

CANSO Acquisition Excellence Manual

Acknowledgements

This publication was produced by the Acquisition Excellence Workgroup of the CANSO Strategy and Integration Standing Committee. CANSO would like to thank the following main contributors to this manual who have provided considerable material and experiences to bring this to life:

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Executive Summary

Each year air navigation service providers (ANSPs) spend significant sums of money to procure air traffic management (ATM) equipment and services, in order to fulfill their mandates and provide the best possible service to their customers.

Buyers and sellers both experience enormous challenges in doing business in the air traffic management sector. Reasons for this include government involvement, extended investment periods and long project times with the clear need to meet the high standards of safety assurance. It is difficult to break established mindsets, secure funding and introduce a new solution.

Acquisition Excellence is an essential guide that will prepare ATM for potentially seismic shifts in business and purchasing models. The publication is for CANSO Full and Associate Members, ATM's buyers and sellers, and aims to break down the walls of this impasse by providing an insight into best practices in acquisition from both sides of the process.

CANSO's Associate Members, typically the sellers in this scenario, will be able to better understand ANSP thinking and also their requirements in the purchasing process. CANSO's Full Members, the ANSPs, will be able to improve their buying skills.

The purchasing environment of air traffic management is also changing more rapidly than in the past. The introduction of remote air traffic control towers, cloud-based services, data-driven information, cyber attacks and the consolidation of the supply base are but a few examples of triggers which have forced ANSPs to adapt to a changing landscape and consider new procurement approaches. To maximise the value from purchasing in this changing environment, ANSPs' purchasing organisations now need to embrace a tailored, focused and flexible approach to acquisition needs.

Benefits to Members

Acquisition excellence is important for any organisation that wants to ensure it achieves the most from its procurement budget and supply chain relationships.

Acquisition excellence requires a strategic approach to procurement activities and supplier relationships to deliver better value. This results in improved sourcing, increased leverage, opportunities to standardise, economies of scale, better risk management and improved overall timescales by avoiding delays from uncertainty and conflict.

Focusing on effective relationships with suppliers ensures greater consistency and more constructive dialogue to resolve issues, avoid risk, share information, continually improve, foster innovation and create value.

Robust procurement processes ensure probity. They assure suppliers that they will have a fair opportunity when bidding and be subject to fair and equitable treatment in overall commercial dealings.

Advanced relationships and collaboration can mean working together on new concepts and developing offerings that are relevant to other ATM providers.

Investment across the sector then has the potential to be of benefit to multiple organisations, to the ultimate advantage of air traffic users and airline passengers.

CANSO has solicited and collected best practices in acquisition management from within the ATM industry to create Acquisition Excellence.

How to Use this Manual

This manual has been designed with real-time practical application in mind. The content's main drivers include: cost effectiveness, continuous improvement, corporate strategic alignment, operational efficiency and engagement both with internal stakeholders and between buyers and sellers. A review and adoption of appropriate models and practices described within this manual can enhance, compliment or ultimately change processes within organisations striving to reach acquisition excellence.

CANSO has curated a series of case studies and where appropriate "how to" guides which draw from the experience and expertise of CANSO Members, and provide guidance as to how these cases can be applied within organisations regardless of corporate structure.

A review of acquisition models, from the Standard Acquisition Process (see Page 9) to new service delivery models described in the subsequent case studies, demonstrates how different models serve different purposes and how flexibility in application is important to leverage the outcomes needed.

The Manual highlights supplier partnership relationships as a more mature form of acquisition management and can be used to target continuous improvement within your organisation.

There is an analysis of stakeholder management and requirements management to demonstrate how mismanagement in these areas can quickly derail an acquisition and erode the business benefits.

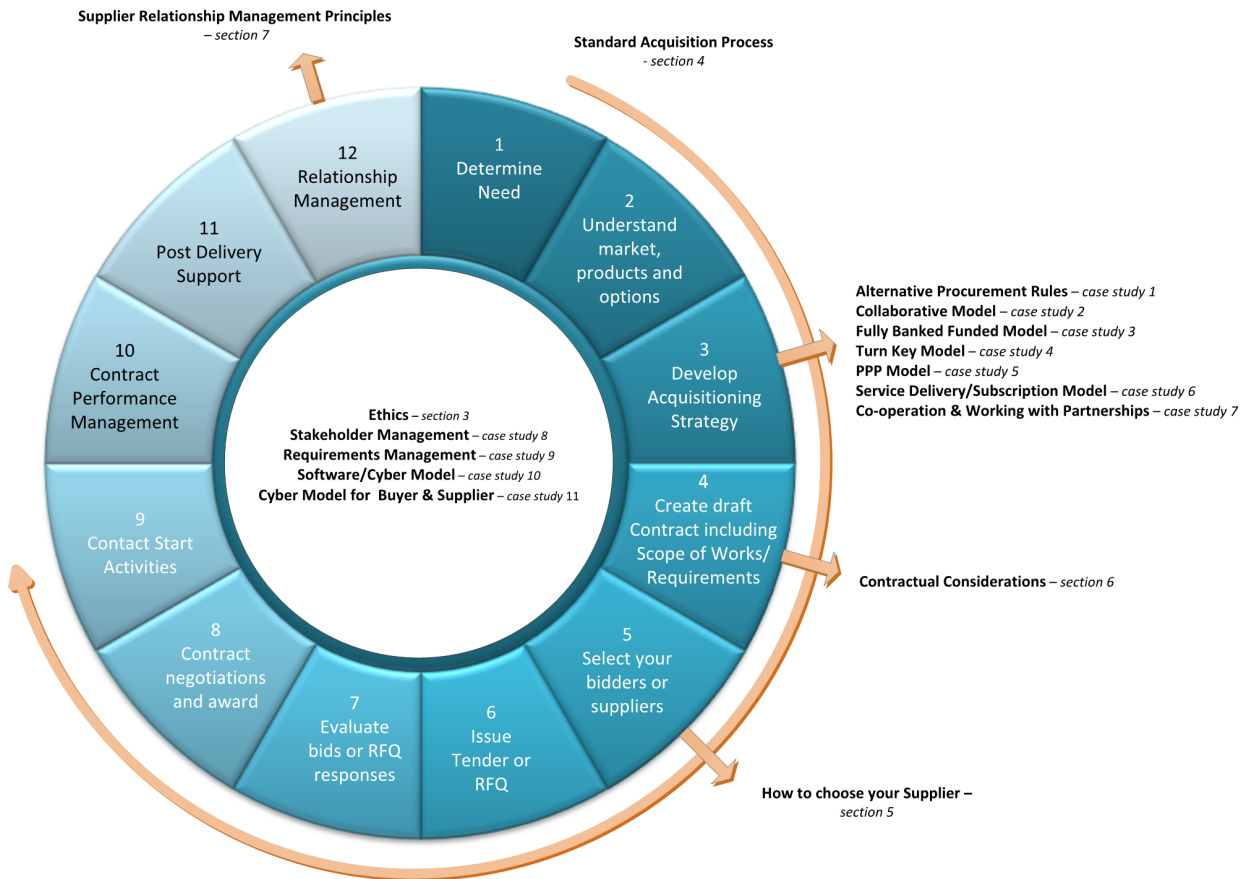
The Manual reviews cyber security risks, as procurement organisations can and should play a key role in mitigating risk in this area.

In all purchases, big or small, choosing the right supplier is essential to help ensure the success of the procurement. There is a section dedicated to this subject to help the reader maximise those successes.

Finally, there is a more in-depth look at the many different elements of a contract, which helps to provide insight to what the supplier and the buyer will be taking into consideration.

This total acquisition lifecycle and all its various components are represented on the next page in pictorial form:

ACQUISITION LIFE-CYCLE



Ethics

Before exploring purchasing mechanisms and case studies, it is imperative to highlight the foundation of all good acquisition processes; that is the ethical behavior of individuals and organisations when procuring goods and services.

The process of acquisition must be conducted in an ethical manner. To do otherwise undermines the very safety of the services ANSPs are mandated to provide.

Generally, ethical behavior mandates individuals to practice integrity, avoid conflicts of interest and personal enrichment, treat suppliers equally and fairly, and comply with legal and other obligations. Also, it is important to note that even the appearance of unethical behavior can be construed as being tantamount to the behaviour itself.

Best practice is for ANSPs to have a published and communicated code of conduct for all employees, with a specific section dedicated to the acquisition process. This section should define and address the following:

1. Conflict of interests
2. Gratuities from suppliers
3. The fair and equal treatment of suppliers
4. Confidentiality
5. Compliance with regulations/laws/policies
6. Perceived impropriety

For example, conflict of interests can include conducting business outside the organisation, or employment by an outside organisation, which may encroach upon the acquisition professional's primary responsibility of loyalty to the organisation. There are many aspects to conflicts and perceived conflicts, which should be defined within the context of the organisation. The consequences of ethical violations can be far reaching, including dismissal and legal action. Also, many jurisdictions' ethics laws apply outside the country where an employee resides, meaning an ethical act committed in another country may be illegal within the country of the employee.

The code should define what is acceptable and what is unacceptable in terms of receiving benefits from suppliers. Trips, dinners, sporting events should all be addressed within the document.

When addressing conflict of interests and improper gratuities, the code should explain that the perception of impropriety also violates the code.

Transparency is also a key requirement to ethical behavior within the procurement process, which contributes to the fair and equitable treatment of suppliers and ensures the information provided by all the parties involved is properly protected.

The requirements of ethical behavior should be communicated throughout the organisations. Individual accountability can be enhanced by requiring individuals to sign and acknowledge the organisation's code of conduct. The code should be provided to all sellers participating in the procurement and briefed at the first opportunity. A mechanism to anonymously report suspected violations should be provided.

These standards of ethical behaviour are not solely the responsibility of the buyer and should also be practiced and upheld by individuals and organisations involved in selling.

The Standard Acquisition Process

To effectively purchase common or standard goods and services in a controlled business environment (or an ISO 9001 accredited business), a number of standard processes or procedures need to be in place. There are three essential prerequisites to any acquisition:

- A demand (requirement)
- The authority to purchase
- A supplier

Other considerations are terms and conditions, availability of resources to meet the requirement, best value for money, currency, standard costs, and incoterms (see definition below), which will be explored in greater detail below.

At the onset of any acquisition, it is sound practice to segregate the core acquisition duties into four different areas of the procurement process:

- The demand
- Provision of funding/approval of finance
- The purchase
- Receipt of purchase

This will help avoid potential conflicts of interest or fraud by not having one person or unit responsible for ordering, receiving and paying for goods.

Process Requirements

1. The Demand (Requirement) for Products or Services

The first prerequisite of any acquisition is the need for a demand (requirement) from a business or department. Different organisations may have different notification and approval processes, but the common best practice is to have a way to verify that the generator of the demand has the appropriate authority to request the goods or services, and the requisite budget. This can be done by way of an internal request for purchase (RFP), which is signed by the business unit or department, and acknowledged by the budget holder.

a. The Request for Quotation (RFQ) or the Request for Information

A common practice to commence an acquisition process is an RFQ process. An RFQ will provide a purchaser with initial knowledge from suppliers as to costs, lead times and availability of supply, for example. An RFQ should contain:

- Contact details of the buyer (to whom the quote is to be returned)
- The due date for the quote's submission to the buyer
- The description of the goods or services in enough detail that the person who is making the purchase understands what they are ordering. If it has a supplier part number then this should be noted (Supplier part numbers should be used with caution as the data sheets normally contain a clause which allows the supplier to change the specification of the part number at any time without notifying customers which have previously purchased it).
- In some instances, a requirement specification or purchasing specification may be required (see definitions below)
- The quantity required
- The payment terms proposed
- Shipping details – e.g. packing requirements and incoterms
- The RFQ should stipulate the buyer's terms and conditions.

The supplier should send the quotation back referring to the RFQ, and provide the following information:

- The price
- The lead time required
- Any minimum order of quantities
- The validity period of the quote
- Shipping costs (if not already included in the price)
- Country of origin
- Customs tariff code (if applicable)

- Any International Traffic in Arms Regulations (ITAR) or Export Administration Regulations (EAR) licensable requirements (These are two important United States export control laws that affect the manufacturing, sales and distribution of technology).
- Confirmation of agreement, or otherwise, to the buyer's terms and conditions.

b. Request for Requisition or Purchase (RFP)

A RFP is a form or an electronic request to purchase goods or services, and can be used for direct production purchases (the same as a material requirements planning (MRP) requirement) or indirect purchases for the business ranging from marketing activities to items for building maintenance. Sensitive items such as labour contracts, or recruitment activities are not normally covered by this process and would be addressed by a human resources (HR) procedure.

The RFP should contain the following information:

- The date the request is submitted
- The description of the goods or services in enough detail that the buyer understands what they are ordering. If it has a supplier part number then this should be noted. (As noted earlier, supplier part numbers should be used with caution as the data sheets normally contain a clause which allows the supplier to change the specification of the part number at any time without notifying customers which have previously purchased it.)
- In some instances, a specification or purchasing/ technical specification may be required (see definitions below)
- The quantity required
- The date required
- The cost

- The cost centre to which the product or service will be costed (the budget holder should only be authorising purchases for cost centres for which they are accountable and responsible)
- It should be authorised by the budget holder by way of a signature, an electronic signature or an electronic authorisation system
- The quotation obtained from a supplier may be attached.

Most companies will also use the RFP to capture other data such as employment safety and security, cyber risks, insurance certificates and business continuity of the proposed suppliers.

c. Material Requirements Planning (MRP) Demand

An MRP-generated demand is a list of parts required to fulfill a production build, (when an MRP system is in place and is effective it helps reduce material waste while also avoiding shortages of parts needed) which is slightly different from a RFP. An RFP can be used for both direct production purchases and indirect purchases, whereas an MRP-generated demand can only be used for direct production.

2. The Authority to Purchase – The Role and the Financial Limit

The authority to make purchases within an organisation, usually resides within the procurement function (if the organisation is large enough). If the organisation is not large, this function may fall to many different departments and/or individuals.

The authority required to make purchases on behalf of the business demands that:

- There is a need for a demand or a business need for the good or service
- The person or persons placing the purchase order should have the authority by nature of their function (e.g. a buyer) or delegated authority if it is not their day-to-day function. Depending on the order (i.e. a capital purchase, consultancy, specialist services, etc.) the purchase may fall to different individuals within an organisation, such as an expert in that particular field

- The value of the order; some organisations have different levels of buyers depending on the value.

A business should publish guidelines specifying the level of authority for each job role. This can be documented in both job descriptions and a limits of authority/declaration of authority document.

3. A Supplier - Approving and Monitoring

Purchases should always be made from an approved supplier. An approved supplier is one that has been assessed either by a questionnaire or an audit depending on the value/criticality of the part to the business. An example of criticality to the business would be a sole source part that cannot be purchased anywhere else. The supplier should be confirmed as satisfactory before use.

The different areas of supplier assessment should be:

- Capability – technical and production
- Quality
- Cost
- Delivery (schedule)
- Capacity – technical and production
- Financial stability (including the use of a third party assessment agency, such as Experian or Dun and Bradstreet)
- Past performance (with buying organisation or reference from other customers)
- Schedule to requirement.

To approve a supplier, and to prevent fraud within the procurement process, as well as having the segregation of duties noted above, there should also be a three-way functional check to approve a supplier by:

- Procurement
- Business unit requiring the good or service
- Accounts payable.

Each function should approve the supplier separately ensuring that it is a genuine business, of the right quality, capability, and cost, and payment terms meet the business requirements.

Once approved, relevant parties (such as purchasing, quality, engineering if applicable, and programmes if applicable) should monitor the supplier's performance against the above criteria quarterly, and update their records accordingly.

Making the Purchase

From the quotations received from the suppliers, the buyer or authorised person can benchmark each supplier and ascertain which supplier is the best choice for the business, whether it is based on the lowest cost, or the lowest lead time, or perceived performance of the goods or services, or a combination of these factors, to determine overall value for money.

Once the supplier is selected, the buyer will raise a formal purchase order, including the information stipulated in the RFQ, and the costs and delivery lead time from the supplier's quotation.

Other additional information may be referred to within the standard purchase order template, for example:

- Any relevant requirements, directives or legislation
- Delivery requirements (such as times of the day when deliveries are permitted, not to exceed weights or dimensions, if access or off-loading equipment is limited)
- The right to audit or verify the product at the supplier's premises by the buyer or the end user at any time
- Any applicable standards that the buyer requires the seller to work to such as ISO: 90001
- The seller's quotation (however please note that in referring to it on the purchase order, if the terms and conditions of purchase have not been formally agreed between both parties, the quotation from the seller will stipulate its terms and conditions)
- Any further special terms and conditions applicable to the purchase that is being made.

