified reflection of the owner's understanding

Defining the desired outcome

To ensure a good understanding by the vendors of the owner's desired outcome without restricting the utilisation of the vendor's expertise, the following guidelines are provided:

- The desired outcome must be transparent (understood the same by all involved), objective (e.g. measurable, it shall be clear when the outcome is achieved), contain no details and no requirements (which restrict the use of expertise).
- The various elements or aspects of the desired outcome shall be listed in order of priority, whereby it shall be understood that:
  - To identify the expert vendor it is not required that the vendor, in the tender documents, provides substantiations for *all* of the elements or aspects
  - That the vendor, based on its expertise, may change the order of priority in the tender documents, as long as this is substantiated
  - That the elements or aspects shall be defined such that is fair and reasonable to expect that expert vendors will be able to substantiate them with performance data
- The desired outcome is to be placed in the context of (contributing to realising) the owner's vision, mission and or strategy.

> As the project leader of APTC the author was responsible for the procurement of proton therapy equipment. The project team recognised that, in order to realise a successfully operating proton therapy center, we relied heavily on the expertise of the vendor — in terms of the current performances of its equipment, in future developments therein, as well as the capacity to implement both technical and clinical innovations. For this reason the method of BVP was chosen and the desired outcome was defined as follows:
> APTC's clinical performance (proton therapy) must, over the operational lifetime of the proton therapy center, be able to consistently outperform the clinical performance (photon therapy) of the combined achievements of the radiotherapy departments of the three participating hospitals, for a significant number of patients, leading to the development and implementation of innovative, practice changing treatment strategies, while continuously reducing the cost differential with photon therapy for these patients.
> Note that the desired outcome contained various elements with different priorities. The order of priority was not communicated with the tenderers, however.

Defining the deliverables

The desired outcome is what the owner wants to achieve. The deliverable is what has to be realised. This may still be somewhat abstract (e.g. an IT-system) or more concrete (e.g. electric bikes for all employees).

The definition of the deliverables is to clarify for vendors what the owner expects to see realised. This is essential in allowing vendors to determine the scope of their solution and thus a price.

> In APTC's tender the deliverables were a cyclotron, three rotating gantries (for treatment delivery), the capability to perform volumetric imaging in each of the three treatment rooms and a ten year operation and maintenance contract.

Prerequisites or functional conditions

The owner often possesses expertise with respect to how it will use a product or service. This expertise may result in "prerequisites" or "functional conditions" the vendor's product or service simply must provide. In other words, these are exclusion criteria.

The owner is to always provide a substantiation of such prerequisites. If an owner is not able to provide a substantiation for a prerequisite then it is, by definition, a decision.

> In APTC's tender eleven functional conditions were defined. Five were a reflection of APTC's collective clinical expertise. Three were the consequences of legal requirements, two concerned interfacing with other systems, and one was superfluous.
>
> The functional conditions stemming from APTC's expertise resulted in the exclusion of four out of nine possible vendors. These were substantiated in detail, albeit only after one of the vendors inquired.

Sought performances

The owner may define so called "sought performances" to be shared with the vendors:

- Sought performances are a reflection of the (incomplete) understanding the owner has of the product and or service with which it assumes the desired outcome will be achieved.
- Sought performances allow the owner to communicate expectations without restricting the utilisation of the vendor's expertise by defining them as requirements.
- A vendor does not have to provide these owner-defined sought performances: in the Clarification step the vendor is to substantiate how the desired outcome will be achieved and may do so using other performances.

A potential and important downside of defining sought performances is that vendors may interpret them as implicit minimum requirements, steering them towards a "common solution" as defined by a non-expert (indirectly restricting the utilisation of the vendors' expertise and homogenising the vendors' offered scope).

> In APTC's tender thirteen sought performances were defined. These concerned among others "relevant criteria" for the beam characteristics, a desire for a "compact system", areas of hardware development (listed in order of priority), areas of productivity development (prioritised), and easy access to logged machine data for research purposes.

What-we-think-we-want

Similar to sought performances "what-we-think-we-want" is a reflection of the (incomplete) understanding the owner has of certain aspects of a product and or service. These may be a list of specific functionalities or even numerical parameters.

Also here a potential and important downside may be that such a list of what-we-think-we-want may be interpreted as implicit minimum requirements, resulting in homogenising the vendor's scope.

> In APTC's tender thirty-six separate what-we-think-we-want items were listed, seventeen of which came with expected parameters or parameter-ranges. These included a preferred maximum footprint size and preferred maximum construction depth, the ability to "switch" between treatment rooms without the need for an operator, the type of logged data that was of interest, parameters describing the quality of the dose distributions in the patient, and the duration of treatment of a one liter volume.

What the owner needs to share with the vendors

The short answer is "everything"

From the Event model follows that to achieve a desired outcome against minimal risk:

- The desired outcome must be transparent, objectifiable and contain no details or requirements
- The event conditions and the universal rules which apply to the event must be known

This will always be a shared effort by owner and vendor. The owner cannot determine for others whether its documents are transparent, and the vendor may not have access to all of the event conditions or know any of the universal rules which apply to the organisation itself. Vice versa the owner may not be aware which event conditions are actually critical, and which organisational characteristics may pose large external risks.

To minimise risk the expertise and knowledge of both owner and vendor are required. For this reason there is to be what is called a "market exchange" (see next section). The market exchange is to ensure that conditions to minimise risk will be fulfilled.

Sharing the event conditions

All event conditions are to be shared, but not all event conditions are created equal. To potential vendors two pivotal conditions are by which time the desired outcome is to be achieved, and within what price ceiling.

The price ceiling is not to be confused with the owner's available budget. The price ceiling is the maximum price the tenderers may ask for the execution of their plan. The available budget is also to cover any financial consequences of external risks occurring[5].

[5] Depending on the potential for these external risks occurring, as well as the financial impact these may have, the owner's budget may have to be larger than the price ceiling (even taking into account that the identified vendor may submit a price well below the price ceiling). The potential for external risks, as well as their consequences, is information the owner is to collect prior to the start of the tender, i.e. when approaching the market.

The function of the price ceiling is to ensure that the desired outcome will be achieved for a cost which the organisation can carry. In theory, and as shown repeatedly in practice[6], defining a desired outcome rather than a list of minimum requirements results in a broader spectrum of solutions, both in terms of quality and price. These are also correlated: greater expertise results in greater quality, and greater expertise results in lower risks, which lowers the price. Greater expertise also results in a greater understanding how the desired outcome can be achieved with minimal scope[7]. This, too, lowers the price.

There is little to no risk in defining a price ceiling which is "too high" (higher than which vendors need to achieve the desired outcome), as price is a scoring criterium, and vendors are competing also in price. There is, however, a risk in defining a price ceiling which is too low, as this becomes a filter for opportunistic vendors and may be an incentive for vendors to offer lower quality, to save money mitigating external risks and or to interpret the desired outcome in an as-narrow-as-possible fashion.

If no reliable information for a price ceiling can be obtained (not even after asking the market), and the budget is "flexible", then no price ceiling is better than an unrealistic one.

Other examples of event conditions to be shared with the vendors are:

- Available resources (personnel, legal support, etc.) within the organisation
- Legal constraints (permits, company policies, relevant laws)
- External developments which are relevant to the organisation
- Organisational developments (e.g. recent or ongoing reorganisations, change in leadership, workforce-related issues)
- Available expertise within the organisation (see subsection below).

Sharing the owner's expertise and expected role

The owner's own expertise is also an event condition, but as it very frequently plays an important role in achieving the desired outcome it gets its own subsection.

The desired outcome is to be put in the context of the owner's expertise, both in general (how the desired outcome follows from, contributes to, strengthens etc. the owner's expertise) as pertaining to achieving the desired outcome itself (what expertise of the owner the vendor is to incorporate, interface with, make good use of etc. in achieving the desired outcome).

