"Ps & Ts in the Green. Warning Lights Off. Proceed As Planned".

A Practical Assurance & Governance Framework for AI Projects: A Guide for IT Programme Directors Who Must Run AI Delivery Safely

Introduction

Like delivering an Artificial Intelligence (AI) or Machine Learning (ML) project, piloting a helicopter is a complex, challenging and cognitively demanding undertaking. Neither are for the faint hearted.

Flying a helicopter is challenging due to a helicopter's complex controls, which are super sensitive to pilot input, and to a helicopter's aerodynamic instability when compared to fixed wing aircraft.

Helicopter aviation is also inherently dangerous due to a reliance (leaving aside twin turbine aircraft) on a single engine and the inability for a helicopter to glide down to terra firma like a fixed wing aircraft if the engine should fail. Pilots are trained to put the helicopter into an 'autorotation' (imagine a sycamore leaf spinning slowly the ground) but the pilot only has seconds to act.

However, from the moment that the pilot lifts the helicopter into the hover, they will use a series of checks to constantly monitor the aircraft's engine health and systems. As long as the 'Ps & Ts' are in the green and the 'warning lights are off', the flight can proceed as planned. Should there be any indication of engine poor health the pilot is trained to land immediately.

I believe such in-flight checks provide a strong parallel to IT project quality checks, often known as 'go / no go' stage gates, which are found between stages of a project to control, assess and govern whether the project has met the criteria of the current stage before proceeding to the next stage.

First though, it is worth stating the simple differences between the approach to an AI project and a typical Software Development Lifecyle (SDLC) approach.

If you skip either your 'inflight' helicopter engine heath and systems checks or your IT project 'go/no go' stage gates you do so at your peril.

How is an AI Project Approach Different to a typical Software Development Project?

Traditional project management and application development methodologies do not fully address the complexities of AI projects. AI solutions are data-driven, not just software-driven, requiring a systematic approach that ensures:
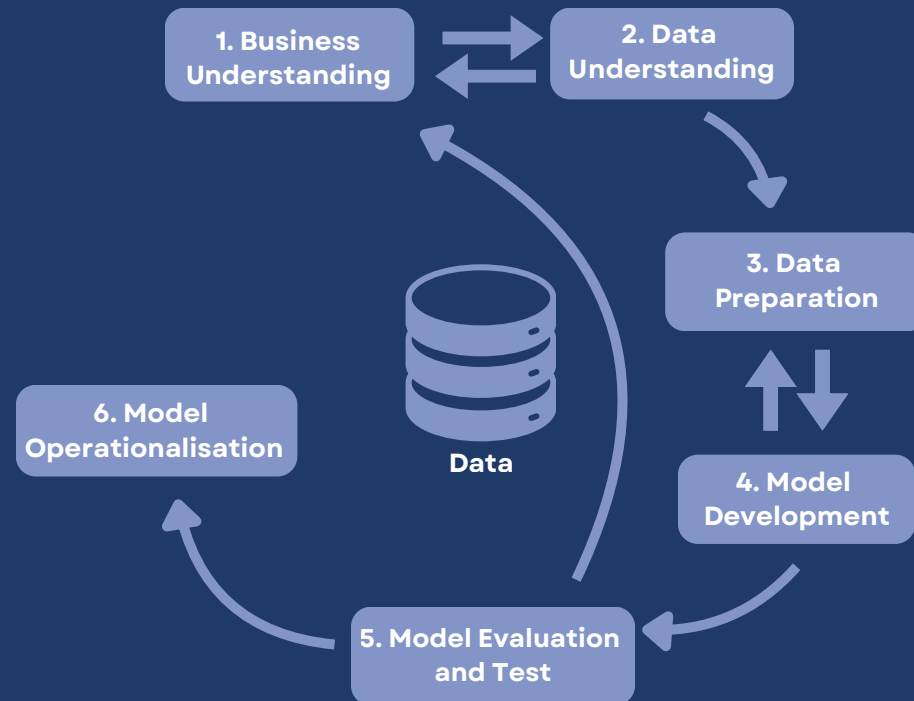
- Alignment with business objectives and ROI
- Proper data preparation and governance
- Robust model evaluation and operationalization
- Iterative development to adapt to changing data and needs

