IT Procurement - Tools to Help Select an IT System

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INTRODUCTION

This document discusses how to evaluate different potential solutions using a decision matrix. It also provides key questions to ask a prospective IT system supplier.

EVALUATING SOLUTIONS USING A DECISION MATRIX

Once your government has developed a set of requirements desired in the final IT solution, a system design will need to be completed. This will identify the different components the system should have based on the needs identified in the requirements.

A comparison between the different potential solutions can be made **using a decision matrix** that considers factors such as:

- Total cost of ownership (TCO)
- Licensing models
- Hosting options
- Knowledge investment
- Hardware requirements
- Data Privacy
- Data Security
- Availability
- Backups and archiving
- Service and maintenance

See the list of questions to ask suppliers below for ideas about what criteria should be in your matrix. Creating a decision matrix will allow your government to evaluate and compare the different proposed strategies. Your government will need to determine the selection criteria and the criteria may be different for each project. The Project Management Institute's online library has articles regarding decision matrices:

PMI - Select and prioritize project with the MESA® (Matrix for the Evaluation of Strategic Alternatives)

Build vs. buy decision matrix

Once your government has developed a set of requirements that you desire in the final solution, a decision will need to be made as to whether the system should be built in-house or if a solution should be bought. This may be divided into sub-components (such as for hardware or software) and requires careful considerations based on what the solution will do, the estimated TCO for a proposed solution, and the available timeline and budget. Both building and buying a solution have risks which can be modeled with this tool.

Risks: Building	Risks: Buying
• **Internal costs/opportunity cost:** Could resources be used more effectively elsewhere? • **Quality compromise:** Can the required level of quality be achieved? • **Technical deficit:**	• **Data privacy issues**: For cloud-based solutions is there a risk of having data exposed? Where is the storage location? • **Security risks**: Is the vendor compliant with industry accepted security practices?

The team may not have knowledge to build or deploy the proposed solution. • **Economies of scale:** Does the cost to build justify the value gained by your government?	• **Feature limitation:** Does the solution adequately solve the problem? • **Potential vendor lock-in:** Dependency on the provider's solution and business success. If they stop operating what happens to the data and solution?

To help with this decision, your government can use a build vs. buy decision matrix that can be used to rank different factors in the decision. See an example build vs buy decision matrix here.

QUESTIONS TO ASK SUPPLIERS

Here are a few key questions to ask prospective IT system suppliers:

- **Software licensing:**
  - How much does the software license cost?
  - How often will the license need to be renewed?
  - How many people can use the software in total and simultaneously?
  - What are the terms of the license?
    - For custom software: Can we customize the software? Do we get access to the source code? Can we transition to another developer without undue cost? Who owns the customizations? If and how long will support be available?
    - For commercial software: How can we assure access to our data? Who owns the data? Is there export functionality that allows us to access our data in an open, standard format if we outgrow the software or need something the software does not provide? How long will the software be supported if the service moves to end-of-life?
- **Expertise required:**
  - What personnel are needed to maintain the system?
  - What training is required for users?
  - What training and support does the supplier offer?
- **Product roadmap:**
  - What will the product look like 3 months, 6 months, 1 year from now?
  - Are there key features that will be released or removed?
  - What kind of support does the vendor offer for upgrades/new releases, and what is the cost for major upgrades?
- **Integration, extensibility, and functionality:**

  - What application programming interfaces (features that allow different software systems to interact with each other) exist?
  - What features are available with the basic installation and what features require licensing extra modules?
  - What integrations already exist with other software?

- **References:**
  - Who is already using the system?
- **Data residency and privacy:**
  - If data will be stored in the cloud (servers accessed over the internet), is the server located in Canada?
  - Will data move through any other countries?
  - Does the vendor claim ownership of the data or use the data for purposes other than our needs?
  - How is the data secured? Is there encryption in transit, at rest, end-to-end? Will the vendor sign an appropriate NDA and agree to not reuse private data? What is the vendor's data breach policy and notification plan?
  - Can data be completely removed from the system or is it merely marked deleted?
- **Hosting and availability**:
  - What service level and level of availability is required by your government? What service-level agreement (SLA) and uptime guarantees can be made? Will the system require multiple servers or geographically-distinct deployments to guarantee uptime?
  - Where will the system be provisioned? Does it run on our individual workstations? Do we need to deploy our own servers, in-house, co-located in a datacenter or rented from a datacenter or cloud service? If in-house, do we have the necessary infrastructure (e.g., network connectivity, power backups, security, fire suppression) to assure uptime, reliability and who will provide support and management?
  - How are data backups managed? Are we able to access the backups or does the vendor manage them? How quickly can backups be restored? How much data may be lost when bringing a backup online? (See the document "Data Backups")
- **Comparability:**
  - Which other governments/organizations are using the system?