



Canada School  
of Public Service

École de la fonction  
publique du Canada



# AI Project Support Toolkit – Summary

# Overview

This document contains a suite of tools to help teams in product and project planning.

It's designed for where 1) experimentation with AI is the goal or 2) AI-enabled tools are under consideration as part of the solution set to a given problem.

This is the **summary version** listing key considerations and linking to supporting learning and tools; a full **AI project support toolkit** expands on GC use cases, evidence to date, organizational maturity assessments, and how to evaluate AI projects in context.

*Note: this is a compendium of available, or quickly developed, resources to respond to immediate need.*

*We plan, and would welcome, additions over time. **AI solution possibilities, internal data science and AI capacity, and business process and technology modelling** are priority areas for expansion.*

*Please contact the [CSPS Digital Academy](#) with suggestions for inclusions or improvements.*

# Key considerations summarized

1. Ensure the team is grounded in a **baseline understanding of AI**
2. Ensure the business owners and technology enablers are **working closely together**
3. Learn from **available evidence and comparable GC projects**
4. Leverage **problem framing, design, and experimentation approaches** to avoid mis-investment and to maximize clarity and shareability of results
5. Conduct an initial **viability assessment**, or at least evaluate:
  1. **Key elements** of the project
  2. **Data, infrastructure, and IM maturity** as well as **ethical considerations** in the context of the project
  3. Available **skills and expertise**
  4. **Overall maturity** and strategic business alignment
6. Make **skills, resources, computing power, and cloud-based and other tools** available if needed
7. If necessary, conduct an **Algorithmic Impact Assessment** or other governance and responsibility checks and balances

# Resources by need and project phase

This table of contents organizes available resources and tools by scenarios: what your team needs or what it is working on at the time.

| Phase or need  |
|--|
| I'm getting up to speed on <a href="#">AI basics</a>                     |
| I'm situating myself in the <a href="#">GC AI project context</a>        |
| I'm evaluating <a href="#">organizational readiness</a>                  |
| I'm exploring <a href="#">AI ethics, responsibility, and GC guidance</a> |
| I'm assessing <a href="#">project viability</a>                          |
| I'm <a href="#">scoping a project</a>                                    |
| I'm exploring <a href="#">AI solution possibilities</a>                  |
| I'm <a href="#">planning procurement</a>                                 |
| I'm <a href="#">planning internal data science and AI capacity</a>       |
| I'm <a href="#">experimenting with AI</a>                                |

# AI basics

## Artificial intelligence (AI)

A machine-based system that infers how to generate outputs such as predictions, content, recommendations, or decisions from the input it receives; Crucially, **AI systems adjust based on information processed, plus output feedback**