Organisations have to share their expertise, and their expected role in the delivery of a product or service (e.g. taking the lead in requesting building permits, planning coordination with respect to other ongoing organisational activities, interfacing with existing infrastructure, room design, communication plan, etc.).

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[6] In [16], section 1.5 the authors analysed 30 BVP tenders and found that the vendor who ranked first had submitted either the lowest or second lowest price in 70% of the cases. On average the submitted price of the vendors ranked first was 7% below the submitted price of all vendors.

[7] In DF Procurement, as will be discussed in the next section, vendors can price their minimal scope with which the desired outcome can be achieved, and offer extra functionality or services as 'opportunities' for the owner to consider.

The owner has to always substantiate it is able to provide these performances without posing a risk to delivering the desired outcome. Some of the owner's expertise may be the result of earlier experiences with other vendors in other projects, because of a familiarity with specific local conditions or regulations, or simply because the expertise is the core business of the organisation itself.

Sharing and substantiating the owner's expertise is pivotal for various reasons:

- To allow the vendor to minimise its scope and thus further reduce cost
- To allow the vendor to take the owner's expertise into account making a plan
- To avoid adversely affecting the scoring of the tender documents by the assessment team when focussing on what it may be able to do better within the organisation itself
- To avoid potentially long-winded and detailed discussions during the Clarification step
- To increase vendor interest in a potential collaboration with the owner, which may impact vendor's offer in a positive way

Sharing universal rules

Expert vendors will know the relevant universal rules impacting on the defined event conditions. But organisations behave in predictable ways too. Vendors generally don't have insight in this, and the owner is to share those which are considered relevant as they might pose external risks.

Examples are the need to frequently obtain time-costly approval from higher management in case of e.g. changes during the execution step, an organisational tendency to shift focus (and resources) rapidly to new projects, poor record of response of local authorities, etc. If such behaviour is known to occur (and thus potentially poses an external risk) it is best shared with prospective vendors. The expert vendor will identify any risks and both try to mitigate these risks as well as inform the owner about potential financial consequences of risks occurring. This information can be used in determining the budget.

In the APTC tender APTC was in search of vendor expertise which could contribute to "the development and implementation of innovative, practice changing treatment strategies". What APTC was looking for in this respect from the vendor was a record of innovation, a hardware and software development program in line with APTC's scientific interests, a control system which would facilitate testing and implementation of software changes, a well designed system which would make interfacing with APTC's hardware and software developments straightforward. To allow the vendors to determine what it was what APTC needed APTC had to clarify its own expertise, scientific interests, and the type of developments it planning to pursue. To this extent a detailed overview of the clinical performances of the three radiotherapy departments (defining state-of-the-art *photon* therapy), as well as a comprehensive description of APTC's planned *proton* therapy research program were shared with the vendor. Sharing the expertise of the three radiotherapy departments not only clarified what APTC expected, but also allowed the vendors to identify opportunities. APTC's expertise could be of strategic interest for some of the vendors.

Sharing the procurement documents

The owner is to share its procurement documents as complete as possible as early as possible. These documents tend to contain requirements which may be questioned by the vendors and which may result in additional costs for the vendors to be taken into account. Sharing these documents will aid the vendor in determining at an early stage whether it is to participate in the tender.

To be shared are:

- Tender regulations, including[8]:
  - A description of the tender documents to be provided
  - A description of how they will be scored
  - A description of how they will be evaluated
- Template of the organisation's purchase agreement
- Any safety, quality or other compliance requirements[9]
- Any Intellectual Property and or Non Disclosure Agreements
- Any financial statements and or bank guarantees or required by the vendor
- Any other document containing requirements which are of potential interest to vendors
- A description of how, at the beginning of the Clarification step, it will be verified the vendor who ranked highest meets all criteria to enter this Clarification step (the so called "expert verification check")

The Market Exchange

The market exchange is more than merely a market consultation. The market is not only consulted, but also actively requested to pore over all the information the owner provides to make sure it is transparent and does not contain any decision making (choices made not substantiated to contribute to achieving the desired outcome, and which may hinder the vendor to fully utilise its expertise). The combined expertise of owner and market is to result in a complete as possible definition of event conditions and universal rules.

The market — all of the potentially interested vendors — is to be approached at an early stage for several reasons:

- To ensure the desired outcome, event conditions, the organisation's universal rules and the organisation's expertise are complete, transparent and fully understood. Vendors shall be provided the opportunity to probe anything that is not clear to them (and any answer provided is to be shared with all interested vendors).
- To collect information in support of determining the price ceiling as well as the budget. Especially information with respect to any external risks occurring (generally caused by the owner's organisation) and their potential financial consequences may be of importance in determining the budget. The more information the organisations shares in terms of which universal rules are in play the more useful this information may be[10].
- To ensure the vendors fully understand what is expected of them in a DF Procurement tender. Vendors often will need time to collect the performance data they will want to use in their

[8] These will be described in the section "DFP Identification step".

[9] Requirements are requirements when an organisation cannot substantiate the need for them in achieving the desired outcome (they become "prerequisites" when they can be substantiated). Often an organisation requests vendors to adhere to certain standards in various fields. These may not always apply or be useful and unnecessarily drive up the price or create additional costs.

[10] Note that any information a vendor may share in this respect is to be treated as competitive information.

tender documents. It is in the owner's own interest that sufficient time is made available for this[11].

- To obtain feedback on the draft procurement documents. For some requirements alternatives may be proposed, for others a substantiation may have to be provided for vendors to better understand what they are supposed to ensure.
- To observe the vendors' characteristics in support of determining whether they are in line with what would be expected from an expert vendor. These observations — best documented by the Decision Free Leader role — may not be used to score vendors, but they provide valuable information nonetheless.

Overview of vendor activities during the market exchange

During a market exchange the vendor is to do the following:

- Ensure the owner's desired outcome, event conditions and universal rules are fully understood. Ask for information on relevant event conditions or universal rules the owner may be able to provide.
- Ensure it is unambiguous when the various elements of the desired outcome will have been achieved, and whether they lend themselves to be substantiated using performance information. Make suggestions when needed.
- Ensure the scoring methodology, and the subsequent evaluation of the scoring of the tender documents, is transparent and objective.
- Request substantiations for any decision made in the procurement documents which may have an impact on the vendor's scope (and thus costing), suggest changes or alternatives where appropriate.
- Observe the characteristics of the owner's organisation in support of determining whether they are in line with what would be expected from an organisation working to minimise risk. (E.g. high quality of the documents, clear who to contact for what, quick to respond, clear answers, few to no decisions made, transparent substantiations, treat all vendors the same).
- When it is clear the tender is of interest, start to collect the performance information which is going to be used, make a tentative plan and a first estimation of what will be within scope and what will be out of scope.

[11] In a market not familiar with collecting performance data this can be a Catch-22 situation. If vendors do not readily have access to performance information — and have insufficient time to collect it from within their organisations or from customers — it becomes difficult to identify the vendor best able to minimise risk in achieving the desired outcome.