The most successful AI projects take the best aspects of an iterative and incremental agile delivery approach and combine this with the data centric, 'data first' approach of data projects. To execute an AI project it should be organised into six iterative stages along the lines of the following:

- **Stage 1 – Business Understanding** – focuses on understanding the project objectives, requirements, and goals from a business perspective.
- **Stage 2 – Data Understanding** - data collection needs, identifying potential data quality problems, and understand what data is still needed.
- **Stage 3 – Data Preparation** - prepare the required data in order to use it for your project.
- **State 4 – Model Development** - evaluate, selects & apply the appropriate modelling techniques.
- **Stage 5 – Model Evaluation and Testing** -test your model to make sure it's behaving the way you were expecting.
- **Stage 6 – Model Operationalisation** - put your model into the real world, and make sure it's behaving as expected.

How is an AI Project Approach Different to a typical Software Development Project?

Far from a linear checklist, these stages form a loop that incorporates ongoing feedback, continuous learning, and alignment with business objectives. These stages can be visualized as an iterative cycle.

1. Business Understanding ⇄ 2. Data Understanding
→ 3. Data Preparation
⇅ 4. Model Development
5. Model Evaluation and Test
6. Model Operationalisation

Data

Is this the way you, your other IT Programme Director colleagues, and your organisation is approaching its AI projects or are you trying to shoehorn your AI projects into an existing project management delivery framework? If it's the former you are on the right track, if it's the latter it might be time to reflect on the different characteristics of AI Projects compared to traditional software development projects and change your approach somewhat.

Addressing the High Rate of Failure of AI Projects

It is well documented that 80% or more of AI projects fail to deliver the promised impact or never move beyond prototypes *. These failures are not usually caused by the underlying AI technology itself but rather by how AI projects are planned, managed, and aligned to real business needs. Several common pitfalls are often used to explain this high failure rate:

- Lack of clear business alignment
- Neglecting data feasibility
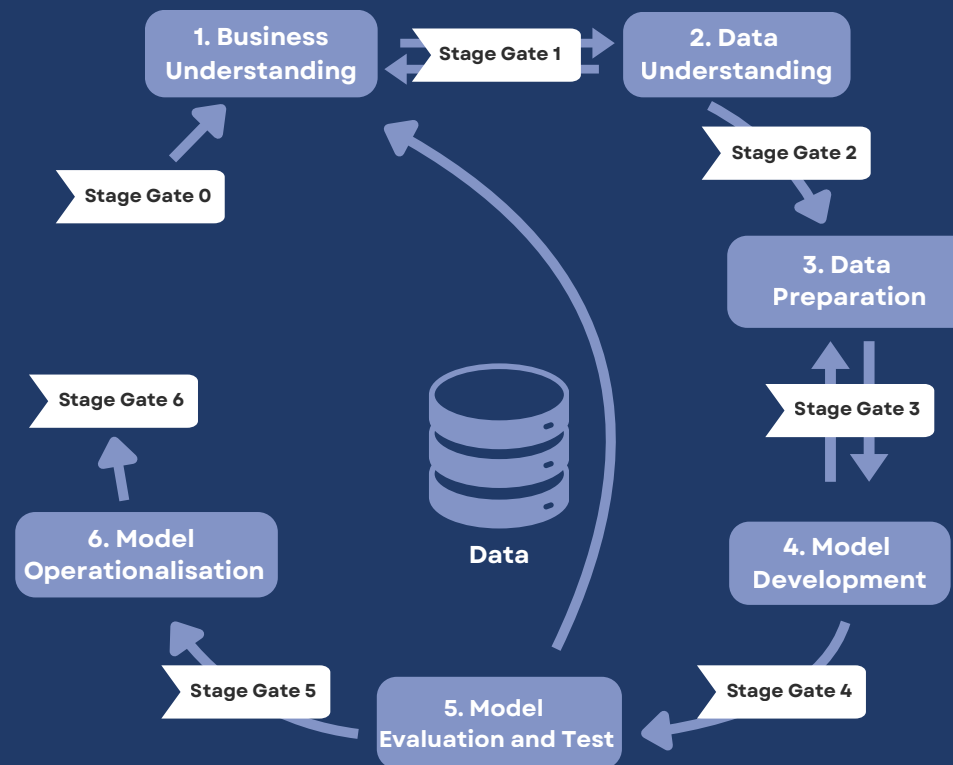- No plan for continuous updates