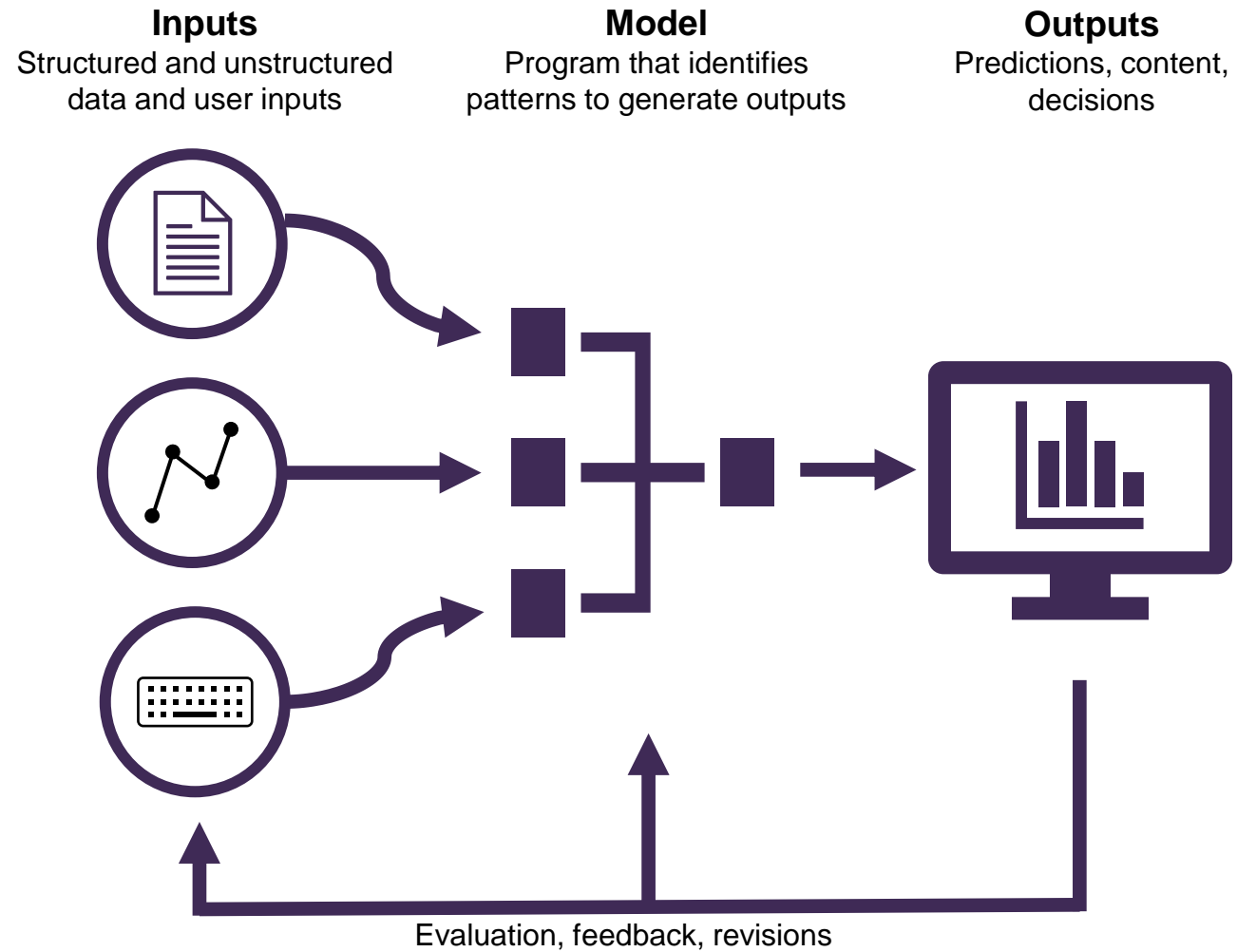
AI is also a **category of technologies**; a common explainer is “technology that performs tasks that would ordinarily require biological brainpower to accomplish, such as making sense of spoken language, learning behaviours, or solving problems”

## Resources on AI basics

You should ensure that everyone involved in the project has a foundational understanding of AI.

- Executive summary of AI including GC-specific considerations: [Primer on AI](#)
- Introductory course: [Discover AI](#)

## Simplified process flow



# Developing organizational maturity

While case studies and comparative analysis are only emerging, there are patterns that suggest which projects are most suitable to organizations as they advance up a maturity curve for AI. Organizations can be *assessing*, *intermediate*, or *determined*. At each stage, there are typical activities, success factors, and project types.

| Assessing / early maturity   | Intermediate / developing  | Determined / mature  |
|--|--|--|
| <p><b>AI project types seen at this level of maturity</b></p> <ul style="list-style-type: none"> <li>• Less complex</li> <li>• Simple Chatbots</li> <li>• Search and knowledge retrieval</li> </ul>          | <ul style="list-style-type: none"> <li>• Increasingly complex</li> <li>• Process automation</li> <li>• Components of client-facing services</li> </ul>   | <ul style="list-style-type: none"> <li>• Highest complexity</li> <li>• System-level workflows and integrations</li> <li>• Process automation and optimization</li> <li>• Client-facing services</li> </ul> |
| <p><b>Success factors</b></p> <ul style="list-style-type: none"> <li>• Motivated individual innovative team members</li> </ul>   | <ul style="list-style-type: none"> <li>• <b>Managing complexity</b></li> <li>• Business integration: exec support, change management, process change, and resourcing</li> <li>• Developing experience and capacity; insourcing core capability</li> <li>• Stakeholder readiness</li> </ul> | <ul style="list-style-type: none"> <li>• Successful transition to integrating technology into management, resourcing, strategy, and processes</li> </ul>   |
| <p><b>Key activities</b></p> <ul style="list-style-type: none"> <li>• How to launch projects</li> <li>• Attracting staff and skills</li> <li>• Developing partnerships</li> <li>• Experimentation</li> </ul> | <ul style="list-style-type: none"> <li>• Achieving strategic and business value</li> <li>• Coherent tech and process integration</li> <li>• Technological readiness</li> </ul>   | <ul style="list-style-type: none"> <li>• Scaling or smart sunseting</li> </ul>   |

Neumann, O., Guirguis, K., & Steiner, R. (2024). Exploring artificial intelligence adoption in public organizations: a comparative case study. *Public Management Review*, 26(1), 114-141.