Finally, the purchase order should be revision controlled to provide an audit trail of any amendments, and the purchase order should stipulate that if it has been revised or amended, it supersedes all previous versions.

- The amount of time taken by the stores personnel issuing the stock to the line/cost centre
- The amount of time taken by the purchase ledger clerk paying for the goods.

The Battle of the Forms – Offer, Counter Offer and Acceptance

The buyer and seller should both be aware of what constitutes an offer, and acceptance of a contract. Also, buyer and seller should be aware of what constitutes a counter offer and acceptance, in a silent capacity; meaning in a capacity where a party is neither accepting nor rejecting terms, but behaving in a way that implies acceptance (i.e. not formally rejecting the terms, but receiving and accepting the goods into the business).

Terms and conditions come in the following forms:

- RFQ – stipulates the buyer's terms and conditions
- Supplier quotation – offers to sell under the seller's terms and conditions
- The purchase order – offers to buy on the buyer's terms and conditions
- The supplier's order acknowledgement – stipulates the seller's terms and conditions.

Other Areas to Consider When Making a Purchase

1. Transaction Costs

Raising a purchase order incurs cost to the business in the following areas:

- The amount of time taken by the budget holder raising the RFP
- The amount of time taken by the buyer raising the RFQ
- The amount of time taken by the buyer raising the purchase order
- The amount of time taken by the goods inwards personnel booking receipting the order onto the MRP/ERP system

Depending on the requirements, there are a number of considerations, as to which is the most efficient type of purchase order to raise, keeping time to a minimum and costs to a minimum.

The types of purchase orders are as follows:

- **Discrete purchase order** – used when making irregular or one-off purchases.
- **Call off order/blanket order** – this is a purchase order for a number of items that will have multiple delivery dates against each item (the order is released as an annual quantity and then smaller quantities called in when required) taking advantage of volume pricing. These purchase orders have a fixed contract end date. If you have regular requirements for a repeat purchase, this can be a very cost effective method of purchasing; however they need intermittent monitoring as the stock depletes with each call off.
- **Supply chain agreement** – These agreements have a fixed liability of stock underwritten, but are automatically 'topped up' when a delivery has been fulfilled (unlike the call off order which has a fixed quantity that depletes after each call off); therefore a notice period of termination is required. Once in place, they may operate for a year or years with the only action being the calling in of a quantity for delivery. Less monitoring is required than the call off as the stock does not deplete, but gets topped back up to the agreed levels.
- **Purchasing card** – this is procurement using a company credit card which will have no specific terms and conditions/specifications and has a limited audit trail of what has been supplied. It is generally used for one-off indirect purchases, and should not be used for any items for production because of the lack of audit trail.

2. Terms and Conditions of Purchase

These are the terms and conditions / agreement for the purchase being made. They are shown on

the reverse of the purchase order, or wording on the purchase order stipulates 'a copy is available upon request'.

The terms and conditions should cover the following areas as a minimum:

- The basis of the purchase
- Specifications and intellectual property (IP)
- The seller's obligation
- Terms of payment
- Delivery
- Risk and transfer of title
- Warranties and liabilities

Special attention should be given to payment terms, IP, risk and title, and warranty as, in some instances, misunderstanding of these terms may cause significant repercussions to the business, whether that is cost, timescales or future liabilities.

3. International Commercial Terms (Incoterms)

Incoterms are published by the International Chamber of Commerce (ICC) and are widely used, international pre-defined commercial terms that relate just to the transportation element of the purchase. The incoterms rules are intended to clearly articulate the tasks, costs and risks associated with the transportation of goods, from the seller to the buyer.

However incoterms do not cover where the title transfers, the price payable at this point, the currency, or the credit terms. These points should be covered in the terms and conditions of purchase. Incoterms are updated regularly and so when referring to them on the purchase order, or in terms and conditions of purchase or sale, they should reference the year they were issued.

4. Currency

When purchasing in different currencies, if the currency is volatile, and if the lead-time of the product you are purchasing is long, there is a potential risk of the currency exchange rate changing significantly before you pay for the goods.

In these instances, consideration should be made to purchasing an alternative product from the domestic market or a country with a stable exchange rate, or hedging the currency.

Case Studies

Foreword

To demonstrate real-life applications of acquisition excellence, this section provides a number of scenarios, which highlight the areas to consider, pitfalls to avoid and opportunities to grasp, using examples of a number of different models for acquisition.

Each situation and model represents a different set of circumstances and a unique situation or challenge and is based on real-life situations. Collectively they show that a range of different models, and aspects within those models, can be applied to help ANSPs procure more effectively.

Examples include:

- Bank funds which not only offer the cash injection to accelerate deployment, but also greater flexibility in how procurements are conducted
- Collaborative models show how better procurement can be achieved by working with other partners to reduce costs and increase negotiating power
- For smaller ANSPs we have shown how turn-key models give greater responsibility to suppliers in the deployment phase
- A look at how stakeholder management and requirements management are applied
- A look into the world of cyber for both the supplier and buyer.

The aim is to provide lessons learned to help CANSO Members that might face similar situations in the future and to help them strive towards acquisition excellence.

Case Study 1 – Alternative Procurement Rules

Introduction

The ANSP, as a publicly owned entity, was obliged to follow national law that would only allow it to select the cheapest bidder. The ANSP required more flexibility in order to consider other factors, such as the quality of the various solutions required.

The Problem Statement

The ANSP required several new communications/navigation/surveillance (CNS)/ATM systems. The main issue facing the ANSP was the limitations associated with the national public procurement law which forced the ANSP to award the contract to the lowest bidder, without taking the quality of the tender into account. Other important points were:

- a. The strict requirement to use only the submitted tender for evaluation, without the possibility of additional clarifications and supplementary documentations
- b. The use of one single open tender procedure without the possibility to negotiate
- c. That making changes to existing contracts was prohibited after the award of the contract

The Solution

One solution to this problem is to use or partly use a loan from a financial institution such as an institutional bank. This enabled the ANSP to use the bank's procurement rules instead of the local law. Although these rules meant that different types of restrictions had to be applied to the procedure, they were much more adapted to the ANSP's needs. Above all, it enabled the ANSP to use the most economically advantageous tender as the sole award criterion, combining quality and price.

The bank's procurement procedures also had clarification stages built into its processes and allowed for modification to contracts under certain circumstances. The approach meant that the bank required updates on all stages of the project through development and implementation. This resulted in some additional work for the ANSP, but also enabled it to use the bank and the bank's appointed experts to support it in difficult phases of implementation.

Tender Preparation

The tender preparation was based on a detailed market study, undertaken during the due diligence by the bank and before the loan was granted. The technical specifications were prepared by the ANSP with support from the bank's technical experts. Under the bank's procurement rules, it was important to keep the tender as open as possible to allow for new entrants. This was challenging to achieve in an industry with relatively few suppliers, so it was necessary to strike a balance between the detail included in the specification to ensure the offers made would reflect the ANSP's needs, and the need to keep them generic and open enough to attract the widest market.

For most systems, it is generally good practice to minimise the number of requirements in the technical specifications, as far as possible. A number of standards have been established for typical systems in ATM, such as those produced by the European Organisation for Civil Aviation Equipment (EUROCAE) for Europe and RTCA for the US. In the technical specifications, compliance to the standard is set as a requirement where possible and in this way the total number of specifications can be greatly reduced while still ensuring that the required compliance will be achieved.

Evaluation

Under the bank's rules, the evaluation criteria and process is clear from the start and the bank provides template documents to follow. The evaluation is split into three parts:

- a. Qualification criteria: all tenderers must meet a number of predefined legal and financial criteria ensuring that they can deliver the work.
- b. Qualitative evaluation: the tenders have to comply with all the mandatory requirements and will be rejected if they fail any of them. Desirable requirements are not mandatory and the tenders will still be considered if they do not comply with one or more of these requirements. However it will have an impact on the tender evaluation.
- c. Financial evaluation: the final evaluation is based on the tender price. However the price is adjusted for deviations from the desirable requirements using pre-defined formulae. A maximum adjusted price can then be specified as rejection criteria, as well as a maximum number of failed desirable requirements.

Contract Negotiation

Contractual negotiations were limited and aimed to ensure that the tender met the ANSP's requirements. However, had negotiations been required, the bank would have defined a two-stage tender procedure that could allow changes to the technical specifications in the second stage.

Delivery

The delivery and associated procedures were defined within the tender specification. In some cases, the ANSP required the bank to submit detailed programme management plans as part of the submitted tender or to be developed after contract award in close collaboration with the ANSP.

Implementation

The training and end-user acceptance criteria were usually defined in the first phase of the contract, alongside the system design. The ANSP was in all cases strongly involved in these.

Post Implementation

Most projects financed by the loan were delivered on time and to the satisfaction of the ANSP. For various reasons unrelated to the procurement procedures, some of the projects were delayed. However, the bank allowed for an extension of the drawdown period, to allow more time to finalise interdependent projects and ensure that the full loan amount was used.

How to Follow This Model

To make the best use of a loan from a financial institution, an ANSP needs to undertake the following steps:

- **Development of the project:** a clear understanding of what the financing is required for, as well as a detailed view of the expected budget and timescales needs to form the basis of any loan application.
- **Review of the available loans and their eligibility requirements:** the ANSP needs to review the available loans from the different banks in detail, to ensure that the ANSP and project meet all eligibility requirements. Most institutional banks provide guidelines, interactive tools and advisors to support their clients with this.
- In addition, the available loans must be aligned with the needs of the project. This should include:
 - a. Overall project aim
 - b. Evaluation criteria
 - c. Reporting needs
 - d. Budget
 - e. Timelines
- The last point is important, as successfully applying for a loan can take a significant amount of time. This needs to be planned into the project at the start.
- **Loan application:** once a suitable loan has been identified, the ANSP can follow the application process according to the bank's procedures. It usually consists of the following steps:
 - a. Initial enquiry (ANSP)
 - b. Upon receipt of a positive review, this will be followed by a full application including the project description and context (ANSP)
 - c. Due diligence assessment of the project (bank, usually supported through direct input by the ANSP)
 - d. Project approval (bank)
 - e. Loan negotiations (ANSP and bank)
 - f. Final approval and signing (ANSP and bank)

Case Study 2 – Fully Bank-Funded Model

Introduction

This model is very similar to Case Study 1, but in this case the bank-funded loan is purely about accelerating ANSP investment that would otherwise have been unaffordable.

The Problem Statement

The difficulty in this case was that the relatively small ANSP with limited revenue was forecasting high traffic growth and so needed to upgrade its systems to be able to cope with it. The ANSP's cash flow was insufficient to invest in the required upgrades.

The Solution

The use of a bank loan enabled the ANSP invest in the required systems when it needed it most. This allowed the ANSP to provide services to cater for the growing traffic. Using a loan enabled the ANSP to:

- Spread the cost of the investments over a longer time period
- Shift the cost to a later period where revenue was expected to have increased
- Free up available funds for more urgent investments, introducing flexibility

As the acquisition involved the use of the bank's procurement rules, the other aspects are as provided in Case Study 1.

Case Study 3 – Collaboration Model

Introduction

The ANSP decided to join a procurement collaboration, in which a number of ANSPs work together to negotiate with a single supplier.

The Problem Statement

This ANSP faced the need to upgrade its ATC system and was looking for ways to achieve maximum cost-efficiency. The ANSP had already worked successfully with one supplier and had invested a lot of money to implement its old system and train its staff on it. Although it needed to upgrade its system, it wanted to capitalise on its relationship with the supplier and keep additional costs and risks associated with implementing a new system as low as possible.

The Solution

The ANSP decided to join a procurement collaboration, under which a number of ANSPs work together to negotiate with a single supplier. The benefits of joining the collaboration were:

- a. The sharing of development costs between the partner ANSPs
- b. Reduced integration and deployment costs once a harmonised platform was established for the systems procured by each ANSP partner
- c. Shared maintenance costs and secondary benefits such as harmonised training procedures and harmonised regulatory approach, all of which tend to reduce the cost of deploying and operating the system
- d. A greater negotiating power with supplier

The approach had the added benefit that the collaboration was using the supplier with which the ANSP was already working, thus providing a smooth transition, further reducing costs and minimising risk and effort.

Preparation

Going into a collaboration meant that the ANSP used a single tender action with its current supplier. In practice, the ANSP had to join into a framework agreement with the other partner ANSPs and the supplier. Under that agreement, orders were then agreed and called off. All the partners developed the requirements in collaboration.

In this case, the partners had already developed a system and implementation had started. This greatly facilitated the work for the ANSP, as it needed only to adapt the requirements to its particular needs.

Evaluation

The collaborative model did not use evaluation criteria as the collaboration included the supplier.

Contract Negotiation

In this case, the collaboration had already been in place between a number of ANSPs and the framework and contractual arrangements had previously been agreed between them. In order to join, the ANSP had to agree to these terms. The terms were favourable as the grouping of ANSPs meant that they had greater negotiating power and more leverage compared to a single ANSP.

Delivery

The delivery was agreed under each order and benefitted from collaboration, particularly due to the lessons learned and shared by other partners.

Implementation

Training was also supported by the collaboration, as it was possible to train staff and test on systems that were already deployed at one of the partner's locations. The lessons learned for other deployments also helped for end-user acceptance.

Post implementation

The likelihood of successful implementation increased. In addition, maintenance and continued update costs were shared between all partners, providing the real value of the collaborative approach to the ANSP.

How to Follow This Model

Joining or forming a collaboration with other ANSPs is a major step. Although there are different models for such a collaboration, they will always entail commitments on the part of the ANSP, as well as a loss of flexibility and other associated risks. Therefore, for this particular solution the ANSP needs to be sure that joining a collaboration will be in good alignment with the ANSP's business ambitions as a whole.

It is therefore recommended to undertake the following steps:

- Development of the project: a clear understanding of the upgrade needs and associated technological, operational changes forms the baseline for the decision to join a collaboration.
- Options definition: different options to undertake the systems upgrade need to be identified and clearly defined, including some options other than establishing a collaborative arrangement. These could include:
 - a. Upgrading using an open tender approach
 - b. Forming a simple buying club
 - c. Forming a collaboration with shared governance
 - d. Joining an already existing collaboration
- Preparation of a full business case: this should include assessing advantages, financial benefits and disadvantages for all options to ensure a justification for joining the model is provided.
- Agreements with potential partners: forming or joining a collaboration necessitates negotiation with potential partners. Ideally, discussions with these should be started early in the process to inform the options definition and business case. Final agreements will, however, be concluded based on the business case.

Case Study 4 – Turn-Key Model

Introduction

A small and privatised airport-based ANSP conducts a turn-key procurement to ensure the supplier is able to take on integration and implementation elements for which the ANSP does not have the expertise or resources.

The Problem Statement

A privatised airport-based ANSP sought to procure CNS/ATM equipment (an electronic flight progress system and an advanced surface movement guidance and control system including an updated surface movement radar and multilateration) as part of a wider EU Innovation and Networks Executive Agency-funded project to implement airport collaborative decision-making (A-CDM).

The ANSP was interested in a particular system it had used at a previous airport, but was not aware of the systems available on the market and their capabilities, nor how these systems could be implemented/integrated with the current airports systems. In addition, the customer ran a lean operating model and did not have suitable spare resource to manage the project.

The Solution

The ANSP requested a “turn-key” approach with the successful tenderer taking the risk by providing for a fixed cost, the design, implementation, testing, training and certification of the system.

Preparation

Due to limited knowledge of the market and what was desirable, the ANSP developed a restricted, negotiated procedure. In its initial phase, the pre-qualification documents aimed to gather information on the systems available on the market and how they could be adapted to suit the local airport environment.

The ANSP issued a pre-qualification document to provide an initial overview of the airport’s high-level requirements and request information from

potential suppliers through several questions designed to understand the systems available and their adaptability.

At this stage, the ANSP checked the financial, business and professional standings. An assessment, by two independent assessors, compared the compatibility of responses to the high-level concept using a scoring and ranking system.

Evaluation

By understanding the available systems on the market, the ANSP’s requirements were further refined to develop the tender documentation. Even after refinement, some requirements were still quite generic and so tenderers were invited to the airport for interviews.

The ANSP collected responses to a number of questions which were again assessed using two independent assessors scoring the responses between 1 and 4. Each marker had another independent moderator who assessed the scores provided by the assessor. The assessors recorded all marks and rationale in separate assessment sheets with the marks collated at the end of the assessment.

The ANSP and the assessors discussed and moderated significant differences. They ranked responses and invited the top three suppliers to negotiate.