Analysis by FinTellect AI indicates that 80 percent of AI projects in the Financial Services sector fail to reach production. Of those that do, 70 percent do not deliver measurable business value. This is particularly striking given that Financial Service firms spent an estimated $35bn on AI initiatives in 2023, according to the World Economic Forum's 2025 white paper AI in Financial Services. https://www.financierworldwide.com (December 2025)

*(e.g. the MIT NANDA initiative, 'The GenAI Divide: State of AI in Business 2025', found that approximately 95% of corporate generative AI pilots fail to achieve a return on investment (ROI) or scale to full production; TechRepublic found 85% of AI projects eventually fail to bring their intended results to the business; Gartner has published research findings that 85% of Machine Learning (ML) projects fail; and, according to IDC, most organization polled reported failures among their AI projects, with a quarter of them reporting up to a 50% failure rate.)

Addressing the High Rate of Failure of AI Projects

Snell Consultancy has a successful track record in helping organisations like yours deliver IT projects and programmes whatever the most applicable and preferred methodology. But what we have seen repeatedly is that the inclusion of quality check points, otherwise known as 'Go / No Go' quality stage gates, at the appropriate points on the delivery roadmap, are a critical determining factor to IT project success. In our opinion, AI projects should be no different and the absence of these can be another critical common pitfall. Similar to helicopter inflight engine health and other systems health checks, leave them out at your peril.

Our approach to AI Project's stage gate management is based on that experience and explains what I and my colleagues would do to help you.

Another Common Pitfall – the Absence of AI Project 'Go / No Go' Quality Stage Gates

1. Business Understanding
Stage Gate 1
2. Data Understanding
Stage Gate 2
Stage Gate 0
3. Data Preparation
Stage Gate 6
Stage Gate 3
6. Model Operationalisation
Data
4. Model Development
Stage Gate 5
5. Model Evaluation and Test
Stage Gate 4

Seven Stage Gate Approach to AI Projects

Stage Gate 0: Project Kick Off Go / No Go – Start the Project

I will help you conduct an AI Stage Gate 0 Go / No Go Assessment to ask the obvious and not so obvious AI project pre-investment questions and document the answers. The assessment includes questions such as:

- Why do we have to deliver this AI project?
- Does it have to be done now?
- What does success look like in terms of ROI and key metrics?
- Is there a good strategic fit with other IT projects / programmes planned, or underway, and with wider organisational and digital strategies?

A 'Go/No-Go/Pause/Recycle' decision should be made and documented.

Stage Gate 1 Business Understanding - Proceed to Data Understanding

Before proceeding to Data Understanding you will need to ensure that you have mapped the AI solution to the business problem and for three things to be in alignment: the business feasibility, the data feasibility, and the technology / execution feasibility. Also, its worth checking the project's 'Trustworthy AI Requirements' at this point. e.g regulatory context (UK/EU/sector regulators), ethics and explainability, security and model integrity, operational gating criteria.

Your AI Project Stage Gate 1 Business Understanding Go / No Go Assessment will focus on questions like: Have you determined the business requirements? Why does the project's business objective need AI? Are there potential other non-cognitive solutions that could be used instead ? Which of the seven common AI patterns will the project use? How will the solution be used in a real world (production) environment ? A formal 'Go/No-Go/Pause/Recycle' decision will be made and documented.

SG 0: Start the Project

SG 1: Business Understanding - Proceed to Data Understanding

Seven Stage Gate Approach to AI Projects

Stage Gate 2 Data Understanding – Proceed to Data Preparation

The next step is determining what data is needed and whether it is sufficient in quantity and quality. From my experience this is where an AI project's potential pitfalls are really first exposed. Successful AI efforts depend on having the right data, at the right time, in the right format— and Stage 2 is designed to confirm this. So, the AI Project Stage 2 Data Understanding Go / No Go Assessment should cover:

- What any Data Source Inventory and Data Quality Assessment has shown about how ready your data sources for use on your AI project are?
- Is the location or locations of your data clear and the nature of the data clear (e.g. its Volume, Variety, Velocity, and Veracity)?
- Have the proper guardrails for data governance, privacy and compliance, essential to prevent ethical, legal, or reputational harm, been addressed?