# Ethical considerations

There are a number of ethical considerations regarding AI, and navigating those successfully is crucial to 1) responsible use of AI and avoiding harms and 2) maintaining public trust. In some cases, this is likely to involve ruling out AI solutions to opting for alternatives.

CSPS has developed a course on [Ethical Considerations in AI](#).

It is also crucial to re-review the latest available guidance from TBS:

## Generative AI

Federal institutions – and federal public servants - are expected to align with the principles of fair, accountable, secure, transparent, educated, and relevant (FASTER) use of generative AI: [Guide on the Use of Generative AI](#)

## Automated decision-making

The [Directive on Automated Decision-Making](#) requires an [Algorithmic Impact Assessment](#) where GC use of AI supports, or renders, administrative decisions about individuals.

The Assessment determines whether a project is likely to have *little to no, moderate, high, or very high* impacts on:

- the rights of individuals or communities;
- the equality, dignity, privacy, and autonomy of individuals;
- the health or well-being of individuals or communities;
- the economic interests of individuals, entities, or communities;
- the ongoing sustainability of an ecosystem.

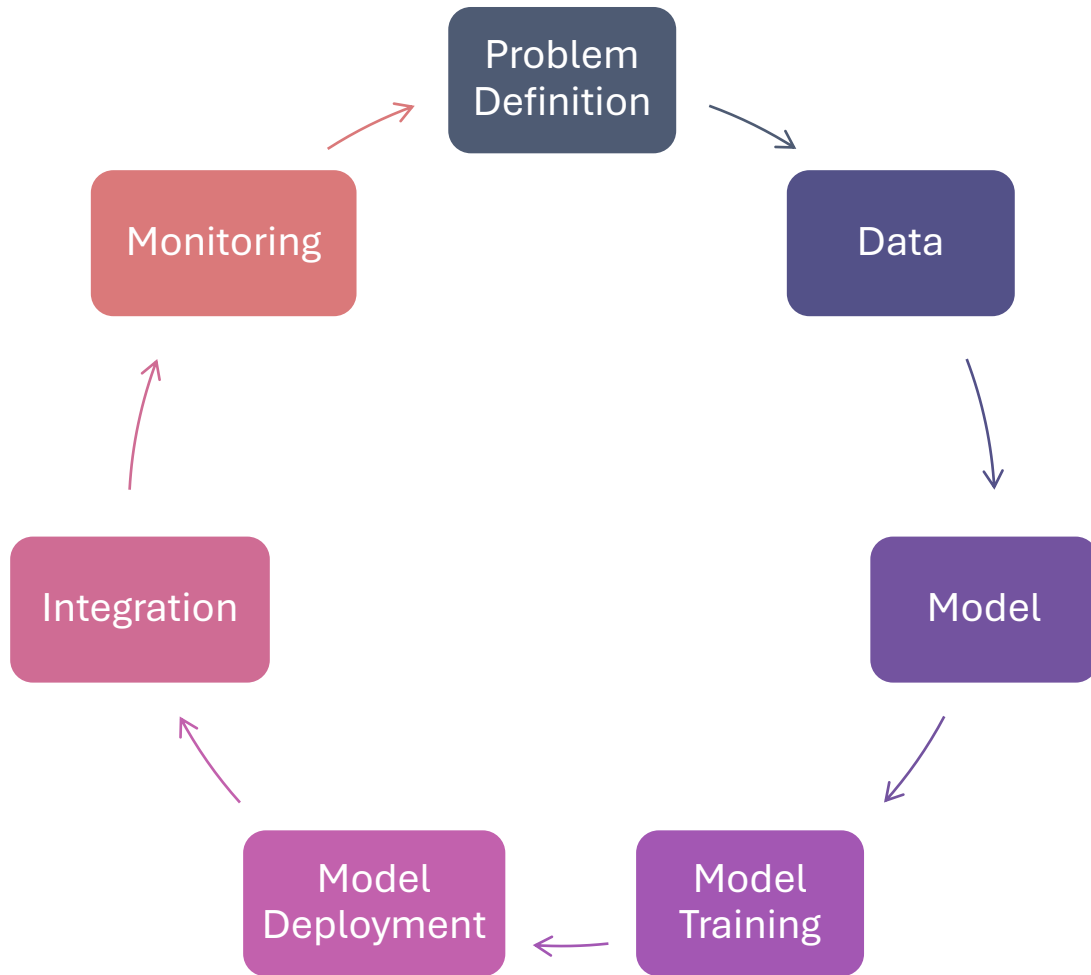
# Context elements: complexity

There are a few major elements for AI projects, and projects will take different shapes depending on the combination. This can also be used for a **rough complexity ballpark**: in planning the project and solution, consider how many project elements are on the *more complex* side of the spectrum, in columns 2 and 3.

| Element                  | 1<br>Simpler<br>Fewer dependencies | 2<br>It depends                     | 3<br>More complex<br>More dependencies  |
|--------------------------|------------------------------------|-------------------------------------|---|
| Software / model         |                                    | Proprietary<br>Open source          |   |
| Data context             | Data-agnostic                      | Dependent on readily available data | Dependent on well-organized data  |
| Delivery capacity        |                                    | In-house capacity                   | Vendor or partner   |
| Integration              | Experimentation                    |                                     | Operations / large-scale project  |
| Project scope            | Standalone tool                    |                                     | Integrated into back-end systems and data<br>Integrated into public-facing systems and data |
| <u>Usage pattern</u>     | Information search and retrieval   | Analysis and synthesis              | Automation<br>Decision aid<br>Decision automation   |