Contract Negotiation

The negotiations involved on-site meetings at the airport where the submitted tenders were reviewed with the airport requesting adaptations to suit the specific needs of the airport. This included both technical and financial negotiations.

The ANSP asked the tenderers to adapt their proposals and re-submit their documentation following each round of negotiation with the same assessment process applied.

Three stages of negotiation took place with the initial phases focusing on the adaptation of the system with the later sessions concentrating on the turn-key aspects. These stages were mostly required due to both similarities and differences between the proposals and the airport's desired system.

Once a single proposal met the needs of the airport, the ANSP halted the procurement and began final contract negotiations. However, this involved compromise between the ANSP's original requirements and the supplier's proposal in order to meet the delivery deadline.

Delivery

The final outcome was on-time and on-schedule delivery, with good support from the supplier. The ANSP was offered a trial system very soon after the contract signature for familiarisation and in order to develop customisations that could be included in the final system.

Implementation

The supplier managed and performed testing phases, with oversight by the ANSP. Key customer staff were sent on 'train the trainer' courses to enable the customer to flow down these training aspects throughout the ANSP (e.g. individual operators).

How to Follow This Model

A turn-key solution may require the contractor to take on more risk than other models. It also means an extended procurement timescale as the contract does not end with site acceptance, but with entry into operations. Achieving this requires the following:

- The supplier may need to provide operational experts alongside technical experts to support training and entry into operations. Checking the supplier's experience in, and approach to a transition to, operations is critical. For example, the ANSP should consider the relative importance between system functionality and the ability to implement it ready for operations.
- A pre-qualification could be a valuable way to gather information, not only on the financial, business and professional standings of potential suppliers, but on the ability of the market to provide full end-to-end service. By expanding the procurement to a turn-key service, a client might be excluding those who have very capable solutions but insufficient expertise to transition to operations.
- A multi-stage procurement including interviews can be helpful to better determine the supplier's fit with the local and cultural aspects of a transition to operations (a more complex process than simply building and transferring the asset). A dedicated stage concentrating on turn-key aspects may be useful.
- Providing the client with a trial/prototype system soon after contract signature can be a useful way to build familiarity, operational experience and confidence in the system that can make the transition to the final system easier.
- Testing phases will require oversight and input from the client. Internal champions and trainers can be a helpful way of building internal buy-in to ease transition.

Case Study 5 – Public Private Partnership Model – Airport Concession

Introduction

One of the major challenges facing ANSPs and airports is the replacement of failing ATM infrastructure, such as surveillance or communications systems. Simply replacing infrastructure on a like for like basis is often no longer sufficient as demand for capacity continues to rise, therefore requiring new, more capable systems. ANSPs and airports must look not only to replace, but expand and modernise infrastructure to meet tomorrow's needs. Modernising infrastructure requires large investment with returns that are not immediately realisable. The following case study will explore how ANSPs and airports can jointly invest to lighten the burden for each participant while realising maximum value.

The Problem Statement

A State airport operator was running an airport, which needed investment to cope with high traffic growth. The airport was facing a situation where the required capital development projects and investment profiles were large, front-loaded, repetitive and expected to span many decades.

The Solution

The State airport operator opted for a public private partnership (PPP) model. The operation of the airport was transferred to a private entity in a form of a long-term concession (25 years). However, the State airport operator retained 49 per cent of the overall equity. This enabled the operator to provide the private sector with guarantees to face risks as well as retain a direct role in the project.

The responsibility for investment, construction and further development of the airport was transferred to the private sector, thus unlocking investment capital as well as driving innovation.

Preparation

The operator analysed the strategic needs of the airport and due to its financial viability and potential revenue, chose a build-operate-transfer (BOT) model. Using the BOT model enabled the State airport operator to remain the owner of the assets but the private entity to be in charge of investments, which were transferred back to the State operator at the end of the concession period.

The private entity bore both operating and financing risks, paid a concession fee and was remunerated from the airport revenues. A fixed proportion of the revenue was paid to the State operator in addition to the annual fixed fee. The transfer back to the State operator at the end of the concession period allowed for competition for the market rather than tendered to a single supplier only.

Investment for the airport was set at a fixed amount but depended on peak-hour-passenger numbers and the investment was triggered when a certain level was reached. This ensured that the airport did not suffer from bottlenecks, but limited unnecessary investment. Financial penalties were also applied for non-compliance with service standards.

The operator set up a five-year periodic review as part of the PPP model, including a price cap based on efficiency, savings and quality.

Evaluation

The operator chose an open bidding process to select the concessionaire, via a two-stage process.

1. The three highest sealed bids were selected in a first round (above a minimum bidding price). To participate, the bidders needed to meet a number of predefined criteria, based on consortium structure and experience.
2. A verbal auction process was then used in a second stage, with the highest bid winning the concession.

Contract Negotiation

The negotiations mostly addressed the inclusion of the State operator in the consortium. The operator had already set up the structure and details of the concession arrangement.

Delivery and Implementation

The concession is ongoing but investments have already started and are expected to continue under the original agreement.

How to Follow This Model

Setting up a PPP requires the following four steps:

1. **Set the framework:** A stable legal framework, transparent performance framework and a well-defined strategy are key to attract bidders. This consists of adopting legal provisions, establishing or identifying regulatory authorities and defining a strategy.
2. **Design a model:** The PPP model that is used has to match the organisation's objectives and capture the specifics of the project including:
 - a. Identifying the contracting parties
 - b. Deciding the type of PPP, which can range from a pure management contract to a concession, but can be a combination of the following as well:

	Management contract	Lease	Concession
Asset ownership	Public	Public	Public
Typical duration	3-10 years	10-15 years	15-30 years
Operating responsibility	Yes (+)	Yes (++)	Yes (++)
Investing responsibility	No	No	Yes
Remuneration	Management fee plus incentive bonus	Final consumer revenues less lease	Final consumer revenues less concession fee
Transfer of staff	Usually not required	Yes (to be negotiated)	Yes (to be negotiated)
Used for airports	(+)	(+)	(+++)
Most appropriate when	Private unwilling to take risk, transition periods	Public financing preferred or lack of private equity	Need for large investment and exploitation of efficiency gains

- c. Deciding the transfer of assets and use-rights (build-operate-transfer, build-own-operate, build-own-operate-transfer, design-build-finance-operate, design-construct-manage-finance)
- d. Type of entity for the concession vehicle
- e. Allocating responsibility and risks
- f. Price setting and adjustment
- g. Performance targets, penalties and bonuses
- h. Level of public party's security rights
- i. Duration, termination, compensation
- j. Force majeure and other unforeseen changes
- k. Dispute settlement

- 3. Award:** Choose the method of award; ranging from competitive bidding to direct negotiations. Consider the qualification and evaluation process, including balancing different financial indicators:
 - a. Highest price for shares or highest concession fee
 - b. Lowest cost for construction
 - c. Lowest tariffs for users

- 4. Implementation:** Although the PPP moves some of the responsibility to the private sector, the implementation of the model is crucial for its success. The following needs to be set up at the start of the process:
 - a. Establish the management team
 - b. Approve construction arrangements
 - c. Establish performance monitoring systems
 - d. Arrange asset, property and staff transfers
 - e. Monitor and assist with application by the project company for approvals and permissions (e.g. land)
 - f. Establish the mechanisms for periodic review

Case Study 6 – Service Delivery/Subscription Model

Introduction

Air traffic control increasingly relies on data and information. New technologies are emerging that challenge the need for ANSPs to manage their ATM infrastructure. As a result, ANSPs need to be able to procure in more flexible ways than the traditional model of equipment purchase and operation.

The Problem Statement

Data and information are contributing to better situational awareness. For the purposes of this Case Study an ANSP realises that it is not taking advantage of this information and therefore needs to determine how it can acquire this data and information, while keeping within its budget.

The Solution

Procure on a subscription basis or service-fee model. Reasons could include:

- a. To provide flexibility and increase the elasticity of an ANSP (e.g. to allow the service to flex up and down in response to changing demand or to enable the ANSP to change suppliers more easily, and to avoid a long tie-in to a supplier for the life of an asset)
- b. To reduce capital expenditure by spreading it over a longer period as operational expenditure (although please note that in some areas such as Europe, the incentive is to do the opposite as ANSPs are permitted to make a return on their assets)
- c. To focus on service provision and remove parts of the business associated with engineering, such as asset maintenance and repair (e.g. due to strong competition on price)
- d. To drive value through managed packages if efficiencies can be found, for example, through gain share arrangements where both the ANSP and supplier are incentivised to improve performance and share in any efficiencies achieved

Examples of the service-fee model might be:

- a. Communications services, where the ground or space-based infrastructure (e.g. transmitters, receivers, routers) is owned by a third party and the ANSP pays only for the data traffic
- b. Surveillance data sharing agreements where one ANSP pays only for the data, with the infrastructure owned by someone else (e.g. another ANSP)
- c. Centralised or horizontally integrated services, where a separate authority procures the equipment and users pay a fee to access it (e.g. the European Aeronautical Database (EAD) or Pan-European Network Service (PENS))
- d. Remote or digital towers in which airports purchase and own the airport-based infrastructure and lease it to the ANSP for the duration of the service contract

How to Follow This Model

Establishing a service or subscription model requires setting parameters to measure the quality of the service. A service level agreement will typically be needed and a balanced contract that ensures a long-term, win-win relationship for both the contractor and supplier.

Aspects to be considered include:

- a. **Where the supply contract requires the contractor to make large investments (for example, in assets, training, licensing):** The supplier will be looking for a long-enough contract to ensure it has sufficient time to recoup its investment.
- b. **Asset ownership:** If the supplier owns the assets, this could hinder competition between successive contracts as a prospective new supplier would need to compete against an incumbent contractor with substantial capital investments. In a lease contract, the supplier simply operates the assets, whereas under a concession, the supplier both operates and is responsible for investing in the assets. A concession contract is normally preferred where there is a strong incentive for the contractor to make necessary investments.
- c. **Ensuring a complete business case:** When the service might replace assets that were previously owned and operated by the ANSP, a different type of decision-making process will often be required. A complete business case considers irrecoverable (sunk) costs, any resources currently managing the existing assets and other indirect costs involved in asset ownership. These are often not considered in traditional tenders (for example, cost of land lease, access roads, maintenance, engineering staff, project staff, etc.).
- d. **Avoiding supplier lock-in:** This is where only the same supplier can continue providing the service. One can avoid supplier lock-in through supportive intellectual property rights (IPR) arrangements (e.g. openness of demand information), contract break-points and clear contract exit provisions. For example, there could be situations where critical background IPR would not be available to the supplier and a suitable licensing arrangement would need to be in place. The supplier could also build up new IPR that prevents subsequent competition, which would require an exit clause to transfer

any IPR back to the contractor, or alternatively grant perpetual rights.

- e. **How to gain approval:** One must consider how to gain approval from customers/airspace users to move to a model where users will see an increase in operational expenses (e.g. if they have previously been used to a model where capex costs are recovered through depreciation).
- f. Challenges in designing the procurement process around an end state for the delivery of services that are currently not part of the ANSP portfolio (transition period to operations).

Evaluation: A service-based contract relies heavily on the service quality, which in turn is influenced by the relationship between supplier and contractor. Weight should be given to evaluating the staff involved in delivery and their past performance in related contracts.

Contract negotiation: A shared understanding of each other's business models is important. Consider incentives to promote a win-win relationship (e.g. gain sharing).

Delivery and implementation: Contractually agree regular check points to monitor, measure, and continuously improve performance.

Post implementation: This should be considered at or before the start of any contract, so that the incumbent supplier supports any transition, in the event that it involves handing over to another supplier.

Case Study 7 – Cooperation and Working with Partnerships

Introduction

Cooperation and working with partnerships is an area that is developing rapidly in business, across both public and private sectors. The motivation behind this is to achieve the business goals and strategic ambitions of all parties involved. The typical goals are related to:

- Saving costs through efficiency and removing duplication
- Creating value beyond costs savings. This includes applying partnership influence to help make multiple parties work together to share benefits
- Innovation including early identification of new technology trends
- Mitigating risk particularly when embarking on new or complex ventures
- Enhancing resources and skills, to create more effective business models

The pre-requisites for successful cooperation are:

- Identifying the areas to determine that the investment in the collaboration is feasible. The parties involved should have the same view of the goals. That is, agree on the criteria to assess their respective performance, and the principles and agreements to govern the partnership. Each party should first internally assess its goals and the criteria to conduct research which will determine a suitable partner.
- Creating the corresponding capabilities in all involved parties. This includes organising the structured management of the cooperation, the internal awareness of the benefits, the competencies needed, the leadership for the collaboration, building the relationship, managing risks and also managing the knowledge and intellectual property created through the collaboration.

The life cycle and management of the collaborative initiatives are explained in this paper in more detail in the “How to” section. The key stages are:

1. Awareness
2. Knowledge
3. Internal assessment
4. Partner selection
5. Working relationships
6. Additional value creation
7. Staying together
8. Exit strategy

Typically, the partnerships are established for the long term. For true alignment, transparency is essential and a sufficient amount of information has to be shared which can only be done if mutual trust has been built.

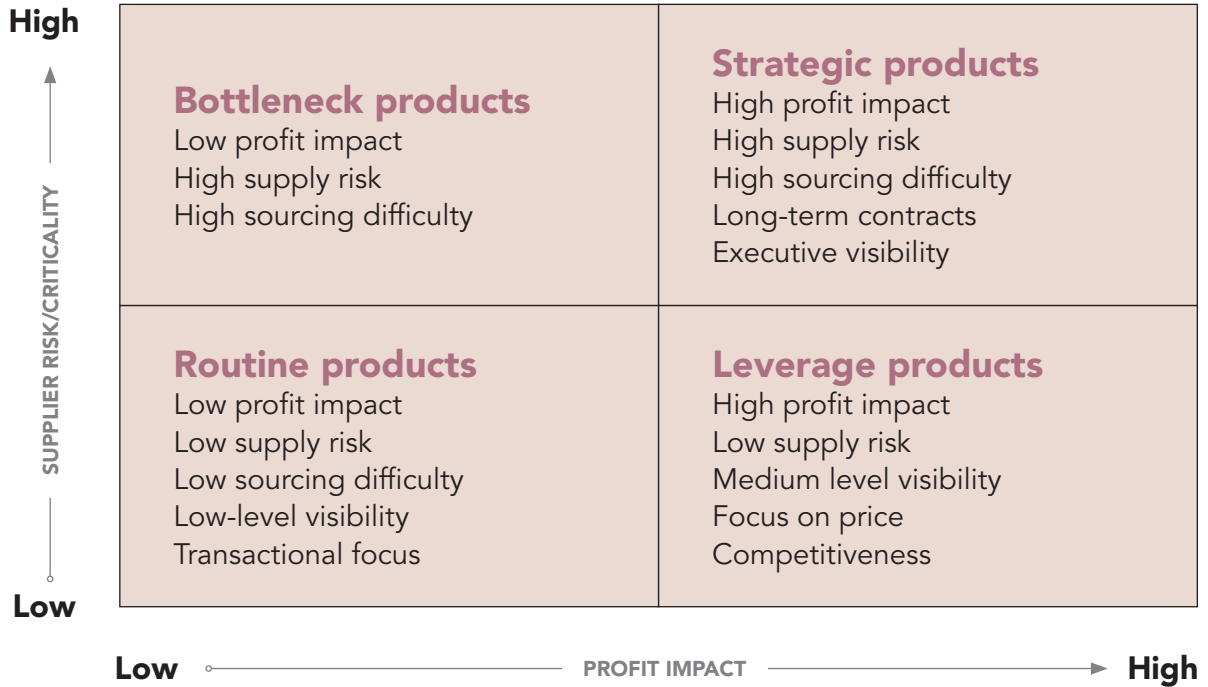
It should be noted that the principles and practices of this case study can be applied to both bilateral and multi-party collaborations. Where there are more than two parties, equality of information sharing and engagement must be consistent across all participants. Furthermore, the principles can be applied to all sizes of organisation.

Why Cooperation and Working with Partnerships is Relevant to Acquisition Excellence

There are multiple proof points and various studies that show the benefits of cooperation and working with partnerships. When implemented correctly, the parties involved can benefit from reduced costs, shared innovation, higher quality, and improved efficiency. The ATM industry faces many complex and safety critical changes that require high investments in new technologies and procedures. Due to the complexity, it is possible that several companies are needed for the collaborative set up to deliver the results effectively and reliably.

The Kraljic model (portfolio analysis) provides a simple visual indicator of where organisations should focus their attention on the need for these types of relationships. Their focus should be in the top left quarter of the model, where risk and value are high and organisations are motivated to invest in more strategic arrangements.