At APTC nine vendors were invited to come to Amsterdam as part of a market consultation (not yet exchange). This included a presentation on the procurement method used, with the explicit request to vendors to ensure access to expertise in this method. Following the publication of the procurement documents five vendors were eligible to participate of which three did. At the start of the tender a webinar explained the procurement method once again. This was followed by a a market exchange in the form of a two day dialogue session per vendor. The main aim of these sessions was to provide an opportunity for vendors to ask the assessment team questions which would allow them to better understand the event conditions as well as APTC's desired outcome (and thus help them to better define their scope). In preparation for this session the vendors were asked to prepare a 'sample' tender document to be used to provide them with feedback on their understanding of the method. The following observations were made:

	Vendor A	**Vendor B**	**Vendor C**
Access to expertise with procurement method	Hired Dean Kashiwagi, founder of BVP	Hired expert	None
Dialogue team	Knowledgeable, able to make commitments (4 people)	Mixed quality, no commitments could be made, very large team (12 people)	Technically oriented team, skilled (5 people)
Understanding purpose of dialogue	Good, all of them.	Two out of twelve had good understanding at end of day two	One out of five understood, others remained puzzled
Dialogue experience	Energising	Many detail-oriented discussions, tiring.	Failed to ask questions.
Vendor's focus	Performance	Relationships	Their product

Based on these observations, before any tender documents had been handed in, it was already apparent to the assessment team which vendor was best able to minimise risks in achieving APTC's desired outcome (irrespective of experience, market position, or vendor's scope).

DFP Identification step

Publish and finalise the procurement documents

With the feedback obtained during the market approach the draft procurement documents can be finalised for sharing with vendors. Typically another and final opportunity is provided for vendors to ask questions when something remains unclear. It is in the interest of the owner to make sure this clarity is provided.

How the vendor is to communicate expertise

In the identification step the vendor is to be identified who is best able to minimise risk in achieving the desired outcome. This is not demonstrated by defining and trying to explain the scope and capabilities of products or services (as the owner cannot be expected to understand all of this information), but by showing that the desired outcome is well understood and that the vendor is in the possession of relevant expertise to achieve it.

The proposed way for vendors to communicate expertise is by making a series of claims in support of achieving the desired outcome, each time followed by a substantiation that i) this claim is indeed in support of achieving (an element of) the desired outcome, and ii) that this claim is correctly made (e.g. based on past performances).

These substantiations must be transparent to the entire assessment team. Substantiations shall be in line with the TONNNO principles (i.e. transparent, objective, no details). In other words, they shall be S.M.A.R.T. (Specific, Measurable, Assigned, Relevant, Time-related[12]) and provide information that (due to its simplicity) can be understood by almost everyone and which does not require technical or detailed knowledge that only a few may possess. As stated before, the language of transparency is metrics.

The vendors' expertise can be very broad and be expressed in many ways. The following proposed vendor submittals provide the owner and vendor with the opportunity to both communiciate and assess relevant expertise. If the owner is interested in a very specific type of expertise, it can always define and request an additional submittal.

Proposed vendor submittals:

- **Relevant expertise** — The vendor makes substantiated claims it is in the possession of expertise relevant to achieve the desired outcome. E.g. performance information pertaining to achieving outcomes similar to the one desired.
- **Risk** — The vendor demonstrates its expertise by identifying *external risks* to the project and describing corresponding measures (which are included in the vendor's offer) with which the vendor will mitigate these risks for the owner.
- **Opportunity** — The vendor will determine, internally, the minimal scope required to achieve the desired outcome. The vendor may propose further additional and priced opportunities — which are substantiated to be in line with the desired outcome — for the owner to consider.

[12] This from the November 1981 issue of Management Review which contained a paper by George T. Doran called There's a S.M.A.R.T. way to write management's goals and objectives.

E.g. opportunities to further productivity, expandability, achieve still higher qualities above and beyond what is required to achieve the desired outcome.

- **Vendor interview** — The vendor's key personnel in ensuring the desired outcome will be achieved demonstrates its expertise and understanding of the desired outcome in an interview-setting with the owner's assessment team.
- **Any other submittal** by which a vendor can substantiate to possess relevant expertise to achieve the desired outcome and which can be objectively scored by the assessment team.

It is important to realise that the submittals are to communicate expertise, and must not necessarily cover *every* single element of the desired outcome, or lists *all* risks or *all* opportunities. For this reason each submittal can be short. More is not better, it is only more[13].

The interview, using a similar reasoning, is not to last much longer than 45 to 60 minutes and to be held with up to three or four vendor-representatives who collectively are able to represent the vendor's offer and submittals[14]. It is to consist primarily out of several rather general questions the owner will have shared with all vendors prior to the interview. A question like "In what aspects is achieving the desired outcome a) similar and b) different from earlier performances" will go a long way in determining the vendor team's relevant expertise. The interview may also be used to clarify certain aspects of claims and substantiations made in the documents[15]. In all of this it is important to avoid detailed and or technical discussions.

In Table 3 additional considerations and remarks are listed for each of the four submittals.

Submittal	Remarks
Relevant expertise	• The vendor is not to simply substantiate expertise, but its relevance with respect to achieving the owner's desired outcome. • Often the submittal with the highest weight. Can the vendor substantiate it has achieved similar desired outcomes before? When innovation is an important element of the desired outcome, can the vendor demonstrate a track record of innovation? • Expert vendors are likely to track their own performances and be able to use metrics in their substantiations (as opposed to a lot of text). Requesting this submittal to be relative short will make identification of the expert vendor only more straightforward. • The relevant expertise claims are listed in order of priority.

[13] In practice two pages tends to suffice. When allowing for more pages vendors are likely to feel obliged to fill them. The consequence of which is that the overall document will become more "uneven" (listing similar or less relevant performances, less consequential risks and opportunities), and perhaps more difficult to score.

[14] Interviews with individuals tend to create unnecessary stress in preparing for the interview. One person is also unlikely to be able to answer all of the questions.

[15] This may be of use when the other submittals have been assessed prior, and some discussion remains with the one or other submittal. A clarification of a claim or substantiation from the vendor representatives during the interview may be of help to settle a question.

Risk	• In the Risk submittal the vendor identifies *external risks* which may impact upon achieving the desired outcome, describes mitigation measures, and substantiates they are appropriate. • Most external risks concern the owner's behaviour, the timeliness of responses, performing required activities, etc. The expert vendor is best positioned to both identify and mitigate them. • The mitigation measures described are part of the vendor's offer. The cost of them are included in the submitted price. • The risk claims are listed in order of priority.
Opportunity	• As vendors are to limit their scope to what is required to achieve the desired outcome the opportunity submittal allows expert vendors to present additional functionalities and performances as opportunities. • The owner could define the difference between price ceiling and submitted price by the vendor as the maximum "budget" for an opportunity (a restriction which the owner could choose to substantiate). • Opportunities must not always carry a price tag (e.g. an opportunity for collaboration doesn't come with a price tag). • The opportunity claims are listed in order of priority.
Vendor interview	• The interview with vendor representatives tends to be a good indicator of available expertise and vendor culture is generally received a relatively high weight. • One interview with several vendor representations with a duration of no more than 45-60 minutes. • Typically the person who will be responsible for delivery is among the vendor representatives. • An identical set of general questions will be shared with all vendors beforehand. • The interview may also be used to ask for clarifications with respect to claims or substantiations provided in the other vendor submittals • Sharing of details and technical discussions are to be avoided.

Table 3. Remarks on the four vendor submittals of Relevant expertise, Risk, Opportunity and Vendor interview.

How to score expertise

What to pay attention to when scoring expertise

In more traditional procurement methods the owner doesn't score expertise but the characteristics of a product or service. The owner drafts a list of product or service requirements which is subsequently weighted and scored. This method has one advantage: the scoring is expressed in objective terms, often a single number. The method also has several disadvantages.

In traditional procurement methods the owner is to invest in expertise in order to be able to draft the list of requirements. This list may then be incomplete (leaving out elements which may turn out to be of great importance) and or contain interdependencies complicating scoring (some requirements may either be linked or "compensate" for each other). Next the owner is to determine which requirements are the more important. This becomes an expression of the owner's understanding of the product or solution the owner is not an expert in. Determining weights in such a situation is a non-trivial and usually also a non-transparent exercise involving decision making. It may result in the owner steering the process, either wittingly or unwittingly, to a specific solution. It may also invite vendors to explore "loopholes"[16] and or adjust their scope simply as to score more points.