| <u>Org maturity</u>      |                                    | Determined / mature organization    | Assessing / early maturity  |
| User                     |                                    | Individual use                      | Workflow / systems  |
| <u>Use case maturity</u> |                                    | Mature / proven                     | Emerging / untested   |
| Solution maturity        |                                    | Mature / proven                     | Emerging / untested   |



# Project viability assessment



SSC's research, and project support experience, suggests that **successful AI projects** go through these steps starting with a **well-defined problem**.

Building on the previous project complexity assessment, we **recommend working considering each of the questions in the viability assessment**:

## Viability assessment questions

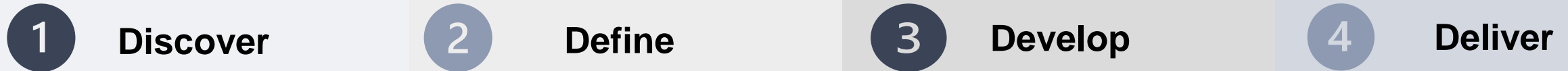
*Note: in the SSC model, different questions have different success and risk weights; these are not reflected in the question list.*

For large-scale projects, there is also the GC [Project Risk and Complexity Assessment](#), and departmental governance or enterprise governance may require concept cases, gating documentation, and more.

# Scoping a project: the design process

A foundational success factor in project success is taking the time to understand and **define the problem** to be solved, including building a **shared understanding between project proponents and delivery supports**.

CSPS has developed **foundational learning** as well as **process guides and templates** to support teams working through the design process with an emphasis on digitally-enabled projects and products.



## Steps to take

1. Meet with project proponents, stakeholders, and enablers, and colleagues who've done similar projects
2. Take stock of existing knowledge, assets, and understanding of the problem with a mission model canvas
3. Map supports and stakeholders: stakeholder map
4. Make a business analysis and research plan: research planning checklist
5. Conduct design research

1. Analyze and synthesize the collected data to identify patterns and key insights: qualitative data synthesis
2. Compose a problem statement as part of a wider problem definition process

1. Generate multiple potential solutions through ideation and conceptualization
2. Evaluate ideas based on feasibility, desirability and viability
3. Develop prototypes to test biggest assumptions and manage risk: prototyping and testing

1. Refine plan to measure the effectiveness and benefits
2. Develop detailed implementation plan with timelines, resources, and roles and responsibilities
3. Launch implementation

# Procuring AI solutions

The GC has developed a number of resources to support responsible procurement of AI-enabled solutions.