THE KRALJIC MODEL



To provide some context we give a practical example of how a partnership was developed in the ATM sector, with its key points highlighted in the next series of paragraphs.

The Problem Statement

With increasingly sophisticated technology becoming available for use in the air traffic domain, ANSPs are recognising that they do not have all the expertise necessary to deploy and run these solutions. The cost of developing this expertise in-house is prohibitive and not an efficient use of resources, when this expertise already resides in suppliers. Therefore, developing a closer association with suppliers with whom to work in partnership can be one answer, providing this association is of mutual benefit to both parties (i.e. the necessary levels of trust are established to support an open and cooperative relationship).

We will discuss a potential solution using a case study example. It describes a collaborative process to prepare, evaluate, negotiate, deliver, implement and terminate the use of a solution that is delivered as a project. When acquiring and provisioning a service instead of a project, the same phases can be identified. However, the requirements definition may typically differ. Instead of defining features or functionality, the key performance and the corresponding indicators over the agreed service period are the object of the transaction.

The Solution

The example in this case study is of an ANSP selecting a new major technology solution that will be in service for over 10 years. The ANSP has determined that because of the complexity and importance of the technology and because it will need to be integrated with its other key operational systems, a collaborative relationship with the supplier is desirable to implement the project. Furthermore, the critical technology is required to have an operational life over a long period and the most appropriate support strategy for the new technology is to work with the supplier. To ensure its business continuity, the ANSP has a strong preference for a long-term partnership.

Establishing partnership-based relationships requires sufficient time to address the internal capability, as well as spending sufficient time on an expansive selection approach (you are not just selecting a solution but also the right relationship to deliver and manage it); and then the necessary work to establish the foundations of partnership with

the other party and create the right management environment. This investment in up-front effort and engagement leads to significant risk mitigation for the downstream delivery of the operational solution. When establishing these types of relationships the OJEC (Official Journal of the European Community) Procurement Regulations also need to be considered as they need to be observed. However providing requirements relating to relationship and partnership are included in published selection criteria this will not be a barrier to a successful partnership and contract.

Areas of challenge associated with establishing and managing a partnership relationship can apply, in particular, where there may be a limited number of prospective partners. What is important to consider here is to be ambitious and innovative around what partnership can offer. Even when two organisations are significantly different sizes, if there is benefit to both parties in creating a close association, then partnership is achievable. The key is building trust and ensuring that win-win outcomes are possible.

It should be noted that although the case study refers to a sizable, long-term project between a larger customer and large supplier, the principles can be applied to small ventures or adopted by smaller sized organisations. The notes in blue explain applicability in this respect and any changes that might apply to smaller set ups.

Evaluation of the case through procurement steps:

Preparation

In terms of developing technical requirements, these can be developed together based on a set of high-level requirements. This process opens the opportunity for new ideas and concepts, as well as ensuring that requirements are understood and can be assessed together to determine their cost effectiveness and whether they should be included.

The relationship differences that applied to this case was that the decision to pursue a partnership relationship needed to suit the long-term aims of the customer (ANSP) and so the key characteristics of the relationship for long-term collaboration were identified as:

- Needs to be based on confidence, credibility and mutual benefit
- Requires the sharing of responsibility for achieving goals, delivering value to both by adopting flexible and innovative approaches through removing traditional relationship barriers
- Long-term, stable arrangement based on certainty and continuity
- Joint commitment to the success of specified ventures where clear objectives are agreed
- Commitment to success at the most senior level in both organisations
- Openness and trust, through sharing information and expertise and joint problem solving.

Through market analysis, the customer identified and subsequently focused only on those suppliers that showed evidence that they could and would be able to work in this way and recognised the opportunity for mutual benefit. This is significantly different from a straightforward customer-supplier relationship.

This approach and these characteristics could be adapted to apply to any size of organisation. What is key is that this is the phase where the customer sets out its objective to seek a partnership relationship.

Evaluation

Traditional methods of assessment were applied to the evaluation of the technical and commercial aspects of the offer to ensure that value for money would be achieved. In addition, the customer introduced additional relationship and collaborative dimensions to the evaluation that recognised that customer success would be linked to building a relationship with a supplier organisation with complementary skills and expertise, and the desire to pursue similar goals. This was addressed in a number of ways, particularly the need for the following:

- Sharing, developing and improving knowledge
- Working together to optimise costs, resources, skills and jointly manage risk
- Utilising primary resources more efficiently and effectively by accessing secondary needs from the partner
- Potential for benefiting from working on joint business opportunities
- Helping each other understand how the future will look and working on addressing together long-term considerations and priorities for both

To support identification of the preferred supplier and relationship, the customer not only conducted due diligence with other customers of the supplier, but also applied significant effort to investigate and understand the supplier's objectives, processes, capabilities and business behaviours. The customer established that the selected supplier could be a good fit as its evaluation revealed a financially sound, successful and growing business, with system deployment experience and demonstrable ability in solution development.

This approach can be applied by any size of organisation. If the other party is not interested or does not understand the objective of the customer to create a partnership relationship, then it is at this point that this should be revealed and the parties will not progress to the next stage.

Contract Negotiation

Negotiations relating to technical factors were straightforward. In respect to commercial and relationship aspects, the negotiations were handled to ensure principle-based outcomes by experienced teams that understood the need to ensure win-win outcomes. Conducting an aggressive negotiation position before entering into a partnering arrangement is contrary to good collaboration as it does not set the right tone. The experienced negotiators on this deal understood the need to strike a correct balance between friendship and professionalism.

Following the determination of the right partner to meet the aims of the two parties, a relationship 'roadmap' was designed and agreed to determine the short, medium and long-term aims of the relationship. It also included the rules of the relationship and described any areas where either of the parties had constraints or special requirements.

This approach can be applied by any size of organisation; particularly as you should now only be negotiating with a party that also wishes to enter into a partnership-type relationship.

Delivery

To manage the project delivery work, the partners negotiated and agreed a comprehensive framework agreement, to enable all future requirements to be handled consistently and in a manner acceptable to both parties. The customer awarded an initial contract (project definition) under this framework to enable the customer and supplier to work together to further progress how they would apply these capabilities for a major implementation.

The partners introduced other additional incentives that may not normally exist in a traditional contract (where penalties or liquidated damages may be more common). These are detailed in the Conclusion section of this case study, where the benefits are outlined. Furthermore, working closer together does ensure that the reliability of estimates and plans is at a more advanced level because they are reviewed and addressed jointly, so they are understood better. Partners can agree priority requirements to optimise time and overcome delivery challenges.

It is recognised that a smaller customer may struggle to exert the necessary influence over a larger supplier. In this instance, there is the opportunity within a close-knit community such as ATM to align with other like-minded organisations and create a customer-led collaboration, where the parties aggregate their spending and approach a potential supplier. COOPANS is an example of this, where five ANSPs have joined together to jointly procure services and equipment with a chosen supplier.

Implementation

Implementation is a key phase in a major delivery as it is where there is the opportunity for parties to work together to best ensure success, in particular to allow the end users to participate in the process. Although this case is based on a project delivery, this can equally be applied to a service-orientated opportunity.

The relationship is managed by applying practices detailed in a joint relationship management plan that addresses the approach to be taken and actions required to ensure we operate collaboratively. It is a structured approach, appropriately detailed to address areas for clarity along the following lines:

- Introduction – brief explanation of relationship and scope of business
- Joint Objectives – ensure full understanding of what parties want to achieve
- Key Milestones – critical dates when major activities are due
- Senior Stakeholders and Governance – direction, oversee progress, resolve problems/issues
- Working of Teams – how you expect to work together
- Key People – the people from both organisations that will ensure the relationship succeeds
- Communication – structure and plan to manage communications
- Change Management – variation in any appetite to work together
- Meetings and reviews – key forums to manage the relationship
- Joint Action Planning – steps to enable the continued development of the relationship.

- Creating Value – identifying, agreeing, detailing and tracking opportunities
- Knowledge Sharing Plan – value adding activity
- Performance Monitoring – measures to assess and monitor performance
- Risk and Impacts – analysis/assessment of risks identified by both parties
- Dispute Resolution – process and escalation routes
- Exit Strategy - how we will approach any future disengagement

This approach can be applied by any size of organisation.

Post implementation

Unlike traditional arrangements where the supplier limits its risk in the support phase, one of the key benefits of establishing long-term partnerships is that suppliers remain obliged to ensure their customers remain satisfied. As with the previous stage, the relationship management plan will apply to the in-service period, as the collaborative relationship continues to apply.

As with the delivery phase, leverage is key here, so again if the relationships are not asymmetric then it is worth seeking out customer partners to align with and aggregate spend.

Skills Used in the Case

It is important to consider the available resources to support a collaborative programme. This approach may not suit everyone as being able to apply collaborative capability and display collaborative behaviours are required. The collaborative behaviours applied in this instance include:

Engagement: Accessible, responsive, timely and easy to engage with

Information Sharing: Openness; timely; maintains effective communication

Managing Conflict: Identifies conflict; pre-empts potential problems; resolves sensitively

Sensitivity to Others: Shows respect and sensitivity to others; recognises and understands cultural diversity

Going the Extra Mile: Identifies challenges, opportunities, efficiencies; unconstrained by contractual boundaries

Providing Early Warning: Promptly, proactively raises potential issues in an open way before they become problems; no surprises

Conclusion

The case study shows that with this type of relationship, there are long-term benefits through the supplier being able to improve its efficiency in delivering solutions to the customer, while developing its capabilities to generate more business by providing a broader range of key services to the customer on preferential terms and rates.

Close engagement ensured the agreement of more realistic delivery timescales based on a better understanding of the challenges, so the project was delivered on time.

These improvements deliver better value to the customer through economies of scale, optimum risk transfer and more effective working practices, while improving the supplier's capability, revenues and reputation. Materialisation of these benefits is contingent on effective collaboration and associated complimentary behaviours and this is put into effect through the joint relationship management plan.

The risks of any dependency on the supplier resulting in performance inefficiency or excessive prices are countered by using a range of mechanisms to ensure the supplier can continuously demonstrate value for money for both immediate and future commitments, as well as creating a mutually beneficial relationship in promoting each other's reputation in the industry. These include:

- the customer benefiting from preferred rates, with future annual reviews controlled
- benchmarking future pricing levels against existing competitive levels and future competitive alternatives
- metrics to maintain agreed performance and with the potential to incentivise future improvements.

Another important outcome for the supplier was the opportunity to commercialise the solution, an excellent reference and a 'shop window' for its technical and collaborative capability. Furthermore, the ultimate end customer benefits from improved/faster service and better value.

These are clear benefits from a partnering arrangement but it represents an investment over and above traditional contracting so it is important to weigh the advantages against the additional effort and always monitor to ensure the partnership continues to deliver.

Lessons Learned

A number of simple, generic recommendations were revealed:

Do:

- Identify potential partners for collaboration
- Build a dialogue around common objectives and outcomes
- Establish what knowledge can be shared and how
- Set up a joint value-creation process to encourage new ideas
- Define what value means for those involved
- Monitor the relationship over time
- Ensure that the exit strategy is jointly developed and regularly reviewed
- Define the boundaries of the relationship clearly
- Consider future potential for collaboration
- Create a joint roadmap

Don't:

- Let negotiations deteriorate into displays of power or arrogance'
- Keep working on value-creation ideas if either party is not delivering
- Delegate joint team management of the collaboration upwards
- Put up with inappropriate behaviours such as hidden agendas
- Let disputes linger so long that they damage the relationship

How to Follow This Model

Step 1

Integrating Collaboration with the Business

Relationships of any kind have a life cycle. To maximise the benefits of relationships, it is important to consider the longer-term implications of your actions on value-creating relationships. As with many supply chain programmes, deciding to adopt a collaborative approach will cut across every function of the organisation. The first key step is to ensure that your organisation has a clear mandate and strategy to undertake collaborative working. These have to be aligned with the vision, values and objectives of the business. Collaborative working in any form is not an easy option. It requires investment and resources. And because relationships change continuously within an organisation, it requires appropriate backing from the decision makers.

To fully embed collaborative working, the areas to consider are as follows:

- Executive sponsorship
- Business objectives
- Benefits and business case
- Segregate relationships
- Skills capability of key individuals
- Initial risk assessment
- Relationship management plan

Step 2

Developing a Collaborative Supply Chain Strategy

Having identified the potential for collaboration, the next stage is to develop specific strategies and risk management that will deliver the required outcomes. What do you want to achieve, and do you have the skills to support the complexities of these integrated approaches? How will you manage knowledge and information flows? What will your customers and markets make of a collaborative approach? Which companies could you partner with? What would be the impact of withdrawing from collaboration? The exit strategy is often seen as negative, but understanding the rules for disengagement focuses attention on the key issues to make a relationship work. Most importantly, what do the specific risks look like? Every relationship, whether vertical or horizontal, is different. However, the most important issues will be common to most.

Identify objectives and drivers - While there may be many common factors, each relationship is likely to have varying drivers shaping it. It is crucial to understand these, and ensure they are transparent to the organisation. As the relationship progresses, these must remain at the fore as they will influence every aspect of the development. Examples of these drivers can include:

- Skills and competencies
- Knowledge management
- Strategy development
- Market analysis
- Collaborative partners
- Initial exit strategy
- Risk management
- Business continuity and corporate social responsibility

Step 3

Understanding your Collaborative Capability

To achieve the desired goals, a collaborative relationship requires commitment on all sides. Most organisations are good at defining what they want from others, but perhaps less willing to assess their own capability to meet the demands of collaboration. This is not just about processes, procedures, systems and contracts – the hard process issues. It is also a question of the people drivers – the soft issues – such as leadership, skills and motivation, which will govern behaviours and approaches at the working level. It is important to understand the internal enablers that build trust between parties for a mutually beneficial relationship that delivers equitable reward.

This is particularly pertinent in a supply management context, which is largely driven by the principle of the buyer trying to get the most for the least, and the suppliers giving the least for the most. You can develop collaborative capability by:

- Embedding this approach in policies and processes
- Identifying and removing internal constraints
- Reviewing your collaborative profile
- Putting in place the right leadership
- Deciding on a partner profile
- Evaluating knowledge and skills

Step 4

Choosing a Supplier with whom to Partner

Collaborative relationships can be used in many different circumstances, and finding the right partner should not be left to chance. Too often, selection is by default or based on the length of time of the relationship. However, this may not always be the best criteria. A well-established supplier may not be the most suitable choice when you are considering a more integrated approach.

Similarly, just because an existing provider is a single-source option, there is still potential for collaborative working. It is important to understand the differing dynamics of a collaborative approach, and assess the strengths and weaknesses, whatever the route to selection. Collaboration does not mean forsaking a competitive edge, and the selection process should be similarly competitive. It should clearly define the end-game upfront, to avoid confusion later.

- Identify collaborative partners
- Apply supplier selection processes
- Establish common objectives
- Have a clear negotiation strategy

Step 5

Setting up Governance and Contracts

Once you have selected the partner or partners, the focus shifts to ensuring the relationship is placed on a sound foundation. Establishing the right platform on which to create a collaborative relationship is crucial. Clearly, you will need an agreed contract. However, it is important to work jointly on setting out the appropriate governance model that will support collaborative working. The finalised contracting arrangement should, where possible, incorporate the key requirements and principles for collaboration, which include the need to address operating practice and systems used for managing the operations.

Key elements are:

- Joint sponsorship
- Objectives and principles
- Competency
- Joint management team
- Information management
- Communications plan
- Joint risk management
- Process review
- Monitor and measure
- Relationship management plan
- Contracting arrangement

Step 6**Maintaining the Relationship and Joint Continual Improvement**

If relationships are not actively maintained and continually improved, they will tend to plateau over time. Those relationships that focus particularly on long-term benefit must maintain relevance to markets and customer needs. One of the major benefits of collaborative approaches is the ability to share ideas and harness alternative perspectives. Organisations that look for additional benefit once the relationship is in place will often exceed their original objectives and perform much better overall. By adopting a structured approach to joint continual improvement, and working to co-create business and improve product value, organisations can also improve engagement across partnering teams.

Step 7**Managing Relationships Over Time**

Business relationships change over time due to internal or external factors or pressures. Even where partners have invested in creating a firm foundation and governance structure, the people involved will inevitably move on, and this may change the dynamics of the relationship. So it is important to embed the collaborative practice in the operating model. It is crucial to establish a programme that maintains a sustainable relationship, using joint management to maintain performance.