In DF Procurement the owner is to score expertise instead of a product or service and thus stays clear of mentioned disadvantages. The most important task for the owner is to clearly describe its own desired outcome. How this outcome will be achieved is left to the vendor.

In scoring expertise decision making is to be avoided. This means that the scoring guideline, the scoring process, and the scoring method shall all be transparent and leave no room for undue influences and manipulation.

As expertise is communicated through the use of *qualitative* documents any scoring guideline will leave *some* room for interpretation. The aim of the scoring guideline is to *minimise* this room by being as transparent and objective as possible. As expressed by case law[17] the assessment team is in fact allowed some room of interpretation as long as i) it is transparent to the vendor what is expected of him, ii) the scoring guideline is made as objective as possible, and iii) the owner substantiates the scoring outcome in such a way that the vendor can assess how the score was arrived at and verify whether the ranking is justified.

The scoring guideline is pivotal also in the scoring process. If the guideline leaves too much room for interpretation the assessment team may not be able to agree on a score. If the assessment team has difficulties agreeing, is likely to also have difficulties providing the vendors with a transparent substantiation for the scores and resulting vendor ranking. This opens the door for the owner to be challenged.

For the scoring process it is important that the vendor submittals are scored in absence of any outside influences, opinions or preconceptions. For this reason the price submitted by the vendor shall not be disclosed until after all submittals have been scored, the submittals provided to the individuals members of the assessment team shall be made anonymous, and the assessment team is to come to a single substantiated consensus score.

Finally, the scoring method is to take these scores and determine a vendor ranking. The starting point are the various vendor submittals, and the relative importance the owner contributes to them. Then the owner is to answer one single question: what would I be willing to pay more for a vendor who is able to make it transparent it will achieve several of the most important elements of the

[16] A vendor may make a functional claim which scores a lot of points, and then, when it is not able to achieve it, accept any related penalties.

[17] See e.g. legal case C/09/490634 KG ZA 15/877 of the court of The Hague, Netherlands.

desired outcome? Given the submittal weights and the submittal scores the answer allows for a ranking of the vendors. This is the so-called "fictitious price method" as explained below.

The scoring guideline

With respect to the scoring guideline the following:

- The guideline proposes the use of nouns (such as "poor" or "excellent") instead of numbers as for some certain numbers may have their own special connotation[18].
- The score itself is to avoid discussion, and so the "scoring grid" shall not to be too fine. Proposed are "poor", "unsatisfactory", "neutral", "good" and "excellent".
- The guideline as defined below requires that the various elements of the desired outcome are both listed and clearly communicated to be in the order of priority.
- Each vendor submittal is scored as a whole.

The proposed scoring guideline, to be used for all vendor submittals, is:

- **Poor** — Submittal i) not transparent or of relevance with respect to the elements of the desired outcome OR ii) indicative of poor understanding of one or several of the most important elements of it.
- **Unsatisfactory** — Submittal i) insufficiently transparent and of relevance with respect to various elements of the desired outcome OR ii) providing no claims/substantiations in support of the most important elements of it.
- **Neutral** — Submittal somewhat transparent and of relevance with respect to various elements of the desired outcome, but insufficiently transparent and of relevance to several of the most important elements of it.
- **Good** — Submittal transparent and of relevance with respect to several of the most important elements of the desired outcome.
- **Excellent** — Submittal transparent and of relevance with respect to i) the most important elements of the desired outcome OR ii) several of the most important elements with claims demonstrated to be over and beyond what may be expected from the industry.

The scoring process

In the scoring process all the assessment team members each become a copy of all of the vendor submittals which are to be anonymous. The submitted price is not made known to the assessment team at this time.

The scoring process itself goes as follows:

- Each member of the assessment team individually determines a score for each vendor submittal using the scoring guideline.
- Each member of the assessment time provides a substantiation for each score made.
- The final score of a vendor submittal is a consensus score of the entire assessment team (and not an average of the scores of the individual team members[19]).

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[18] To some people numbers have their own internal "scoring guidelines". E.g. a "10" may be habitually interpreted as "everything must be absolutely perfect".

[19] There shall be no averaging of scores. Either something is made transparent to all, or it requires some special knowledge, expertise or interpretation to understand it. Whenever a discussion ensues something is not transparent.

- Each consensus score is substantiated using the scoring guideline.

The interview can be scored separately, like the other submittals, but can also be used to either confirm or adjust the consensus score of the other submittals[20].

The fictitious price method

In the fictitious price method[21] the vendor's submitted price is not scored. The vendor's submitted price simply has to be below the price ceiling as defined by the owner. Instead the fictitious price method takes the vendor's submitted price as the starting point and adds a fictitious financial value to this price.

The fictitious financial value is a measure of the vendor's expertise and is either negative (indicative of available expertise) or positive (not so). The resulting "total fictitious price" is used to rank the vendors.

The fictitious price method can be broken down into three steps. In the first step the maximum fictitious financial value (positive and negative) to be added to the submitted price is determined by asking a single real-word question. In the second step the relative weights of the vendor submittals is determined, and in the third step a table is made which translates the score of each individual vendor submittal into a fictitious value to be added to the submitted price.

In this section this is explained by way of an example.

The first step is to answer the *fictitious price question*: "what would I be willing to pay more for a vendor who has an overall submittal score of 'good' rather than 'neutral'".

A "neutral" vendor has provided insufficient transparency as to whether it will achieve several of the most important elements of the desired outcome. A "good" vendor has done so. Phrased differently the question becomes "how much cheaper must a 'neutral' vendor be to rank above a 'good' vendor?"

Whatever the answer is going to be, it is essential that it is substantiated. This could be done based on an analysis of scoring scenarios[22], expected price differences (based on market consultation), the likelihood of external risks occurring which carry large financial consequences, the impact poor performance may have on the business case etc.

Example: an owner with a price ceiling of 80 MEUR answers the fictitious price question with 18 MEUR. This value is substantiated by an analysis of likely scoring scenarios (this value is to make it

[20] Scoring an interview could be seen as scoring "people" as opposed to scoring "expertise". These people may not be pertinent to the vendor's expertise. There is a legal viewpoint, not widely shared and not expressed or confirmed in legal proceedings, that an interview is not to be scored separately in a European (public) tender as all scoring is to be directly related to what will be procured.

[21] The principle of using fictitious financial values to score documents has been around at least since 2007 (see e.g. "Gunnen op Waarde, vaker en effectiever", PSIbouw, May 1, 2017). The way to establish the fictitious financial values as described here is new.

[22] When working with scenarios (e.g. what happens when a vendor scores poorly on expertise but submits a very low price) it becomes easier to assess how the scoring choices made would impact the ranking in said scenario's. This allows the owner to determine how exposed it wants to be to vendors tendering strategically.

less likely an opportunistic vendor is identified), and on the positive impact a performing vendor would have on the exploitation model (e.g. through higher productivity). If "good"-scoring vendor A has submitted a price of 68 MEUR (by definition below the price ceiling) then a "neutral"-scoring vendor B would have to submit a price below 50 MEUR to rank above vendor A.

The second step is to determine the relative weight of the vendor submittals. For each submittal the weight is to be determined (and subsequently substantiated) with the event conditions and universal rules in mind.

For example, when it comes to weighing the level of expertise, is it very challenging to achieve the desired outcome or will many vendors be able to achieve it? When it comes to risk, are there many interfaces with existing infrastructure? Are there many third parties involved? Could the financial consequences of external risks occurring be big? When it comes to opportunities, is there only an interest in "getting the job done", or is there also an interest in (and budget for) considering additional opportunities?