These can include custom design and build projects, integrations with existing software, and increasingly commoditized and mainstream AI tools.

Project proponents should connect through GC-wide AI networks and working groups to establish if other departments have experience with a solution set, or if a comparable custom design and build solution has already been procured.

## PSPC resources

- [Artificial intelligence source list](#)
- [Draft guidance tools to start AI procurement process](#)
- [PSPC AI procurement team email address](#)

## Supporting community resources

- [Potential challenge questions to ask vendors](#)

*Note: given the intense current interest in AI, researchers have identified a trend of software 1) being branded as AI even if based on rules and algorithms, or 2) having largely superficial AI integrations added.*

# Setting up an internal data science and AI capacity

The exact skills, data, and infrastructure requirements will vary greatly across contexts. The below is a representative list of requirements and steps:

1. Get **cloud** and/or **computing power** and provide access
  2. Migrate or build your **business applications and data**
  3. Give your people **access to modern data tools** and the equipment they need (e.g., GPU acceleration, Linux, access to libraries (Tensorflow, Keras, PIP, NPM, Git, Maven, etc.))
  4. Train or find **specialized expertise**
  5. Start running **modern analytics and visualizations** to understand your data
  6. Build your **DevOps capacity** (version control, testing, continuous integration/deployment, containerization, cluster computing)
- 
7. Pick a **business problem**
  8. **Develop and test** your models 1) continuously and automatically and 2) with a multi-disciplinary team
  9. Develop a **data pipeline** around your models
  10. Improve **policy, service, and program outcomes** using AI

Organizations need to work through steps 1-6 before they're ready for steps 7-10.

# AI experimentation

Many departments are experimenting with AI solutions. To set up a test with clear success and failure measures, teams can answer a series of questions about test parameters based on the goals of the experiment and how they'll assess results. This will support our **ability to share successes and learning across the GC.**

## Participants/population

What are you targeting?

- Public servants
- Program users
- Process and workflow
- Other

## Comparator/control

To what will you compare your intervention?

- Baseline data
- 'Business-as-usual' practices
- Another intervention
- Available benchmarks

## Intervention

What are you trying to do exactly?

- Fill a knowledge gap
- Test at small scale before roll-out
- Test assumptions and what works
- Establish a cause-effect chain
- Building buy-in by piloting
- Other

## Outcomes

What will you measure?

- Behaviours
- Performance
- Responses
- Other

The following slides are templates for teams to fill out to define an experiment in this space.

# Experiment template: part 1

## THE BASICS

Describe the experiment

What's the objective?

What's your hypothesis?

What are your biggest assumptions and uncertainties?

## EXPERIMENT FEATURES

Who uses the system that will be impacted?

How long will the experiment run?

What needs to be in place for this to happen?

## EXPECTED RESULTS

What will happen immediately?

What indicators will demonstrate that result?

Are there any long-term effects that may reveal later?

What indicators will demonstrate that result?

# Experiment template: part 2

## ADDITIONAL CONSIDERATIONS

Potential ethical concerns from an evaluation data lens

Security and privacy concerns

Potential data and indicator issues

## MARKER STATEMENTS

We think [X change or action] will result in [Y result]

We think [Y result] will be [above/below] [this threshold, percentage, or number] [display a certain characteristic or behaviour]

[Y result] will happen because [Z cause-effect chain]

# Full project support toolkit

For an overview of the GC AI project landscape consult this alpha resource : [AI Project Support Toolkit](#). This document is evergreen and will evolve alongside GC progress and projects.

Topics covered include:

1. GC use cases, opportunities, and examples
2. Key considerations and trends from available evidence
3. Organizational maturity and readiness
4. Skills, data, and infrastructure supporting AI projects
5. Success factors for technologically-enabled initiatives
6. AI viability model and assessment
7. How different considerations - risk, ethics, data, privacy, skills, infrastructure, maturity - manifest in different types of projects
8. How to evaluate AI projects
9. Policy guidance
10. Project planning considerations and processes
11. Experimentation guide and templates
12. Procuring AI
13. Developing internal capacity