Step 8**Exiting a Collaborative Initiative**

Although the exit strategy is the last stage in the relationship, it is a key aspect that should be addressed during the initial stages and carried through the whole life cycle. The exit strategy should not be confused with contract termination. Instead, it should focus on how the parties plan to disengage from a collaborative initiative, and ensure business continuity and customer support. This is particularly important in supply chain programmes where services and outsourcing programmes are involved, which may for regulatory or competitive reasons require periodic re-tendering. A strong relationship will recognise the value of monitoring changes and ensure that the concerns and needs of each partner are duly addressed. While one particular initiative may have come to its natural end, others may arise from successful collaboration. The way that the termination of an agreement is viewed both internally and by the market is crucial to the reputation of the parties. While it may be appropriate to cease activity, how this cessation is presented and interpreted will influence the way each party proactively approaches disengagement.

“How to” Flow Chart



Case Study 8 – Stakeholder Management

Introduction

This case study will provide guidance for managing stakeholder involvement in a major transaction and will demonstrate that a stakeholder management plan is not only key to any successful acquisition, but is one of the first steps that an organisation should take when detailing an acquisition project plan.

Problem Statement

The ANSP needs to replace a major business system within the organisation. This system will affect the organisation cross-functionally and employees will be able to input and adapt the system, and not just be consumers of the system.

The ANSP's Acquisitions Management organisation (AM) soon realises that the end customer, or client, could not produce requirements in a traditional supply chain management process. There is not one identifiable department, or client with which AM could work to produce the requirements. The myriad of users would be using the system for different purposes and would have different needs. There were too many stakeholders involved and no set state as to what the final product needed to look like, or what it needed to satisfy within each client base.

How was AM to move forward with this purchase for the organisation?

The Solution

When the AM team realised that the purchase of the particular system would involve a high number of stakeholders, it decided to draft a stakeholder management plan.

First, in order to address the needs of each stakeholder, AM needed to identify these stakeholders. This definition is an important first exercise, and was allotted an appropriate amount of time and thought.

Once AM identified the stakeholders, it created a series of stakeholder forums within the organisation. AM contacted individual experts, and representatives of each functional domain for help in identifying key individuals, and subject matter experts who would participate in the project. AM communicated the mechanics of these forums throughout the organisation according to set guidelines outlined in a stakeholder communication plan.

The AM began by identifying domain areas, which included

- customer service and support
- product delivery
- subcontractor/third party involvement
- privacy and regulatory issues.

Pricing was not initially included as part of the discussions. In addition, individuals who participated in a functional domain area were not necessarily experts in that area; they could also be users of the system. For example, in the customer and service support group, there were individuals who would need to use the system once implemented and not only individuals who would provide support only.

The end result of the stakeholder forums was a comprehensive set of questions which were function based. Instead of describing how a system needed to accomplish a certain task, the questions asked how the system would satisfy my need to fulfil a certain task. For example, a typical requirements document could state: "the system must permit the aggregation of pertinent data into graph form." A function based approach would state: "I need to communicate this pertinent data to operations. How does your system permit me to do so in an effective manner?"

The AM team invited key stakeholders to get hands-on experience with various tools offered by vendors and asked them to provide their opinions to the project team and answer a series of questions.

AM then compiled the results of the exercise and used them to issue a request for proposal (RFP) to the market. The potential suppliers would have to answer a series of questions in each domain area.

Once AM received the responses from the vendors and conducted an evaluation, it invited a small number of vendors to proceed with discussions. Pricing discussions only began after the completion of this first phase of the exercise.

A project team oversaw the overall project, process and acquisition and it reported to the Acquisition Steering Committee.

Developing a Stakeholder Management Plan

Developing a stakeholder management plan requires the identification of people or departments affected by a project. Its purpose is to examine stakeholder expectations and to develop strategies for effectively engaging stakeholders at an acceptable level, depending on their use or involvement with a particular project throughout its lifecycle.

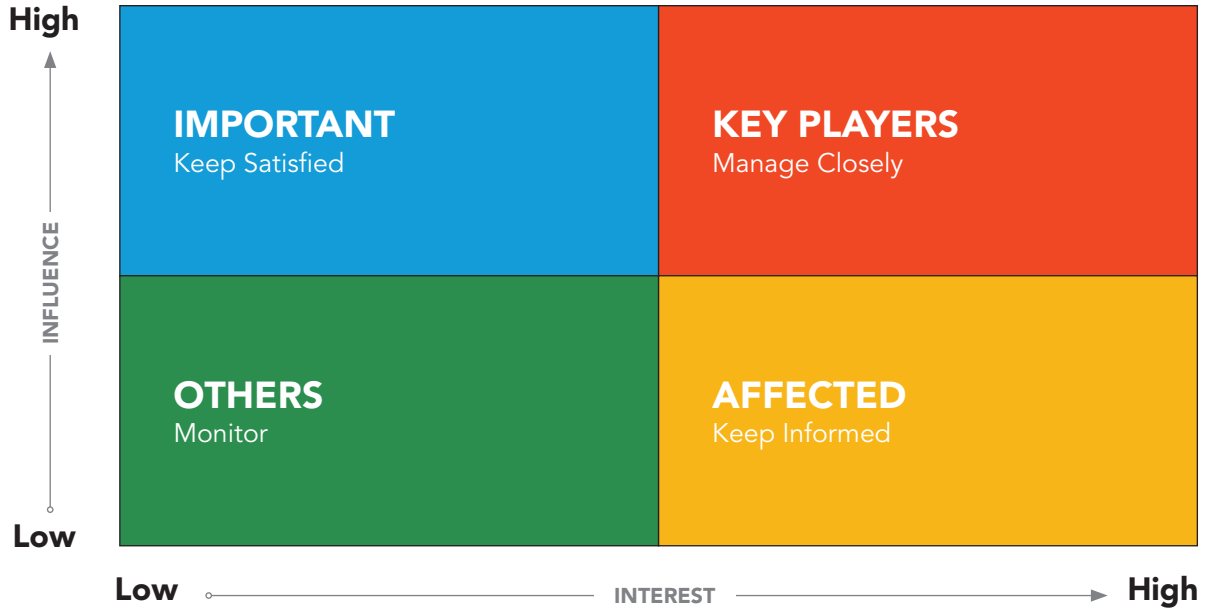
A well thought-out stakeholder management plan will include:

- Identifying stakeholders
- Classifying stakeholders
- Identifying strategies for stakeholder support
- Monitoring the engagement of stakeholders
- Creating a stakeholder communication plan
- Implementing a governance structure

Identifying stakeholders is not as obvious as it seems. Who benefits from the acquisition? Who does not? Who influences the acquisition in terms of budget? Who influences in terms of technical operations? Who controls the resources? These questions and more need to be asked in order to come up with a complete list of stakeholders.

Once stakeholders are identified, their level of interest and influence in the acquisition project needs to be measured and weighted. This will determine the level of management required for a particular stakeholder. A common matrix of classification is illustrated below.

CLASSIFICATION



The critical part of a stakeholder management plan will be the outlining of specific strategies to address the different classes of stakeholders. These strategies can be influenced by the organisation’s culture; how the acquisition will impact the organisation; and the class of stakeholders.

The AM team in our case study knew that this acquisition would permeate through all sections of the organisation, which is not a common occurrence. It also knew that, change management would need to be a significant part of the ultimate project implementation. Yet the AM team had policies and business strategies which permitted the development of a stakeholder management plan in an innovative manner. By being able to assemble internal stakeholder forums, the AM team greatly assisted in developing the final system requirements. It is key for an organisation to have policies in place which allow flexibility in the acquisition process while remaining within the appropriate supply chain management procedures.

Challenges

When there are a large number of identified stakeholders, you will end up with competing stakeholder objectives.

Commitment to a communication plan will help minimise misunderstandings between competing influencers and facilitate a more holistic approach to implementation.

An effective communication plan should include:

1. Outline of objectives
2. Key messages
3. Tailored messages to specific audiences
4. A communication calendar

Such a plan needs to be communicated early, regularly and in a timely manner.

As an acquisition project evolves over time, the communication plan will also need to be adaptable and flexible to meet changing objectives and ensure success.

In our case study, the cross-functional nature of the system acquisition necessitated a corporate-wide communication plan. Key participants from each functional group created the plan collaboratively to ensure targeted communications.

An effective governance structure will also assist in managing competing stakeholder objectives. An acquisition governance structure includes the basis of any good governance structure:

1. It must be formal
2. It must identify the roles and responsibilities of participants
3. It must have well-articulated policies, processes and procedures

In our case study, the Acquisition Steering Committee included key members of functional groups as well as executive management participation. A governance structure benefits from including executive management as it provides consistency in monitoring and clarity in messaging to stakeholders.

Conclusion

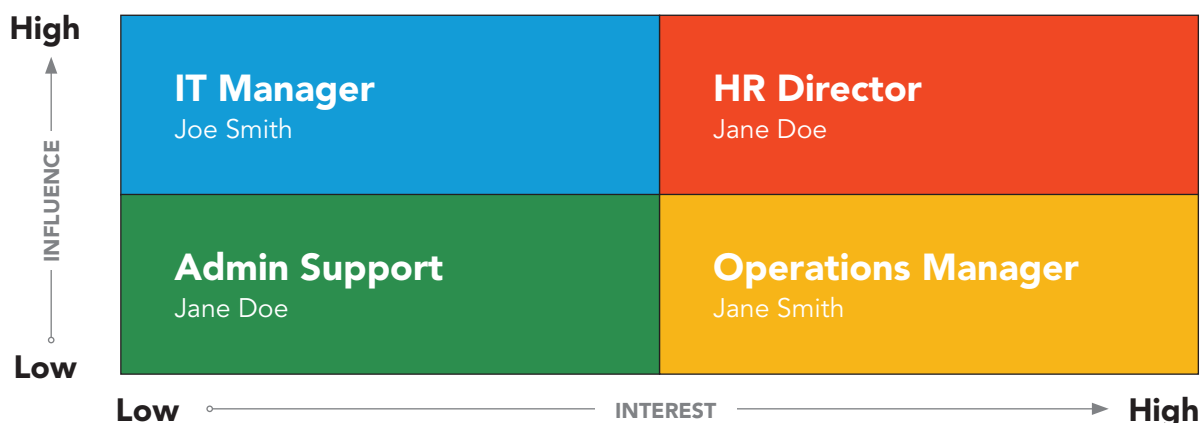
A key component of acquisition excellence is to effectively manage all stakeholders. Identifying and classifying stakeholders at the early stages of an acquisition or perceived future acquisition will contribute to a successful project. Communicating progress soon, often and at the right level of detail is critical to success.

How to Follow This Model

Practical Application of Stakeholder Plan

1. Identifying stakeholders within the classification matrix is a key step after identifying stakeholders. Mapping individuals or groups within the four key areas of influence and interest will determine the level of engagement which is required for each stakeholder.

CLASSIFICATION



2. Once classification is done, determining engagement strategies for each individual or group is the next step. These strategies are then monitored in terms of levels of engagement. A common practice is to map out these strategies in a Stakeholder Engagement Plan matrix. An example of such a matrix is outlined below.

Stakeholder	Stake in the Project	Impact/Influence	What do we need from them?	Perceived attitudes/risks	Stakeholder Management Strategy	Responsibility
HR Director	Policy and process owner who determines institutional administrative policy and procedures	High/ High	Experienced staff to be involved in user group and user acceptance testing. Commitment to implementing change.	Lack of clarity about preferred approach. Views project team as too technically oriented.	Involvement in Project Steering Board. Regular updating meeting with project leader.	Project Manager
IT Manager	Implements the new system	Low/High	Ability to install system and meet deadlines	Lack of interest, just another system.	Involvement in briefing sessions, meetings with business unit.	Project Manager
Operations Managers	Manage admin staff who will operate the new system at local level	Medium/ Low	Commitment to implementing change.	Lack of interest in project	Involvement in briefing sessions at business unit meetings.	Project Sponsor
Admin Support	Will operate new system	Low/Low	Contribute to system and process design and testing.	Concern about increased workload. Worried about what training they will receive.	Involvement in user groups	Project Team

3. An effective communication plan can simply be outlined within a table with appropriate action categories. Examples of such action categories include key messages, stakeholder, communication, channel, deadlines, assigned responsibility for task and status updates.

Key Message	Stakeholder	Communication	Channel	When	Responsibility	Status
The new system will facilitate transactions and will improve efficiencies	Operations	Demonstration with demo system; allow operations to simulate exercises.	Email followed by face-to-face demo.	End of June	Mary and John	Completed
			Regular email updates.	Once a month	John	On-track
	Engineering	Presentation to staff demonstrating the new technology and progress	Staff meeting.	End of July, then monthly	Mary	Completed
			Regular email updates.	Once a month	John	On track
	IT	Discussion on the technical requirements for the new innovation Implementation steering committee progress reports	Meeting	End of July	John	On track
			Meeting papers	Fortnightly	Mary and John	On track
All admin support will receive professional development in the new methodology	Admin support	Training plan with dates and times	Email	End of August	John	On track
		Training requirements	Meeting	End of July	Mary	On track

Case Study 9 – Requirements Management

Introduction

One of the greatest negative impact drivers to acquisition cost and schedule risk is 'requirements creep'. In other words, an undisciplined approach to developing requirements leaves programmes at worst inconsistent and at best immature or weak. As a result, often the ANSP has to accept a less desirable solution, or is forced to increase budgets and/or replace major systems with something less than originally planned or expected.

In addition, not getting the requirements definition correct can cause stagnation in the entire acquisition process, rendering entire organisations ineffective.

The Problem Statement

An ANSP has run out of budget on its last three infrastructure purchases. On reviewing and analysing the cause of these overruns, the ANSP realised that both the purchaser and the supplier had initiated a high number of change requests. Management has requested an overview of how requirements and specifications are developed.

The Solution

The objective of this case study is to show that if an ANSP develops a flexible, scalable requirements development process, they can learn lessons and better control costs and schedules. This case study will provide guidance for managing requirements development and is integrally related to the other key elements being studied, but most specifically, stakeholder involvement as outlined in the stakeholder management plan.

In line with the stakeholder management plan, processes need to focus on requirements. First, in order to address the needs of each stakeholder, stakeholders need to be identified. This definition is an important first exercise, and was allotted an appropriate amount of time and thought.

Once the ANSP has identified the stakeholders, it creates a series of stakeholder forums within the organisation. They include individual experts, and representatives of each functional domain for help in identifying key individuals, and subject matter experts who would participate in the project.

Requirements Development

Expect competing stakeholder requirements.

Commitment to a communication plan will help minimise misunderstandings between competing influencers and facilitate a more holistic approach to implementation.

An effective requirements plan should include:

- An understanding of the current state of the system/process being changed/replaced and associated costs of continuing as is and gaps in meeting current/new requirements
- A definition of the mission objectives (with a forward focus)
- A clear understanding of budgets (include requirements change increases from the beginning) and constraints
- An appropriate understanding of schedules
- Senior leadership involvement, understanding and concurrence (throughout)
- A system description
- The conducting of reviews of existing solutions
- The holding of seminars and open industry forums
- The issuance of requests for information (RFIs), specifically related to requirements
- Expert exchange sessions
- Operational capabilities demonstrations (an excellent way to balance the need between requirements changes and the ability/inability to meet them as early as possible in the acquisition process)

- Developing a plan that has a disciplined review of the requirements throughout the entire process and integrates appropriate changes or shuts off changes
- An initial understanding of change impact, training requirements, human factors and the overall impact on the operation

Challenges In Requirements Management

Perhaps the most challenging requirements relate to when a culture change is either required or is an outcome of the new requirements. These culture changes, which are inevitable in any acquisition, are often emotional as they impact people and therefore are most likely to result in late requirements creep and impact the rate of change.

A deliberate approach is required to ensure that requirements development is not simply an initial activity that then presents significant changes at the last moment, but rather a constant evolution (utilising the other elements of acquisition excellence being developed) throughout the entire process to and including final acceptance.

Conclusion

A key component of acquisition excellence is to effectively manage requirements development and maintenance. It is not an early checklist item, but rather a constant reference throughout the entire process and therefore a separate 'How To' section is not required for this case study.

Case Study 10 – Software/Cyber Model

Introduction

New targets for cyber-attacks are evolving, such as hospitals and retailers; and the threat is very real for every business with a network infrastructure. Governments consider airports as critical national infrastructure and, using the UK as an example, are taking a close interest in all aspects of security including information security.

Scenario

An ANSP handling thousands of flights a day receives a ransom demand of 10 million Euros or its operations will be disrupted. It is not clear to the ANSP how this would be achieved, but it is very concerned that this threat could be real and decides it must take action.

The Problem Statement

Criminal activity around denial of service has been around for many years but has changed as the cyber security landscape has changed. Originally, distributed denial of service (DDOS) attacks concentrated on starving a system of resources to bring down a service. The threat actors have altered their approach using different means.