If a particular submittal is deemed to be of little to no importance, or is attributed a weight that is unlikely to affect the overall ranking, then it might as well be left out. By leaving out a submittal that is deemed of little interest more efficient use will be made of the vendors' and owner's time.

In this section's example the following weights are assumed to have been determined: Relevant expertise has a weight of 4, Risk 2, Opportunity 1 and Interviews 3. Based on this weight distribution the Opportunity submittal with a weight of 1 will be not be requested from the vendors.

Given the total weight of the submittals combined (in our example 9), and the answer to the fictitious price question (in our example 18 MEUR) the maximum fictitious value per weight point can be determined (in our example 4 MEUR[23]). From this follows the maximum fictitious value per submittal (in our example 16 MEUR for Relevant expertise)

The third step involves converting the consensus score per submittal to a fictitious value to be added to the submitted price. The conversion-key is shown in Table 4. For example, if a vendor scores a "good" for the Relevant expertise document, then -/-50% of the maximum fictitious value of this submittal will be added to the submitted price. In our example this will result in a fictitious subtraction of 4 MEUR.

[23] Given the collective weight of '9' and a total financial value of 18 MEUR between a addition of 0% (neutral) and 50% (good), the maximum fictitious price addition over all submittals combined is 36 MEUR. This is 4 MEUR per point of weight. For the Relevant expertise submittal, with a weight of 4, the maximum fictitious value thus becomes 16 MEUR.

Submittal score as determined by assessment team	Percentual addition of "maximum fictitious value" to submitted price	Example with maximum fictitious value of 16 MEUR
"Excellent"	-/- 100%	-16 MEUR
"Good"	-/- 50%	-8 MEUR
"Neutral"	0%	0 MEUR
"Unsatisfactory"	+/+ 50%	+8 MEUR
"Poor"	+/+ 100%	+16 MEUR

Table 4. Conversion of score into percentage of maximum financial value for a given submittal

An example of the fictitious price method in practice

An owner is to purchase complex equipment and a ten year service contract. The equipment is supposed to last longer, and for this to happen it is likely to be needing some upgrades. The equipment will also have many interfaces with existing infrastructure, and there are many stakeholders involved. Given this scenario, with plenty of risks, the owner knows the vendor's expertise is key in achieving the desired outcome and chooses to use the method of DF Procurement.

- Based on the information obtained over the course of the market approach, and based upon a fairly detailed business case, the price ceiling is set at 80 MEUR.
- Given the magnitude of the investment, the complexity of interfacing with existing infrastructure, and the need for subsequent equipment upgrades the greatest weights are attributed to the submittals of Relevant expertise and Vendor interview ("4" and "3" respectively). The Risk document receives a weight of "2" and the Opportunity document receives a "1".
- Given the low relative contribution of the Opportunity document in determining the ranking (contributing a weight of 1 out of 10 overall) the owner chooses to not request an Opportunity document from the vendors[24].
- Following a scenario and a trade off analysis the owner has determined it values an average score of "good" over an average score of "neutral" with 18 MEUR. The resulting maximum fictitious values per submittal are listed in Table 5.
- The assessment comes to the consensus scores as listed in Table 5 which, using the percentages as listed in Table 4, the fictitious price additions are determined. The total of the fictitious price additions is -20 MEUR.
- Following the scoring of all the submittals the vendor submitted price (67,25 MEUR) is now revealed.
- The total fictitious price used for ranking (47,25 MEUR) follows by adding the total of the fictitious price additions (-20 MEUR) to the vendor's submitted price (67,25 MEUR).

[24] The selected vendor can, of course, propose "opportunities" during or after the Clarification step.

Submittal	Weight	Max. Fictitious value	Score	Fictitious Price additions
Relevant expertise	4	16 MEUR	"good"	-8 MEUR
Risk document	2	8 MEUR	"neutral"	0 MEUR
Opportunity document	-			
Vendor interview	3	12 MEUR	"excellent "	-12 MEUR
Price				67,25 MEUR
Total Fictitious Price				47,25 MEUR

Table 5. Determination of the total fictitious price to be used for ranking the vendor. The fictitious price additions of the three submittals add up to -20 MEUR. Given the submitted price of 67,25 MEUR the total fictitious price is 47,25 MEUR.

Communication of rank and evaluation

The owner is to communicate to the vendor both the ranking and the substantiations behind all of the scores the vendor received. It is pivotal that the vendors who don't rank first can not only assess how their scores were arrived at, but also verify that the ranking is justified. This means that thought must be given to how to achieve the latter while staying clear of sharing sensitive competitive information at a very early stage. How this will be done is to be communicated clearly in the procurement documents[25].

The vendors is also to be provided an opportunity to evaluate the entire procurement process (from market approach to method used to assessment of the submittals). These evaluations can be of great value both for the owner who is to use the method again as well as for the vendors.

> Following APTC's communication of the ranking and the evaluations APTC was taken to court by the vendor who ranked last. The vendor, who demonstrated a poor understanding of the procurement method both throughout the process and in the tender documents, claimed that the method was subjective and demanded that the scoring be done again. The vendor lost its case on all points — both for still not understanding what the method set out to do, and for making procedural errors. The case did however highlight the importance of clear and explicit prioritisation of the various elements of the desired outcome, transparent scoring guidelines, and the upfront sharing on which grounds and by communicating what it will be made transparent why a vendor ranked first. This to avoid the suspicion of — and potential for — decision making by the owner as perceived by the vendor.

[25] haring selected claims and substantiations, with sensitive information crossed out, and providing a price-range for the submitted price, may contribute to justifying the ranking.

Vendors will be ranked, but not excluded

Using the fictitious price method the vendors will be ranked. The vendor ranked first has been identified as the vendor offering the best combination of price and expertise. The vendor can be said to be "pre-awarded". This vendor will progress to the Clarification step and is to make transparent with what scope it will how achieve the desired outcome. Only when the vendor achieves thus will it be "awarded".

It is still possible that the pre-awarded vendor fails to make transparent it can indeed achieve the desired outcome for the submitted price. In this case the vendor ranked second will be asked to be in charge of the Clarification step.

A vendor will be officially excluded only when i) it fails to clarify its offer in the Clarification step, or ii) another vendor successfully clarifies its offer and is awarded.

The expert verification check

The why of the expert verification check

In the Clarification step the identified vendor is in the lead and starts to clarify how its solution is to achieve all elements of the desired outcome. If the vendor fails, then the vendor will be excluded and the vendor who ranked below the excluded vendor will be invited to the Clarification step.

Typically the owner is in need of a delivered solution at a given moment in time. Excluding a vendor at some stage during the Clarification step carries the penalty of delay. In rare cases the consequences of this delay, which in some instances can be many weeks or months, may not matter. More likely, however, any delay does matter and the consequences may even be unacceptable. To keep this penalty as minimal as possible — and to avoid being "forced" into an agreement with a vendor for e.g. running out of time — the owner is to do a "expert verification check" prior to the start of the Clarification step.

This expert verification check consists out of three elements (performed in this order):

- Verification that any owner-defined conditions are fulfilled
- Verification of some or all of the substantiated claims
- Verification the vendor has fully understood all elements of the desired outcome

If the vendor does not fulfill all conditions, is not able to provide evidence in support for all of the claims and substantiations the vendor wants to verify, or fails to demonstrate a good understanding of all elements of the desired outcome, then the vendor will be excluded. In this case the owner will turn to the vendor who ranked below the excluded vendor, and repeat the verification process.

To ensure the expert verification check takes as little time as possible its steps and procedures (what the owner will do, what is expected of the vendor) is clearly described in the procurement documents. The three verification elements will be introduced next.