The 'Internet of Things' has enabled connectivity in previously disconnected systems. These systems are now seen as prime new targets for launching DDOS attacks. The Mirai botnet attacks of 2016 used thousands of internet-connected cameras to launch attacks from numerous locations. This meant that the scale and size of the attack was bigger than any seen before. Much more worrying however, is that the ability to control the cameras was not due to a flaw in the software but a simple mistake: the default username and password had not been changed during installation.

No longer are hackers content with disrupting a service to cause reputational damage alone, new monetising strategies are emerging. Hackers are breaching networks and encrypting data on servers to prevent data usage; blackmail has become a good source of income. In 2016, US hospitals were the primary target, but in 2017 the WannaCry ransomware highlighted that almost anyone can be a target. Investigations into both attacks found that the exploits used were due to unpatched systems.

In the case of the WannaCry attacks, the UK National Health Service was particularly vulnerable due to legacy systems that could not be patched. These attacks highlight the importance of patching management as well as removal or segregation of legacy systems that may be a weak link in the network.

With the increased activities of terrorist organisations, all critical national infrastructures have become highly prized targets, with airports and aviation being of particular interest. Any breach of security could come with a high price, not only with the potential of loss of life, but certainly with an impact to revenue and reputation.

Solutions

When the threat of disruption comes and there is no mitigation plan already in place, it does not leave many possible positive outcomes. The risks should have already been identified as part of regular risk management assessments performed as part of security governance, along with controls in place for people, processes and products.

The security strategy for a business must underpin its business strategy and begin at the top. Board members must take ownership of the problem and empower their employees to put security as an important part of the overall business strategy. The security strategy covers the protection of the business through physical, managerial, administrative, technical and operational security processes. Traditionally, the information security officer or information assurance manager would report into the technical lead on the executive board. The technical lead would be responsible for making sure a risk management review is performed on a regular basis with threats, vulnerabilities and overall risk being communicated to the executive management team. Risk management should be at the forefront of any business and being communicated at the executive management team level ensures that the entire business is part of the solution.

A holistic approach should be taken towards cyber security; each system operates alongside others to bring together an all-encompassing system of systems that enforces and protects the whole. The defence-in-depth approach championed by the military may seem excessive to some, but it is key to creating a more secure system.

Layers of security are built around a network, not just at the perimeter but on individual endpoints, data in transit and at rest, and through the applications in use on the network. The layered approach results in a more secure design. If a single flaw is exploited, other security controls are in place to prevent a complete network breach that could mean loss of availability, confidentiality or integrity. While it is feasible that many of the elements of this layered security may be hardware and software components, they are only a part of the solution. Process, people and products are the vision for a more complete security approach.

Adding a layered cyber defence to your network may be the way forward but without a strong foundation to build upon, the entire system will be weak. Policies and procedures are some of the basic building blocks upon which to start. Are all the correct policies and procedures in place and being actively followed? Is the network being monitored and alerts in place to highlight suspicious activity or misuse of the system? While the network may look secure to its operator, it is only by obtaining an independent perspective that flaws may become obvious. Partnering with a third-party is an ideal way of avoiding the pitfall of "marking your own work."

People are an intrinsic part of the network and are another component within the system. While automation can do much of the work, we still need the people within an organisation to run the day-to-day operations. By adding the human element, another potential risk is added to the network. Training on the appropriate use of products, cyber security, and identifying suspicious activity are key to ensuring an active defence. Are employees being socially engineered even beyond the system? Are they on social media and aware of the risks? Could they identify a phishing email? Only by keeping personnel trained regularly can they be aware of emerging risks they may face.

Products are the traditional area that make up the cyber security platform, and while procurement departments may purchase the latest versions, this alone does not represent best practice. By purchasing an entire network consisting of one vendor's products, the network could be left open to a single vulnerability affecting all that vendor's products. This risk can be mitigated by taking a vendor-agnostic view and splitting the risk across multiple vendors or even, in extreme cases, multiple networks.

Are products configured correctly? Do people have the training they need to secure them appropriately and monitor their activity? Having a network assessment is a good way of highlighting flaws in a network's configuration that are not apparent, revealing open ports and services on equipment that any would-be attacker may use to their advantage.

Is there active maintenance for all products? Has a service contract been purchased? Is the software and hardware sufficiently up-to-date to mitigate vulnerabilities?

While a holistic end-to-end approach has been outlined for building a more secure environment, this is not limited within a single organisation, but must also extend outwards. Partners and suppliers may not have the same security infrastructure and processes and may therefore be adding risk to a working partnership.

To alleviate some of this risk, the customer must choose suppliers and partners that embrace a more robust cyber-secure practice. ISO 27001 is an internationally recognised standard for information security and forms a framework on which a business can build a secure network. The ISO 27001 accreditation is a company-wide collection of security controls that should be in place as a best practice in security and is a good benchmark to look for in suppliers and partners. The UK Ministry of Defence (MoD) has built a multi-layered initiative, the Defence Cyber Protection Partnership, which works with industry partners to launch the Cyber Essentials Scheme to which suppliers must be accredited if they wish to supply the MoD.

While the Cyber Essentials Scheme targets suppliers to the MoD, this does not have to be the end of the story for auditing. Businesses should be encouraged to audit their own suppliers to ensure that they achieve some level of information security compliance, whether that follows the ISO 27001 standard, the Cyber Essentials Scheme, or other recognised compliance frameworks.

Conclusion

While the majority of the areas mentioned come under the traditional role of the information security manager, they cannot act alone. The traditional information security team is only as good as the training and support it is given. The products it uses are only good if they are configured correctly and maintained to the correct level. Procurement departments play an important part in creating a secure multi-layered defence.

Case Study 11 – Cyber Model for Both the Buyer and the Supplier

Introduction

While it is easy to look outwards for the next cyber security threat and position all your resources into defending the perimeter against penetration, as the cyber security landscape has changed, the internal threat has become more prominent. How often do we look left and right to our suppliers and business partners? We may have long-standing relationships with them, however, they may still be the weakest link in the cyber security chain.

Scenario

ANSPs are becoming more concerned with the security of their ATM operating networks, considered by governments as critical national infrastructure. Whereas some ANSPs lead the way and possess extensive knowledge in the field, others are struggling and need some additional guidance. Suppliers of security solutions can play an important role in educating and providing bespoke solutions.

The Problem Statement

Traditionally, ATM networks have been self-contained and are therefore prevented from interacting with other networking environments including the Internet. Previously, ATM communication networks were connected with point-to-point private circuits such as analogue copper bearers or time division multiplexing (TDM) based technologies. As the requirements of the connected world have moved to faster and cheaper working practices, the networks have evolved into a more diverse and connected system.

With the growing sophistication of global security threat actors, organisations need to take a wider view when considering their threat landscape. Regardless of the mitigation implemented within their own network, threats remain. The weakest link may well be outside the traditionally defined boundary of the ATM network.

Many ANSPs rely on the supply-chain built around them. These key suppliers are crucial in providing equipment and services that create a secure and safe air traffic infrastructure. While

some of the challenge of securing reliable and safe suppliers lies with the ANSP by auditing its supply-chain appropriately, suppliers should take action themselves to gain credibility as a secure working partner.

Solutions

While traditionally suppliers are left to address their own cyber security needs, as a critical element in the procurement process they are now a de-facto part of any partner's cyber security challenge. Therefore, they should follow much of the same rigour and auditing as any other part of a security assessment.

As part of ongoing relationships with suppliers, particularly of critical or bespoke items, ANSPs should conduct regular security reviews and audits to ensure that proper governance of all aspects of security is in place. The ANSP should clearly define procedures and processes, and suppliers should produce evidence to demonstrate they are following them.

Accreditation is one method to demonstrate to a potential partner that security is at the forefront of their business strategy. As mentioned earlier, ISO 27001 is an internationally recognised standard for information security and forms a framework on which a business can build a secure network. The ISO 27001 accreditation is a company-wide collection of security controls that should be in place as a best practice in security. It requires cooperation across multiple business areas and from multiple roles working together to show that a security strategy is in place to support the business.

The human resources department plays a large part in managing risks with respect to people, vetting staff appropriately prior to employment, carrying out inductions for new employees, security awareness training and making sure there is a proper leaving process. Training is often overlooked both for information security personnel as well as employees from other business areas. The threat from a disgruntled employee, or the risk created by an untrained employee are still some of the biggest risks to a network. Though on the surface, these

human resources tasks may seem a world apart from technological controls such as antivirus and firewalls, they are key to building a solid foundation instilled within the people who operate on the network.

Data security is an important role for any supplier. If a supplier has material related to their partner such as intellectual property, this data should be treated with utmost care: following strict usage on where and how it is stored, and how it is backed up and who can access it. If this data were to be lost or stolen, the resulting damage would affect both parties and potentially destroy any trust in the partnership.

A supplier must be able to show that its systems are reliable by carrying out regular risk assessments, network assessments and vulnerability scanning, and if possible, penetration testing to appropriate levels. It must document incident reporting and response and disclose this to the partner to enhance trust in the working relationship and openness between both parties.

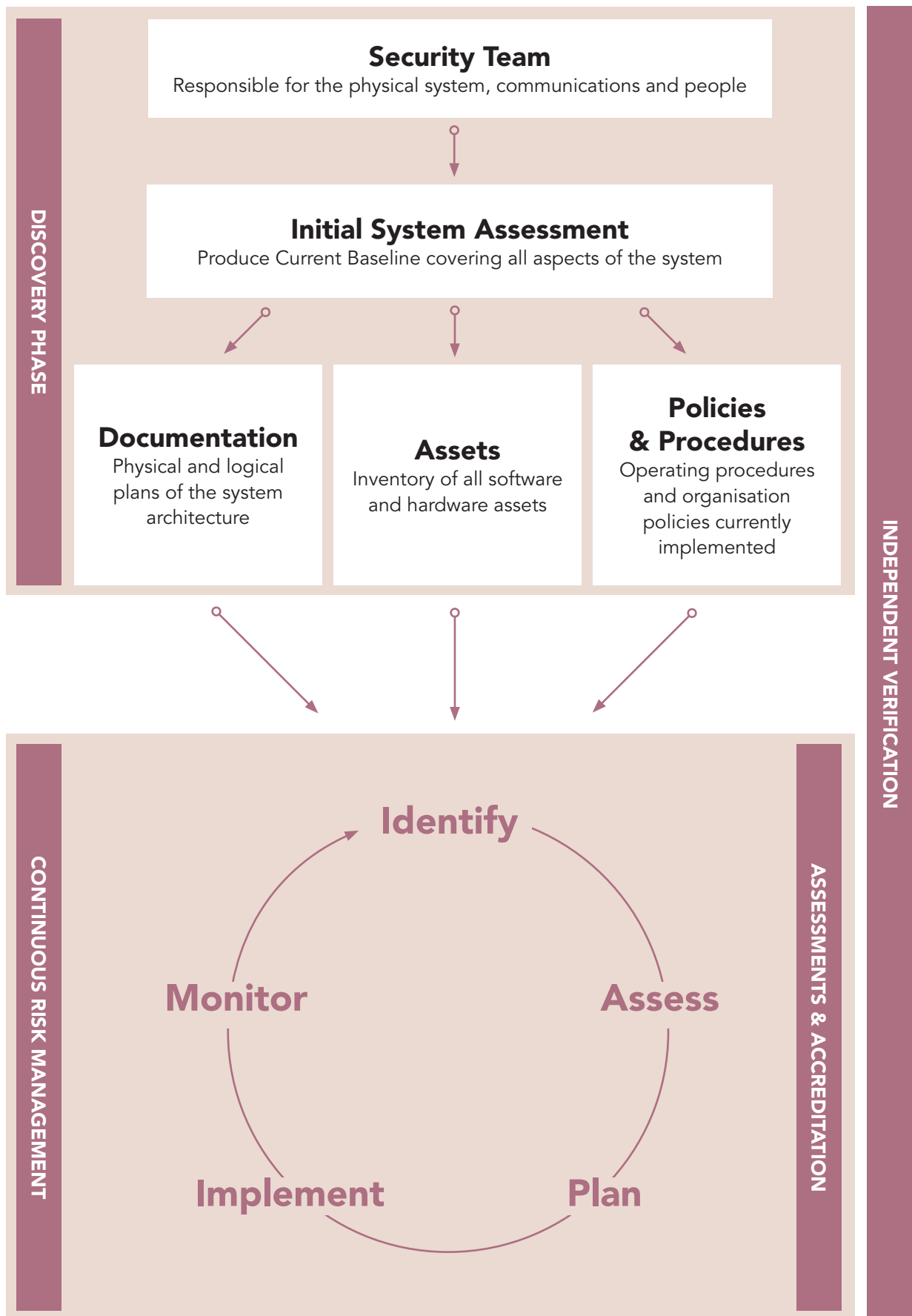
While a supplier may be the one which must be vetted by any potential partner, the suppliers themselves should do the same to their own supply-chain, making sure suppliers follow best practice and pass on down the chain. This role is often performed by the procurement department, which would check that any supplier has valid credentials and is following best practices.

The network infrastructure of the supplier's network is the final piece of the puzzle. The supplier should regularly restore backups to ensure they are working correctly and include all the required mission-critical data. It must put a business continuity plan in place and test it regularly, as a disaster for the supplier could ultimately be a disaster for any partner.

Conclusion

The policies and procedures operated by a supplier are as important as those operated by its partner as they are both in the same chain. Therefore, making sure they are up-to-date, audited and followed is as important to the partner as it is to the supplier. Building a working partnership is about building trust and working together. Only through adhering to agreed working practices can any partner be sure that it has aligned with a company that keeps cyber security at the forefront of its business needs.

Example Assessment Flow Diagram



How to Choose Your Supplier

Introduction

Vendor selection is a process businesses go through when choosing a supplier to fulfil a business need for a product or service. Before you select your supplier, you should assess them in a number of areas and the assessment should cover two main purposes:

- a. When reviewing multiple suppliers, it helps the business understand which supplier is the most appropriate for what you require, and
- b. The assessment should highlight what risks there are to the business arising from the potential use of the suppliers you have assessed.

Supplier assessments can be carried out by a combination of different methods such as:

- **Research** and industry data gathering.
- **A telephone interview** to gather the data. This is similar to an audit, but you rely on the honesty of the supplier as you are not witnessing any evidence of the answers it is giving.
- **A questionnaire.** The onus is put on the supplier to commit its answers to paper, thus giving an audit trail. The supplier also has to sign the document.
- **An audit.** This is the recommended method if the value/criticality and/or complexity of the part or service to the business is high.
- **The use of relevant references** to establish the experience of others in using the supplier.

Once you have concluded the assessment and selected your supplier, providing the supplier is classed as satisfactory or better, the supplier is classed as approved.

Newly approved suppliers should be given extra attention when you monitor and review their performance for either the first few purchases or for the first six months of trading together with your organisation.

What if Time is Short?

Sometimes you will need to expedite the selection process rapidly and reduce the full process, if the requirement to the business is very urgent. In these instances, you should assess the risk to the business and produce mitigation plans to ensure all risk is kept to a minimum, and that the advantages of the approving the supplier rapidly, outweigh the risk of not following due process (e.g. contract performance bonds and liquidated damages would apply for a late delivery, and a late delivery will be inevitable unless the suppliers are approved rapidly and placed under contract).

When time is short, the customer will only make a cursory check of the areas below. The areas below follow best practice where time permits. Businesses should try to build processes into their quotation or bid phase that allow for these checks.

Areas of Assessment

A list of the main areas in which to assess potential suppliers is outlined below, along with key questions to be answered. The subsequent section then goes into more detail for each area.

1. **Capability**
Does the supplier have the technical capability to produce the product/or perform the service you need?
2. **Capacity**
Does the supplier have the resource – both in people and equipment required to satisfy its current order backlog, its future forecast and to fulfil your requirements?
3. **Delivery**
Does the supplier have an acceptable on-time delivery record?
4. **Quality**
Does the supplier have an adequate management system (such as ISO 90001)/ any other standards or control systems to demonstrate that it can adequately manage its quality?

5. Cost
Does the cost of the products or services reflect the value of the product?
6. Financial Stability
Does the supplier's financial accounts show a stability that would allow it the smooth running of an organisation in both fulfilling its and our business commitments.
7. Safety and Ethics
Does the supplier demonstrate both a safe and ethical working environment?
8. Cyber Security
Does the supplier have sufficient protection to protect it from a fatal cyber-attack that would disrupt its everyday business continuity?
9. Business resumption plans/Disaster recovery.
It is essential that this is checked for difficult to source or sole source products or services. Does the business have a robust, well documented business resumption plan (sometimes referred to as a disaster recovery plan)?
10. Security of Information
Does the company understand its obligation with regards to the control of personal data?
11. Social Responsibility
Does the business show social/corporate responsibilities when conducting its business?

Expansion of the categories:

1. Capability
What capabilities you require the supplier to possess depends on the requirement. The standard areas of capability refer to:
 - technical capabilities - either product or staff depending what you are procuring
 - production capabilities - production equipment, verification and test equipment and processes
 - project management capabilities - very important in development purchases and certain services.

When carrying out the vendor assessment, the quality assurance or supply chain representative would pull in a local expert to assess this area.

2. Capacity
Each area you have assessed in capability above needs to be checked for free capacity. It would be foolish to approve a supplier based on its technical ability if it did not have the capacity to deliver what you require in the timescales you require it, and vice versa. Capacity plans are assessed by understanding the amount of capacity (either human or machine) that you need to deliver your requirement, against how much free capacity the company has after all its current firm order commitments and forecast commitments have been taken into consideration.
3. Delivery (schedule to requirement)
In line with assessing the company's capacity, the assessment should also focus on the company's ability to deliver on time to the contract/purchase order requirements. This would involve assessing the company's planning ability, production performance against the planned schedule, and its own supply chain performance. The assessment would usually look at key performance indicators applied in these areas (the company's on-time delivery, yield for the applicable product, the number of open work orders together with first-time pass-rate of products, scrap, and supplier on-time delivery and reject rates). Reviewing these metrics would highlight any potential deficiencies.
4. Quality
The quality assessment will go across many departments within the business and be a key pulse check of the performance of the business. Areas to be reviewed should include the following, but are not necessary limited to:
 - a. Change management process and controls
 - b. Corrective action process, including preventative actions
 - c. Management of its own supply chain and the procurement of materials/services
 - d. Control of defects – internal and external defective parts
 - e. Current on-time delivery performance
 - f. Risk-based quality audits, both internal and third-party/external
 - g. Customer satisfaction – feedback, complaint handling best practice and senior management reviews twice a year or more frequently demonstrate the business takes the quality of output very seriously.

5. Cost

Best practice would be to select a supplier from a pool of suppliers that have been benchmarked against each other (usually three or more quotations would have been requested). The ideal situation is where the chosen supplier has the lowest cost solution; however this will not necessarily be the case. In these instances, the customer should provide written justification as to why it has selected the chosen supplier. This could be for reasons such as technical differences (functionality) giving advantages over the other products, lead time of the product or performance of the products. However, it could also be because the lowest cost supplier is a higher-risk supplier.

6. Financial stability

The financial stability of a company is sometimes ignored as it is deemed as low risk, but to the peril of the contracting company.

Problems with a supplier of low financial stability can be as follows:

- a. The supplier goes into receivership before contract completion (including the warranty period), therefore any outstanding work needs to be resourced urgently.
- b. Late payments to the supply chain due to cash flow constraints leading to lack of relevant inventory or the supplier's supply chain delivering late – both leading to an overall late delivery.
- c. Product quality reducing due to the supplier trying to cut corners and costs in the process.
- d. Key staff retention issues due to unrest within the business.
- e. Lack of investment into the business resulting in key production inefficiencies.

Financial stability is essential if the product or service is sole sourced, or the procurement phase has a long gestation period, as the longer the period, the higher the risk of change.

7. Safety and Ethics

Companies are obliged to provide a safe and ethical working environment for all employees and visitors. Leading companies, as part of their due diligence, will check both of these areas:

- a. Safety – the safety assessment will be a physical audit of the work place, a review of the health and safety meeting minutes and should include risk assessments and method statements where applicable.
- b. Ethics – both the business's employees and the business's supply chain should have an understanding of ethical standards and compliance to them such as anti-human trafficking, ethical sourcing (e.g. conflict minerals and counterfeit materials), etc.

8. Cyber Security

With today's continuous cyber threats, all companies need to have an end-to-end approach to ensure a secure environment. This must be extended through the supply base and the supplier's supply base. ISO 27001 has become the internationally recognised standard for security throughout all aspects of business and is a good benchmark to look for in suppliers.

An example is the UK Ministry of Defense (MoD) which has built a multi-layered initiative called the Cyber Essentials Scheme to which suppliers must be accredited if they wish to supply the MoD. While the Cyber Essentials Scheme targets suppliers to the MoD, this does not have to be the standard for auditing. Businesses should be encouraged to audit their own suppliers to ensure that they achieve some level of information security compliance, whether that follows the ISO 27001 standard, the Cyber Essentials Scheme, or other recognised compliance frameworks.

9. Business Resumption Plans

All businesses should have a business resumption plan that is well documented and easily accessible if a disaster happens. The plan should include the following areas:

- First response team
- Emergency response plan (critical staff, premises, IT and telephone systems, communication protocol to employees, customers and suppliers)
- Business resumption plan
- Vulnerability and risk analysis
- Mitigation strategies.

If the supplier provides a difficult-to-source product or service or is sole sourced, then it must have a robust business resumption plan that also predicts the number of days/weeks it would be unable to supply a product if a disaster happened at the business. If it does not have this, it poses a significant risk. The business should then plan stock levels accordingly.

If the supplier provides a commercial off-the-shelf offering, then the supply chain team should mitigate the risk by having the details of an alternative acceptable supplier.

10. Security of Information

The EU and any countries requiring personal information from individuals working within the EU have an obligation to comply with government legislation (General Data Protection Regulation EU 2016/679) when it comes to the control, handling, storage, usage and destruction of personal data. This legislation comes into effect from May 2018, and supplier's processes should be assessed to ensure they comply with this regulation.

11. Social responsibility

Some leading companies now consider areas when selecting vendors that are under the banner of social responsibility

These are areas such as:

- a. The supplier's impact on the environment and/or commitment to improving the environment.
- b. The assistance it gives the community it lives within, for instance local charities, local schools and/or science, technology, engineering and mathematics (STEM) projects.

Social responsibility usually takes a lower weighting in the overall supplier assessment but in some instances it can make up to 10 per cent of the total mark.

Other Methods for Approving Vendors

Other methods of approving vendors for use:

1. Approval for Convenience/Necessity

Sometimes suppliers will be selected out of convenience/necessity and no others (or few) are properly considered or assessed due to the speed the product or service is required. For certain products or services, no comparison with other vendors due to convenience is acceptable as long as the risks to the business are low and the product/service being procured is simple. However, to ensure that costs are as competitive as possible, this is not recommended as a best practice.

2. Customer Requested Suppliers

There may be instances of customers requesting the business to use a particular supplier. This should not stop the business from following its normal selection process. If the vendors are found to be unsatisfactory, then this should be discussed with the customer and a solution sought.

Performing the Assessment

Who will assess the supplier depends on the size of the company. It is usually performed by the supply chain/procurement functions in conjunction with the QA/mission assurance (MA) teams. The supply chain/procurement team will normally be the lead, as it has the business requirement to use the supplier, and is responsible for ensuring the assessment is achieved in a timely manner. Other team members, depending on the complexity of the purchase, would be from technical/engineering functions/ finance and programme management.

Parties Required for Final Approval

To approve a supplier for use, and to prevent fraud within the procurement process, there should be a three-way check for final approval of a supplier. This should be by the following functions:

- Procurement
- Any of the following departments: QA, MA, engineering
- Accounts payable

Each function should sign to approve the supplier thus ensuring that it is a genuine business, of the right quality/capability/cost and there are satisfactory payment terms for the business requirement.

Ongoing Vendor Performance Monitoring

Once approved, relevant parties should monitor the supplier's performance against the above criteria quarterly and have their records updated accordingly. Relevant parties usually include members from the following functions: purchasing, quality assurance (QA), engineering, technical if applicable, programmes if applicable.

Contractual Considerations

Introduction

The following is a brief description of core contractual considerations that both a supplier and buyer should consider when negotiating a contract. It is not intended to outline the full scope of contractual provisions, but to highlight key areas that should be included in a purchase contract.

It is important to note that this is not to share any trade secrets but rather to show each party what the others will need to consider and therefore enable a deeper understanding of each other.

Appropriate contracting and legal advice should be sought prior to entering into any purchase agreement.

The descriptions of the provisions within this section attempt to address both customer and supplier viewpoints, pointing out some elements that a customer may want and how suppliers may potentially react to the inclusion of these provisions. This will potentially help enable a deeper understanding of each other. The benefits of this approach include the smoothing of the contracting process, highlighting potential pitfalls and therefore helping to make the whole process more efficient.

Contract Points to Consider

Contract Scope

A full description of the goods and/or services to be supplied or carried out.

If goods are being supplied, then a specification is appropriate, which may be based on either the customer's requirements or the supplier's product, or a combination of both. A thorough specification document should also include acceptance criteria. In order to qualify acceptance criteria, one should determine what is needed to adequately evaluate the product. This could include anything from factory acceptance testing to live site acceptance testing. These concepts are outlined in further detail below.

An excellent inclusion related to scope, is the addition of an all functioning clause in the contract. Many customers have failed to receive the promised

goods because, even though the product met all the individual product requirements, it did not perform the function it was intended to. Ideally a supplier would agree to language stating that the product was fit for purpose. Many suppliers will push back on this type of language, stating that it is too vague and provides too much of a broad warranty.

Another term sometimes used is installed performance, but this is not normally a viable option. Many suppliers will push back because the full operability of their product or system will depend on factors outside their control. For example, in the case of air traffic control, unless a supplier conducts comprehensive site surveys (which costs time and money) it is impossible to know whether there will be interference from other equipment at the same site.

In order to counter these arguments, customers can suggest that they define the purpose of the product in basic terms. For example, if you are buying a payroll system, contractual language could include the concept that the system will enable the company to issue payment of wages to its employees. A supplier would be hard pressed to argue why this language should not be in the contract.

However, if the customer's scope is too broad, the supplier will need to build risk into its offer, which pushes up the price. Taking the payroll system example, should it accommodate cash advances, mid-month payments, expatriate arrangements, multiple currencies, or the tax arrangements across different countries?

In terms of the provision of services, these should also be specified in some detail in a statement of work. Any warranty periods relating to goods and services supplied should be included. Typically, the detailed specification or statement of work should be attached to the contract as a schedule or annex.

Contract Price

This is the total amount and type of pricing (e.g. such as fixed or variable), along with currency and whether any value added tax is included or excluded.

The supplier should be obliged to provide sufficient information for the customer to understand and assess the detail of any pricing for new proposals or scope changes, including a fully itemised price breakdown according to the agreed pricing mechanisms. It should also provide information on option prices for any new or identified functions or add on requirements.

Confirmation of what is included in the price may be appropriate such as charges for packaging, packing, shipping, carriage, insurance, delivery and (if required) installation and testing of the goods and any duties imports or levies other than value added tax. Ideally, industry standard international commercial terms (incoterms) should be used.

Typically, prices of goods and services can be attached to the contract as a schedule or annex, where there is significant detail. A change request mechanism should also be included in the contract to ensure minimal disputes between the customer and supplier in the event a scope change (see Change Control below).

Payment Terms

Payment terms provide confirmation of what payment points will apply. Typically, this can be either on receipt of goods and/or services or based on agreed milestone payments, linked to activities and/or dates. If a customer fails to pay any amount without good reason, the supplier should be entitled to interest on the overdue amount. Untimely payment can also lead to termination for default. Large projects may require a down payment by the customer and in some cases this down payment is secured against a bank guarantee of performance. When dealing with international suppliers, the customer can keep costs down by using major international currencies (e.g. GBP, USD, EUR). Using less popular currencies introduces unnecessary currency risk, making the product/services more expensive to the customer.

Customers can keep cost down by offering to pay by letter of credit, which effectively links payments to the contract and guarantees payments when the contract milestones are fulfilled.

Where customers are buying services from abroad, the relevant taxes (e.g. withholding tax or VAT/GST) should be highlighted. This avoids the supplier adding costs associated with the risk surrounding the uncertainty of the applicability of these taxes.

Invoicing

Invoices should be rendered at the time specified, or where no time has been stated, at the later of delivery, installation and/or completion or performance of the goods. Invoicing details, such as address or instructions should be included. A description of what constitutes a proper invoice is also helpful, as it permits the customer to outline the information that is required to receive prompt payment and as long as the supplier provides the information, there is no reason for the customer to delay payment.

In addition, suppliers should accommodate the varying needs of customers when breaking down their invoices. Some customers require a specific layout, particularly where they are responsible for customs clearance. Some customers may assign different elements of a purchase to different cost codes or projects (e.g. some elements may be capital purchases, whilst others are opex purchases (operational expenses), some elements may be for the north region and some for the south region, etc.).

General Warranties

Below is a list of warranty considerations:

- Goods should be without defect (including defects in design)*, of sound materials and workmanship and conform in every respect to the contract description.
- Goods should be of satisfactory quality and be fit for the specified, or, if not specified, implied, purpose (see Scope section).

- Goods and any services to be supplied should be produced, and conform to, and comply with, all applicable laws, including those relating to the manufacture, packaging, packing and delivery of the goods. The supplier would expect and require the customer to be specific about the laws being referred to.
- Goods should perform and function in accordance with the contract for the period specified, or if not specified, such period as is reasonable in the context of the contract.
- Goods are sold with full title guarantee and free from encumbrances.
- The use or possession of the goods by the customer does not and will not infringe the intellectual property rights of any third party.
- In respect of any services, the supplier confirms that they will be performed by appropriately trained and qualified personnel, with due skill, care and diligence and in accordance with good industry practice and in addition thereto to the standards (if any) required by the specification or statement of work.
- The supplier shall have the power and authority to enter into the contract and supply the goods/services.

*Ideally. However, most software or system purchases will include a number of defects. It is therefore important to categorise the gravity of the defects (critical, major, minor) and have the supplier sign up to turn around times for responses and defect reparation (response and fix times). This can be included as part of the warranty for a certain period of time, and then be part of a maintenance agreement between the customer and the supplier (see Defects below). Implied warranties should be excluded. These are certain assurances that are presumed to be made in the sale of products or real property, due to the circumstances of the sale. These assurances are characterised as warranties irrespective of whether the seller has expressly promised them.).

Support and Maintenance

If required by the customer, the supplier will provide support and maintenance services on terms set out for the period specified. If requested, the supplier will supply spare parts and components which are of the same specification as the parts or components that they are to replace for the period agreed.

Suppliers will usually demand compensation for any support or maintenance. If the customer insists on the inclusion of such support as a warranty, then

the base cost of the system will inevitably increase. With product improvement, a like-for-like may not be feasible and therefore customers should be willing to accept a form, fit, function replacement.

Quality Control

The customer relies on the supplier's skill, knowledge and expertise to perform the contract. The supplier shall provide such quality control measures and such information as is specified in the contract or, if not specified, as is reasonably requested by the customer to meet its quality assurance requirements as applicable from time to time, with regard to the supply or manufacture of the goods. In addition to any other rights, the customer shall be allowed to carry out quality assurance tests. In this event, the supplier could ask to participate and be part of the evaluation process, and outline how this is done in the specifications part of the contract so as to avoid the lack of expertise of the customer interfering with appropriate controls.

Rights of Inspection and Testing

The customer shall be entitled to inspect and test any goods at any (reasonable, pre-agreed) time during the course of production or supply up to the time of delivery. Inspection of any consignment sample shall not be deemed inspection of the whole of the consignment. The supplier shall provide full access (subject only to such reasonable restrictions as are necessary) and all reasonable facilities to enable the customer to inspect and test the goods.

If, as a result of inspection or testing, the customer is not satisfied that the goods will comply in all respects with the contract, and informs the supplier within seven days of inspection or testing, the supplier shall take such steps to ensure compliance. Again, a diligent supplier will request that the customer not do these tests in isolation. The supplier should be present and testing criteria should be pre-determined and included in the contract.

Delivery

The supplier shall deliver the goods on the dates and to the consignment destination specified. In respect of services or work, the supplier shall perform on the dates and at the times and places specified or, if not so specified, as the customer reasonably requests in writing. The goods shall be suitably and securely packed and labelled as specified in the contract or, if not specified, as is necessary for delivery in good condition and working order and otherwise in compliance with the warranties. As mentioned earlier, industry standard incoterms should be used. The documentation required from the supplier should be explicitly stated. In some cases, delivery depends on government export approval and this will require an end user undertaking (EUU) from the customer. Advance planning is needed as these are very lengthy bureaucratic procedures.

Delay Damages

Delay damages are also referred to as liquidated damages, or LDs.

The customer can include provision for damages in the event of the supplier missing a critical milestone (which must be defined). Generally, such damages should be calculated with reference to the customer's potential or likely loss. Such damages can be capped by agreement, and the supplier will most likely insist on such a cap.