Verification of owner-defined conditions

In order to take part in the tender the vendor has to fulfill the conditions as defined by the owner. These conditions tend to be a reflection of the expertise of the owner, or the result of standing legal or organisational etc. requirements that had to be followed. Verifying the vendor fulfils these conditions generally takes little time and effort.

Verification of substantiated claims

In the tender documents the vendor will have made substantiated claims, often using metrics. The owner is to indicate which substantiated claims it wants to see verified. It is left to the vendor to provide the underlying data and or logic and to present them such that the owner is able to verify them.

This verification step may take place at the location of the owner or of the vendor. The latter is advised as it presents an opportunity for the owner to visit the vendor and make observations in support yes/no of having identified an expert vendor. Even these observations — because of existing tender regulations — may have no material impact (no change of ranking or exclusion), they do provide useful information. If observations were made which are not fully aligned with an ability to minimise risk then the owner is advised to take extra care to ensure the vendor fully clarifies all aspects of its plan during the Clarification step.

If the substantiated claims are verified at the vendor's location then at least the assessment team member with the DFL role is to attend. In absence of the complete assessment team the vendor is to be asked to produce a document describing how, using what logic and data, the substantiated claims were verified. The attending team members are to share their observations with the rest of the team.

Verification of understanding of desired outcome

It is pivotal to ensure the vendor understands the desired outcome in the same way as the owner meant it. The market approach should have given ample opportunity for the vendor to ask questions etc., and the tender documents may have demonstrated a good understanding at least to a degree. But both owner and vendor are likely to have made unidentified assumptions in the process of defining the desired outcome and in determining how it can be achieved.

This final part of the verification check is pivotal also for the vendor. If it turns out the owner has communicated its desired outcome rather poorly, or may have altered its thinking, the vendor may not be able to achieve the desired outcome against the submitted price after all (as the Clarification step does not allow for negotiation). The vendor may also identify the owner as a non-expert organisation likely to make decisions and thus increase risk in delivering its solution. It is in the interest of the vendor, too, to clarify its understanding of the desired outcome to the owner.

To this effect the vendor is to provide a global overview of how it believes it will achieve the desired outcome which is to at least include the following:

- A simple explanation of the solution the vendor is delivering, and how they will deliver it
- Definition of what is in scope — what part of the scope is to contribute to which part of the desired outcome

- Definition of what is out of scope — especially important with respect to interfaces with existing infrastructure
- Assumptions which the vendor may have had to make, for example with respect to:
  - The owner's expertise (fields of expertise, capacity, availability, etc.)
  - What the owner will provide
  - Local conditions
  - Access, storage
- List of the most important (particularly owner-related) identified risks and how the vendor proposes to mitigate them.

The verification of the understanding of the desired outcome is a critical step. It is to provide both the owner and the vendor the opportunity to quickly assess whether they want to continue with each other. To this aim this part of the check shall not be protracted. It is about identifying whether owner and vendor understand the desired outcome in the same way, and should not "slide" into a clarification of how and when the solution is to be delivered.

Formal and informal conclusion of the Identification step

Assuming both owner and vendor want to continue with each other, the owner's assessment team is advised to conclude this verification — and thus the entire expert verification check — both formally and informally. Both vendor and owner have concluded they are willing and capable to work towards achieving the same aim. The vendor can be said to have been "pre-awarded" an agreement. The vendor is no longer competing with other vendors, but only has to clarify how it will achieve the desired outcome. If the vendor succeeds he will be awarded with an agreement.

The formal part would be a document briefly describing what was checked in the expert verification check, how it was received and perceived by the assessment team, what was (perhaps) clarified with respect to the desired outcome, and what aspects the owner would like to see further clarified in the Clarification step itself.

The informal part is to recognise the successful conclusion of the identification of an expert vendor. Both the vendor team and the assessment team will have performed quite a bit of work and will continue their work in the Clarification Step. The end of the Identification step also marks the transition from a vendor who has responded to the owner's request to a vendor who is in the lead.

Overview of vendor activities during the Identification step

During the Identification step the vendor is to:

- Ensure that the final procurement documents are fully transparent.
- Collect, verify and present all the performance data as required to substantiate the claims made in the vendor submittals.
- Identify the people to take part in the Vendor interview and prepare the interview.
- Ensure the submittals are in compliance with any provided specifications (length, font, anonymous), contains correct data, and heeds the scoring guidelines.
- Uses the evaluation as provided by the owner both as an opportunity to learn as well as to provide feedback.

- Prepare for the expert verification check

North American was awarded the contract following a procurement procedure in which it scored very poorly, which was then tinkered with, and ultimately discarded. It was a decision based on the thinking that a company that could build an experimental aircraft would also be able to build the first spacecraft. It was felt that North American was the expert. The question posed here is whether this feeling was justified at the time it was made, or whether there were already easy to observe characteristics indicating North American was not, after all, the right company to build the Command and Service Module (CSM). An expert company is to avoid decision making and will demonstrate the corresponding characteristics (see the Kashiwagi Risk Minimisation Forecasting model). When North American made its bid for the CSM contract it had built strong relationships with key officials and was willing to use them to manipulate the procedure. At the time it also had a number of subcontracts on its hand and was frontrunner to win another major NASA contract to develop the second stage of the Saturn rocket. Even though North American didn't have the resources to take it all on they still went for the win/money. On the night of the award of the contract someone at North American made up baseball caps with "NA$A" embroidered on the front. An organisation that builds strong relationships which it is willing to use as a threat, which bids for a major contract in absence of having the appropriate resources to realise it, and which doesn't shy away from publicly communicating its preoccupation with money is not an expert company. During the first years of the contract North American acquired a very bad reputation around NASA. Two years after North American began the work Joe Shea entered the scene. Many years later his judgement hadn't softened: "I do not have a high opinion of North American and their motives in the early days. I think they were more interested in the financial aspects of the program than in the technical content of the program. I think they had a very bad general manager, I think North American's president had dollar signs in his eyes. Their first program manager was a first-class jerk. There were spots of good guys, but it was just an ineffective organisation. They had no discipline, no concept of change control. If anything, they were interested in pumping the program up rather than in what the program really was." This organisation still build a spacecraft. Which went through a launch test. Which went horribly wrong. Could North American — the vendor that came out of a botched procurement procedure — be blamed for the lives that were lost? Did North American fail to minimise risk, as predicted here? Was the tragedy the result of poor performance? To be continued.
Source: [2], Wikipedia

DFP Clarification Step

Not "business as usual"

To have identified the vendor, and to have verified the vendor understands the desired outcome, is a milestone. The vendor hasn't been awarded an agreement yet, but it is everybody's wish — and in everybody's interest — to end the Clarification step with a signed agreement with this vendor.

From the vendor's point of view the activities performed during the Clarification step are very much the same as what is done in DF Project Management. The vendor understands the desired outcome and now makes a plan which is to be transparently explained to the owner of the desired outcome before. Once this has been achieved the plan can be executed.

The challenge in DF Procurement is that generally the owner's organisation has relevant expertise as well — which has to be integrated in the plan. Also, there is still the (now somewhat remote) chance for the vendor to get excluded. Finally, the submitted price will remain what it is: any extra cost resulting from a vendor's false assumption is to be absorbed by the vendor.

It is essential to recall that the owner does not procure a desired outcome, and that the vendor is not merely selling a product or a service. What is procured is the plan, which describes how the vendor uses its expertise and its product and or service to achieve the owner's desired outcome, and which the vendor is to successfully clarify in the Clarification step. Whenever a risk occurs the plan will have to be adjusted, and this may have consequences, both financially and with respect to the desired outcome. Who has to carry these consequences depends on whether the risk occurring was an internal or an external risk.

There are several challenges to be met in the Clarification step. If a DF Procurement tender is run by the owner's procurement department, there is the risk it will put up a banner saying "mission accomplished" and fall back to "business as usual" by handing everything over to the department in need of a solution. This effectively means the method of DF Procurement is abandoned. The owner may also continue to tell the vendor what it wants the vendor to do or, vice versa, the vendor may fail to take the lead. This will result in a delay at best, but usually also decision making. The owner may also bring in new people (e.g. the owner's experts who will be contributing), which, especially when they have not been made aware of the principles of a DF Procurement tender, may result in frequent detailed (technical) discussions which may end up derailing the process of clarification.

Overcoming the Clarification step challenges — the assessment team

It is essential that DF Procurement is understood as a method to *both* identify the vendor *and* deliver the solution with which the desired outcome will be achieved. The owner's organisation may have a procurement department whose responsibility it is to come up with a signed agreement, and another department which is in need of integrating a solution to achieve a certain goal.

The key to a successful Clarification step is the integrity, availability and stable composition of the assessment team during both the Identification and Clarification step. When selecting the people who make up the assessment team these elements have to be taken into consideration. Especially in case of a "virtual handover" from one department to the next it is important that the assessment team remains largely intact. What is to be avoided is a shake up of the assessment team (e.g. an influx of the owner's specialists new to both the vendor and the method).

The assessment team will have identified the vendor as a performer through the submittals and during the expert verification check. They may have struggled at times with the method, will have had discussions (e.g. in reaching consensus) and "hands on" training by the team member with the Decision Free Leader role.

If the team has observed repeatedly that the vendor displays expert behavior (good submittals, quick to verify, on time, organised etc.), then the team will automatically being to trust the vendor. This performance- and observation-based trust is of great value during the Clarification step. Vice versa, if during the Clarification step no such trust exists between the vendor and the owner, there is reason for concern that risk will not be minimised after all.

The assessment team is no witness to discussions between experts

The assessment team is not to take part in all activities and meetings when the owner has expertise relevant to achieving the outcome. The vendor is to integrate this expertise into its plan. As the vendor is in the lead it will request the owner to make these people available for discussions.

The discussions are to ensure the interfaces between vendor and owner are understood well, and that it is unambiguous who is accountable for delivering what. The vendor is to ask the owner's experts to make a transparent plan as to how they will achieve their tasks. The outcome of these discussions is to be documented by the vendor.

These discussions between experts of both parties will be detail oriented and are to take place in parallel to — and separate from — the clarification meetings with the assessment team. For the assessment team the mere fact that the vendor and the owner's experts are able to agree with one another (and that there is a document describing who is accountable for what) suffices.

The vendor sells the owner the plan's outcome

The vendor is to make a detailed plan how to achieve the desired outcome (if the owner approves the plan, the plan's outcome becomes the de facto desired outcome). The vendor can't simply share, or try to explain, this detailed plan. The detailed plan is for internal use only. The owner's assessment team won't be able to fully understand it, and how the vendor utilises its expertise is really of no concern to the owner.

Instead of trying to explain the detailed plan the vendor is to make a higher level plan. This higher level plan lists the activities and their outcomes in such a way that it is transparent to the assessment team that the desired outcome will be achieved. In this process the vendor may have to adjust the "height of the level" of this plan as appropriate.

Once it is transparent to the owner that execution of this plan will result in the desired outcome, and that the most important risks will be managed, the Clarification step has been concluded. The owner buys the plan, and thus the plan's outcome.

The vendor's Clarification step deliverables

Typically the owner's organisation uses a standard legal agreement which it is to share already during the market consultation. Also typically the standard legal agreement is used as a tool to control the vendor and includes a range of requirements.

In DF Procurement the agreement is not to be a tool of (quality) control but of quality assurance. It shall only contain requirements which the owner's organisation can substantiate to be essential. The main purpose of the agreement is to describe how issues shall be resolved.

When it comes to changes to the plan because of risks occurring a distinction has to be made between internal and external risks occurring. The agreement shall in any case describe i) how to proceed when internal risks occurring result in changes to the plan's outcome which cannot be substantiated to be in line with the desired outcome, and ii) how to proceed when external risks occurring results in the situation where the desired outcome can no longer be achieved.

All material the vendor produces, presents and or shares with the owner may be stapled together and added to the agreement as an appendix. The following deliverables are suggested for the vendor to produce, present, explain and share with the owner over the course of the Clarification step:

- A schedule of the topics/activities of the Clarification step period
- An overview of scope (what is in and what is out of scope)
- A summary of how the scope will contribute to achieving the various elements of the desired outcome
- A milestone project schedule from beginning to end of the project.
- An overview of the areas where the vendor interfaces with the owner or other parties, including a clear description of both the deliverables, who is accountable for them, any related risks, and how they will be mitigated (typically by the vendor).
- A Risk Management Plan listing the identified external risks and the vendor's mitigation measures
- An overview of how plan progress will be communicated to the owner during the Execution step
- An overview of how it will be communicated to the owner that the solution has been delivered (e.g. acceptance tests)
- An overview of how it will be communicated to the owner that the solution functions after delivery (i.e. Key Performance Indicators)
- A service level agreement defining quality, availability, responsibilities etc.
- A description of how to manage changes to the plan (and the resulting consequences) when there is either no consensus or not possible to determine whether these changes are the result of internal or external changes
- A report listing all the changes made (and choices agreed upon) to the vendor's deliverables during the Clarification step (i.e. a "Periodic Clarification Report", analogue to the Periodic Execution Report (PER))
- An overview presentation with the main items of all aforementioned deliverables

The DFL role in the Clarification step

A lot of work needs to be done in the Clarification step. The vendor has to take the lead. The vendor has not yet been awarded. New people will join the meetings and or discussions. Senior people may suddenly show up and formulate new demands and wishes.

It is unlikely that the paradigm shift of no decision making will be adhered to across the board all by itself. If the owner makes a demand the vendor may grudgingly absorb it as it hasn't been awarded anything yet. If the vendor's communications are too technical for the owner to understand the owner may begin to worry and develop an urge to control the vendor during execution.

It is the responsibility of the Decision Free Leader role to guard the process. A very simple way of doing so is to make "the process" a recurring agenda item.

The Final Clarification Meeting

When the vendor has clarified the various aspects of its plan to the assessment team it is suggested the owner organises a final Clarification meeting to which it invites all people who have participated as well as the various stakeholders. The vendor is to make an overview presentation summarising the plan and the main items as described in the deliverables.

This final meeting is meant as a conclusion, and not as an intense question and answer session for stakeholders new to the process. It does, of course, provide an opportunity for stakeholders to ask questions. These questions may even require a follow up by the vendor at a later date.

Following a satisfactory conclusion to the Final Clarification Meeting the vendor may be awarded with a signed agreement.

Three members of APTC's assessment team also had a seat in the project's steering group. This was by design, as the board members in the steering group had shown a tendency for decision making in situations they were unfamiliar with. As the vendor ranked first had not submitted the lowest price — the one thing the board members readily understood — a discussion did follow but decision making was avoided. This steering group meeting took place after the expert verification check, which was performed at the vendor's location. The visit lasted two days and both the substantiations received and the observations made were in support of having identified an expert-vendor. The Clarification step took four months, a function of the complexity of the plan to be made transparent and the many time zones between the vendor's location and Amsterdam. The vendor turned out to have made an assumption which it failed to explain to APTC's satisfaction. The vendor then absorbed the financial consequences of this decision. During this period, as progress was made and the two teams were eager to move forward and got to know each other, a relationship developed. This relationship was built on demonstrated performances, and resulted in mutual trust. This trust did not take the place of transparent substantiations in clarifying the plan. It took the place of the desire to ask for more details, more documents, more information. After four months a Final Clarification Meeting was organised and the Clarification step successfully concluded. The various clarifying documents produced during the Clarification step were added to the agreement, which was now ready to be signed.