Customers must bear in mind some milestones depend on the customer's actions (e.g. providing clearance to enter the customer's sites, the customer obtaining visas to attend a factory acceptance test, etc.), and therefore the procedure to realign milestones must be simple and dynamic.

Acceptance Testing

The customer can conduct any acceptance testing that is set out in the specification or contract. Where no particular acceptance testing procedures are set out, the customer shall be entitled to inspect the goods and determine whether they comply with the terms of the contract. The customer is not deemed to have accepted goods until he or she has had a reasonable time to inspect them following delivery. In the event that the goods or any part of them fail to comply with the requirements of any acceptance testing procedure, then the customer shall be entitled to exercise any of the rights set

out in the acceptance testing procedure. When no such procedure has been agreed, or where such procedure contains no specific rights or remedies, the customer is entitled to remedies or rights of rejection provisions. A schedule or annex with details of acceptance testing can be detailed in the contract as appropriate.

A supplier will usually insist on being part of any detailed acceptance testing. Customers can take this as an opportunity to leverage the supplier's expertise and work together to ensure that the product meets all testing requirements. It is in neither party's interest for the system to fail and a certain amount of collaboration, as opposed to an adversarial pass/fail mentality, will result in a more successful product.

The cost of any factory acceptance test (FAT), training, or site acceptance test (SAT) should be explicitly stated, particularly to cover any re-FATs or re-SATs.

Remedies and Rights of Rejection

If any goods or services are not supplied or performed, or the supplier fails to comply with any of the terms of the contract or, the goods or services fail to comply with specified warranties within the warranty period, the customer is entitled to exercise certain remedies. For example, the customer could:

- Reject the goods (in whole or in part);
- Give the supplier the opportunity at their expense to rectify any defect or replace the goods or perform any services;
- To claim damages that may have been sustained in consequence of the suppliers' breach of contract.

Rejection of goods or claiming damages should be a customer's last resort. Providing the supplier with the opportunity to rectify the defects will ultimately cost the customer less. Relying on delay damages can be detrimental to the relationship and the ultimate delivery of the products.

Defects

The supplier will endeavour to correct the defects within defined agreed periods or such other period that the customer agrees to in writing. For defects that substantially affect the operation of the product or system, the supplier will remedy defects

within a short period (agreed upon by both parties) following written notification. For defects of a non-critical nature, the supplier will endeavour to remedy the defects within a medium period (to be agreed by both parties) following written notification.

The supplier will hope to include these remedies as part of a maintenance contract as earlier described.

Where relevant, the turn-around time should start from the time the repairable item arrives with the supplier (as the supplier should not be held accountable for delays in dispatching) and, in some cases, clearing the goods through customs.

Property and Risk in Goods

Property in goods passes to the customer on delivery or payment (whichever is the earlier) but without prejudice to the customer's right to reject them and all other rights the customer may have under the contract in relation to those goods. Risk of loss, damage, or deterioration shall be borne by the supplier until delivered (depending on the incoterms of the delivery). It is very important for both parties to perform a qualitative acceptance as soon as delivery is made.

Supplier Health and Safety Obligations

The supplier will ensure goods which it supplies may be safely used without any risk to health or safety. If this is not reasonably possible, the supplier shall notify the customer of any risk to health or danger from any goods or their use and advise as to what safeguards are required. If additional equipment or modifications are necessary to eliminate or reduce any risk to health or safety, this must be notified and carried at the supplier's own expense. The supplier will supply comprehensive and relevant information about the goods to allow the customer to safely operate, maintain and dispose of them.

Suitability of Supplier Staff

The supplier will ensure all employees, agents, subcontractors and representatives used by them are suitably qualified and have a sufficient level of skill and experience to meet the scope of the contract. If the customer is dissatisfied with the performance and/or behaviour of any of the supplier's employees, agents, subcontractors or

representatives, or considers they are unsuitable to meet its business needs, then the supplier will immediately on receipt of notification, withdraw such personnel and provide an acceptable replacement.

However, a supplier will not easily accept such broad interference with its operations. A more reasonable request would be to include an escalation mechanism of discussions if the customer is dissatisfied with the performance or behaviour of supplier personnel.

Work at Customer's Premises

The supplier will comply and ensure that all of its employees, agents and subcontractors comply with the customer's rules and regulations (including health and safety and security procedures) and any direction given by the customer with regard to the supplier's work at its premises. The supplier should insist on receiving these rules in advance from the customer, so it knows to what it is signing up. Best practice suggests that a customer provides a contractor's handbook to the supplier in advance of its on-site obligations.

Security and Safety

The supplier is responsible for ensuring its personnel who are required by the customer to have security and/or safety clearance to be given access to the customer's premises are supplied with the relevant security and/or safety questionnaire in a timely fashion. Persons awaiting security and/or safety clearance must be accompanied at all times while on the customer's premises by a person who has received security and/or safety clearance.

Change Control

Either party should be able to propose changes or additions to the contract in accordance with an agreed change control mechanism. Typically, this is started by submitting a change request to the other party. Proposed changes should always be assessed with reference to cost and time impact.

Confidentiality

The supplier must not use any of the customer's confidential information for a purpose other than the performance of its obligations under the contract, or disclose it without the customer's written consent. This can be made mutual as appropriate.

Intellectual Property Rights (IPR)

IPR existing in relation to the goods prior to the contract typically will belong to the party (or its relevant licensor) that owned such rights immediately prior to the start date. Both parties should declare this pre-existing IP. IP developed under the contract and by implication paid for by the customer should generally be owned by the customer. However, this is subject to commercial negotiations relating to price, what is being supplied and any commercialisation arrangements.

In addition, the consequences of copyright infringement of IPR should be addressed. In the event of a third party claim against a customer which has licensed software from a supplier, the contract should outline who will pay to defend such action, who will handle the defence, what happens to the use of the software in the meantime, and how the customer is to be compensated for the potential loss of the use of the software.

The customer must immediately notify the supplier if an intellectual property right claim is made, or if it is anticipated that an intellectual property right claim might be made. The supplier must then take action, keeping the customer updated. The customer must not deal with any claims, without explicit agreement from the supplier.

Customer Property

Specifications or property issued by the customer or supplied or manufactured by the supplier at the customer's cost will generally remain the exclusive property of the customer.

Indemnity

The customer can request an appropriate indemnity from the supplier for certain risks. Such risks could include any direct or indirect loss or damage suffered by the customer based on claims, actions or proceedings brought against the customer by a third party arising from any loss of or damage to its property or any personal injury (including, but not limited to death) suffered by such third party, arising from an act or omission of the supplier, any breach of contract or negligent performance. Appropriate legal advice should be taken to draft and agree these provisions.

Liability

Liability provisions are the key contractual clauses which are most often overlooked by the business unit. Liability (as is indemnity) is perceived as a legal clause that is best left to the lawyers. However, the lawyer or supply chain specialist is not as aware, in most cases, of the total implications of a failure or incident related to a product failure as is the business unit.

In certain cases, a system failure can be catastrophic for an organisation. A business unit needs to discuss with its supply chain or legal counsel as to the amount of recoverable damages that the organisation would need to replace a system, start a whole project again, install a new product, etc. Is the amount needed five times the value of the contract? Is it ten? The discussions as to the amount of damages will include many other factors besides product failure, but product failure is a key contributing factor. Inevitably, the supplier will attempt to cap its liability to a specific or lower amount. The norm is to cap liability at the contract value. Claims relating to IP normally fall outside this cap.

Insurance

The supplier should be required to obtain and maintain appropriate insurances from reputable insurers to cover the liabilities assumed under the contract. These liabilities and the types of insurance should be suitably detailed. The supplier should provide documentary evidence that it is insured against these liabilities, in the form of a certificate from its insurance brokers and its terms and conditions.

Contract Management

Technical and management issues and matters relating to the contract should be dealt with in accordance with a set of agreed provisions. Both parties should nominate appropriate points of contact and these representatives should agree regular contact to discuss ongoing issues relating to the performance of the supplier's and the customer's obligations under the contract. A schedule or annex with details of contract management can be included as appropriate. For complex projects, consider the location and frequency of meetings.

Termination

Typically, the customer will include a full range of options to terminate the agreement for supplier default, including failure to perform, site misuse, insolvency, change of control, failure to provide the parent company guarantee (when applicable) or failure to provide a bank guarantee (when applicable). The supplier will have termination rights for non-payment or customer insolvency. The customer can also include the right to terminate for convenience but is required to pay the supplier its incurred costs. Remedy and notice periods should be included.

As there can be significant consequences to termination, these should be addressed within the contract document itself. For example, what happens when a cloud services contract is terminated? What happens to your data? Is it deleted? How quickly is it deleted? Do you get it back? And if so, who pays for importing your data back into your organisation or to someone else's? All the above can become extremely complex and your standard termination provisions need to be evaluated carefully and challenged.

Dispute Resolution

An appropriate approach to resolving disputes should be included. Initially this should be through escalation within the organisations and then ideally arbitration before any legal recourse.

Assignment and Sub-Contracting

Neither party should be able to assign any part of the contract without prior consent. The supplier should not be able to subcontract its obligations unless it first obtains the prior written consent of the customer. The supplier can ask to limit this obligation to subcontracting a substantial part of the contract, thus avoiding having to receive consent for minor subcontracting of the obligations.

Force Majeure

Neither party should be liable to the other for any delay nor its failure to perform any of its obligations hereunder, which delay or failure due to a force majeure event. Each party should exercise its best efforts to mitigate the extent of the excusable delay or failure and their adverse consequences and to recommence performance of the affected obligations to the extent reasonably practicable.

Defining what constitutes a force majeure has become critical in recent years. This clause used to be standard and limited to acts of God and war. Recently, this term has been broadened to include strikes, riots, acts of terrorism and even internet outages (in the case of cloud contracts). It is therefore important to review this clause and negotiate the appropriate level of risk which is acceptable to both parties. In particular, government action should be included, as an export licence may be required before goods can be despatched.

Waiver

Neither party is deemed to waive any of their rights or remedies unless the waiver is in writing.

Publicity

The supplier should not make any press announcements or publicise the contract without the prior written consent of the customer, which should not be unreasonably withheld or delayed. The supplier should request an exception to this clause regarding the announcement of contract signature.

Severance

If any provision of the contract is held invalid, illegal or unenforceable for any reason by any court of competent jurisdiction, such provision shall be severed without effect to the remaining provisions.

Entire Agreement

The contract, together with the documents referred to or attached to it constitutes the entire agreement and understanding between the parties in respect of the matters dealt with in it and supersedes, cancels and nullifies any previous agreement between the parties in relation to such matters. If there are many attachments, annexes and schedules to the agreement, an order of precedence should be outlined in the contract, thus settling any issues of contradictory language in advance.

Environmental

The supplier should regularly seek to identify improvements to the goods which benefit the environment and/or society. The supplier should seek to implement organisational controls to control and reduce harmful emissions to the environment and, on request by the customer, shall identify the key environmental impacts of the goods.

Protection of Personal Data

The supplier must comply at all times with appropriate data protection legislation. The compliance should be limited to the jurisdiction of the contract.

Notices

Any notice required to be given by one party to the other under the contract should be sent by email, deemed received upon successful transmission.

Governing Law

Confirms which country's law and jurisdiction will apply.

Contract Signature

The contract shall only be binding if signed by authorised employees of each party.

Electronic signatures are more and more prevalent. The acceptance or not of eSignatures should be clearly stated in the contract.

Effective Date

The effective date should be made clear. Agreeing the beginning time "T0" is important and may be referenced in milestones and liquidated damages. Normally, T0 would start on acceptance of a customer order and associated payment mechanism (e.g. a down payment or a valid letter of credit).

Anti-Corruption Compliance

You should reference specific anti-corruption or ethical compliance legislation of your jurisdiction and the supplier must acknowledge that it will comply.

Execution of the Contract

This section provides guidance on what to think about once the contract has been let and is being delivered.

Supplier Relationship Management Principles

Formal supplier relationship management (SRM) can provide a range of benefits to the customer organisation, including but not limited to:

- Applying a greater focus on strategic/priority suppliers to increase leverage and efficiency
- Establishing a clear purpose and rigour around why it wants to work with these suppliers
- Giving greater clarity on how governance and interactions should operate and identifying the people involved and their accountabilities
- Ensuring a practical and transparent approach to how the parties should engage
- Appropriate scrutiny of performance to allow for remedy and continuous improvement of the relationship
- An approach that supports the development of supplier capabilities to improve value delivery and exploring further opportunities to work together
- Streamlining processes to reduce internal costs, particularly through utilising systems

Segmentation

Effective SRM requires a clear, organisation-wide understanding of which suppliers are the most strategic to the organisation. Factors such as value, business criticality, dependency, risk, operational/technical integration, and long-term fit are all aspects that should be considered. Taking these factors into account, suppliers can then be categorised to ensure that internal resources are focused on priority relationships.

Strategies

Once suppliers are prioritised based on the segmentation approach designed by the organisation, the most important relationships should typically be subject to a strategy. The creation of a supplier strategy establishes a vision of where we want to be and how we intend to get there with the other party and should include inputs from all appropriate internal stakeholders. To support the strategy, a supplier management plan can be developed to provide the map of the SRM processes to be used and actions to be taken, together with appropriate responsibilities, to deliver the supplier strategy.

Governance

For priority relationships, a structure is required to manage the supplier on a day-to-day basis as well as the roles involved in those activities and skills and knowledge that team members will be expected to apply. Once a team structure with roles and responsibilities is defined, the next step is to formalise the on-going governance processes to make supplier management repeatable, transparent to management, and consistent throughout the organisation. This is likely to include a periodic review (at least annually) by key senior executives of both organisations. This joint executive review should look at past performance (since the previous review) and approve any critical areas that need improvement. It is also the forum for discussing strategic direction of the relationship and the extent to which respective business goals and objectives can and should be aligned.

Engagement

Organisations engaged in SRM should typically appoint relationship managers for their key relationships to act as the focal point in their business and be accountable for applying SRM processes. Relationship managers are responsible for ensuring their internal stakeholders in supplier relationships are engaged, as they perform a range of critical functions in supporting the management and development of suppliers. Relationship managers should be suitably qualified and have the requisite knowledge, skills and experience to perform the

task. To capture the main aspects of the day-to-day working by the organisations and give clarity to the participants, a joint relationship management plan can be developed to document joint objectives, key relationship data and relationship accountability (primary stakeholders and governance structure – confirming responsibilities for direction, overseeing progress and resolving problems and issues). It can also outline how risks, value creation and knowledge is shared and managed jointly. It should consider dispute resolution processes and escalation, as well as the arrangements around exit from the relationship and disengagement rules.

Performance Management

Management of supplier performance is a critical element of SRM, aimed at making improvements across a range of aspects of the relationship and agreed contract performance to meet defined service level agreements (SLAs) and targets. It should provide improved visibility and data to address supplier performance issues, as well as informing and supporting the teams that are responsible for governance and oversight of the success of the relationship. Having performance metrics within the contract can help in this regard. The performance measurement approach should measure, analyse and manage performance for the purposes of reducing costs, mitigating risk and driving continuous improvement in value and operations. The evaluation should be across key factors of the relationship such as commercial, delivery, technical capability, systems, etc. Performance, targets, requirements and expectations should be agreed in advance before the review period. The output is typically a score to enable the parties to measure like-for-like performance against previous reviews to gauge progress. Additionally, the customer should periodically seek feedback from its most important suppliers on their own performance and behaviours.

Continuous Improvement

Based on the output of the performance management process, there should be a joint improvement plan, primarily aimed at continuously improving the performance of the supplier over time but also looking to enhance the customer's performance, and to optimise the processes by which both parties interact. A plan should be created and updated regularly to address all identified opportunities for improvement and any innovation initiatives, with the output available to be reviewed both by stakeholders and at the regular executive reviews.

Development

Where buying organisations are highly reliant on suppliers (e.g. for complex requirements requiring technology solutions), a mismatch in supplier capability or performance can have a big impact on overall business performance and efficiency. Therefore, customers can benefit greatly through a close engagement with suppliers to focus on development. This offers the opportunity to work together to: close capability and performance gaps; develop new solutions; create a reliable and long-term source of supply; as well as provide access to new ideas. In particular, for the supplier, it creates additional opportunities and enables the development of a long-term relationship.

Systems

While successful SRM is largely driven by changes in policies, processes, roles, and supplier agreements, effective systems are a critical enabler. Systems enable SRM by providing standardised tools/templates, supplier relationship data/management and enable far greater relationship visibility.

Continued Relationship

Accounting and preparing for the end of the contract is also a part of supplier management. Determining whether you are to continue working with the same supplier can assist you in the next negotiation phase.



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