DFP Execution Step

The easy part

The vendor understands the owner's desired outcome and has a plan which the owner understands and has approved of. The vendor is now to execute the plan. The Execution step is the easy part: the vendor (and likely also the owner) is to utilise its expertise without interference. To avoid interference periodic communication is essential. This is where the Periodic Execution Report or PER plays an essential role.

The role of the vendor's project manager: the PER

The vendor's project manager will see to it that the vendors' detailed plan, including the risk management plan, is executed. On top of that the project manager's most important task is to ensure there is, indeed, no-one interfering with the plan's execution. This is done by producing Periodic Execution Reports (PERs). As described in the chapter "The four steps of DICE", under "Execution", the following information is included in the PER:

- Whether there are any deviations to the plan (yes/no)
- In case of a deviation:
  - The cause of the deviation
  - The impact this may have on the desired outcome
  - The measure, if any, to mitigate the impact on the desired outcome
- Any newly identified risks and corresponding measures taken

By *periodically* informing the owner of plan progress and the impact of any deviation the owner is most likely to refrain from interfering. The moment the PER is not produced in time and or is incomplete the owner is more likely to begin to feel uncomfortable. Is the vendor still delivering? Are there problems I should know about? This discomfort is likely to result in inspections, instructions, request for information and eventually decision making.

The vendor's project manager is also to ensure the owner is delivering on its own plan. The owner is to produce its own PERs to the vendor.

The role of the owner's project manager: quality assurance

The main responsibility of the owner's project manager is to ensure that the vendor produces its PER both in time and with complete information. What was the cause of deviation, is a mitigation measure defined and put in place, what new risks were defined, what is being done about it? Instead of controlling the vendor's work (quality control) it is to verify the vendor is on top of its own planned activities by checking the information in the PERs is verifiable and up to date (quality assurance).

The owner's project manager must also see to it that the owner's plans — in as far as the owner's expertise is used in achieved the desired outcome — are executed, and that PERs are produced and shared with the vendor as agreed upon during the Clarification step.

The PER is of great importance to the vendor as well

In producing the PER throughout the duration of the Execution step the vendor:

- Produces metrics it can use to improve and or communicate its performance
- Has documented, and thus communicated, all deviations (and their causes) to the desired outcome
- Has documented all occuring external risks and their impact on the desired outcome (for which the vendor is not accountable).

The last item means that the PERs provide the vendor with "protection" against any claims the owner may want to make which will have resulted from the owner's own (or third party's) non-performance. The vendor is only responsible (and accountable) for any impact on the desired outcome resulting from deviations what are to be attributed to its own non-performance (or of those of other parties the vendor brought in).

Changes to the plan's outcome must be aligned with the desired outcome

During the Execution step risks may occur which results in changes to the plan and possibly the plan's outcome (e.g. in terms of date of delivery, or even functionality). Consequences of internal risks occurring have to be absorbed by the vendor, consequences of external risks by the owner.

A change to the plan's outcome because of an internal risk occurring is to be substantiated by the vendor to still be in line with the desired outcome. If this is the case then no further action is warranted. If the vendor cannot substantiate this, then the agreement is to provide a description of how to proceed.

A change to the plan's outcome because of an external risk occurring warrants no further action if the owner can absorb the consequences of the external risk and when the vendor can substantiate that the changed plan's outcome is still aligned with the desired outcome. If the owner cannot absorb the consequences, or when the desired outcome can no longer be achieved to the owner's satisfaction, then also in this situation the agreement is to provide a description of how to proceed.

The protection transparency offers

Both the vendor and the owner have an interest in achieving the desired outcome on time and within budget. A poor performance by one is likely to reflect poorly on the other. Transparency, — e.g. by making certain progress and performance indicators publicly accessible — will protect the performer, be it the vendor, the owner, or both. The vendor and owner are both advised to propose such public transparency.

> North American was "hand picked" to build the Command and Service Module (CSM) because it had built an experimental aircraft that performed well. But the ability to build a complex product doesn't mean one is therefore an expert able to minimise risk in building another still more complex product. What is more, at the time North American displayed easily observable

characteristics which were not in line with being an expert organisation. As Joe Shea readily found out when he got involved with the severely delayed project. There were problems all over the place, culminating in what became the Apollo Program's watershed moment. Apollo 1 was planned as the first low Earth orbital test of the CSM with a crew. The mission never flew because of a cabin fire during a launch rehearsal test on January 27, 1967. All three crew members died in what became simply known as 'the Fire'. The "most probable cause" was a combination of an electrical arc between two portions of exposed wire and fumes of glycol cooling fluid coming from a leak in aluminum tubing taking a 90-degree turn just below the cable. The wires likely got exposed by a metal door repeatedly scraping against a cable, and the leak in the aluminum tube was assumed to be the result of "creep" from stress at remote points in the system. The creep was the result of the spacecraft constantly being worked on, causing things to get bumped around. The cable was not originally intended to cross the tubing near its turn. Nor was it to lie quite as close to it as it did. But there had been thousands of changes since the plan had been drawn, and as a consequence many cables were in different positions from the ones thought out at the design tables. Was this all within the norm and to be expected building complex machinery, or was it poor performance on part of North American? As it was it took eighteen seconds from the sudden rise in the senior pilot's pulse (realising there was a serious problem) to the final scream on the communication tape and subsequent explosion. Then the search was on and the disassembly of the burned spacecraft began. It was the start of an investigation remembered by many as the most intense single effort of the whole Apollo Program. Through it all, the North American engineers kept saying to themselves "please don't let it be my system, please let my system be clear, please let it be someone else's responsibility". During the investigation North American quickly came under scrutiny. The tangle of wiring in the spacecraft was described as "a scattering of match heads waiting for something to scratch them." Detailed inspections of a twin CSM — an identical spacecraft which had arrived at the Cape two weeks before the fire — resulted in the discovery of up to thirty skinned wires. The Cape's chief inspector for the spacecraft had a look at the twin CSM for himself. "The more I looked, the worse it looked. The wires weren't routed neat, they were crisscrossed in a junky way." He stated that the "workmanship is not the best" and that there were "just too many problems". The verdict was simply. The spacecraft wasn't able to fly that way. North American's performance was simply not up to the Apollo Program's standards. The chief inspector, who had been bothered for some time by the evidence of North American's people pushing too hard, wanted to return the module to the factory. This caused a flurry of visits by senior managers to this second CSM followed, among them Joe Shea. The chief inspector remembered Joe Shea to have tears in his eyes as he left. A more thorough inspection followed and eventually revealed 1407 errors. But the second CSM was not returned. It would have been tantamount to killing the North American contract and cause a delay of at least two years. It would have put the Apollo Program itself in jeopardy. Instead of killing the contract an effort began to change North American's culture, beginning with the forced retirement of the head of North American's Space Division (who maintained that there was "not a goddamn thing wrong with those spacecraft"). This effort was intensive and ultimately successful (and will be discussed later). Fifteen spacecraft were launched and functioned in space for a total of 280 days, returning all astronauts safely. The investigation

may not have singled out anyone in particular to be responsible for the Fire, but the aftermath wasn't without its victims. Whereas North American saw no reason to accept responsibility, Joe Shea did. Joe Shea was one of the victims of the Fire's aftermath. He left NASA in July 1967, six months after the tragedy. Years later the question was put to him: What then was the mistake for which you wouldn't forgive yourself? "For me, it isn't as simple as 'the mistake' — it goes back to a concept that when you are responsible for a project there are no shades of gray. You may not know every detail, but you should construct an environment where nothing can fall through the cracks."
Source: [2]

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