Your AI solution is likely to fail if the underlying data is not up to the task. Lack of data, data privacy concerns, or uncertainty over data ownership can derail the best-intended plans. Identifying and solving these issues now dramatically increases the likelihood of success in later stages. A formal 'Go/No-Go/Pause/Recycle' decision will be made and documented.

Stage Gate 3 Data Preparation – Proceed to Model Development

By systematically planning and executing data preparation, you will maximize the chances that your AI project will succeed. Once the data cleaning, labelling and annotating, data pipeline development (both training and an inference or "production" pipeline) activities of this stage are completed you will be ready to hold the AI Project Stage 3 Data Preparation Go / No Go Assessment. Arriving at a formal 'Go' decision could be one outcome but if there are blockers it might be time to return to Stage 2 or return to Stage 1.

SG 2: Data Understanding – Proceed to Data Preparation

Daniel Green
Director, Data Management at EBRD

Ivan is an energetic and experienced programme leader who navigates the complexities and challenges of Agile delivery with confidence and clarity. A genuinely strong, diligent programme leader with tremendous drive and commitment.

SG 3: Data Preparation – Proceed to Model Development

Seven Stage Gate Approach to AI Projects

Stage Gate 4 Model Development – Proceed to Model Evaluation and Test

In Model Development your AI project should transition from the foundational data-centric work of the earlier stages toward creating, testing, and refining a working AI or ML model. At the end of this stage I would help you conduct an AI Project Stage 4 Model Development Go / No Go Assessment:

- Have you identified which algorithms would be most suitable for this iteration?
- Can you use or extend pre-trained models for this iteration?
- What tools and technologies will you use for model development?
- What technology requirements do you need for model training?
- Will you train your model on-premise or in the cloud?

Arriving a formal 'Go' decision could be one outcome but if there are blockers it might be time to return to Stage 3, Stage 2 or return to Stage 1.

Stage Gate 5 Model Evaluation and Test – Proceed to Operationalisation

This stage ensures that the AI solution is accurate, aligned with your organizational goals, and robust enough to handle changing data or conditions over time.

I would help you conduct an AI Project Stage 5 Model Evaluation and Test Go / No Go Assessment to help you make the final determination if your AI solution is ready for use in the real world.

- Meeting performance thresholds
- Stakeholder confidence and approval
- Determination of rollout strategy

Stage 5, we may arrive at the recommendation to loop back to earlier stages. This iterative mindset helps refine data, adjust modelling decisions, or even pivot to a different AI solution if needed. If there is a 'Go' decision made you can move to Stage 6 Operationalization.

SG 4: Model Development – Proceed to Model Evaluation and Test

SG 5: Model Evaluation and Test – Proceed to Operationalisation

Seven Stage Gate Approach to AI Projects

Stage Gate 6 Model Operationalisation

In Stage 6 Model Operationalization your team will be integrating their validated AI solution into your organisation's systems and workflows, ensuring the AI solution consistently delivers value and can adapt to inevitable changes in data, objectives, or real-world conditions. The process is sometimes referred to as "putting AI into operation or production" and it should also address continuous integration, monitoring, governance, and user adoption needs. Key considerations being:

- Determining Deployment Environments
- Real-Time Monitoring of AI Solutions
- Determining Model Lifecycle Management
- Versioning and Retraining Pipelines
- Relevant Trustworthy AI Concepts have been Embedded (particularly Governance)

In the AI Project Stage 6 Operationalization Go / No Go Assessment we would address whether your AI project needs to return back to one of the previous five stages because it has faced significant blockers during this stage or whether it is ready to be signed off as having successfully completed the first iteration and it can circle back to Stage 1:
Business Understanding, beginning the next iteration of continuous AI improvement.

SG 6: Model Operationalisation

Conclusion

It cannot be said that the use of AI project Go / No Go stage gates will guarantee the success of your AL or ML project, but if you've read this far you will already know that there are significant benefits to including them in your AI or MI project methodology.

Delivering any iterative or incremental delivery type IT project requires experience, judgement, and flexibility to navigate ever changing project needs with confidence and a smile. We've done it time and again at Snell Consultancy, it's what we get out of bed for every day and weird though it might seem, we relish the challenge.

So, if you're ready to put this guide into action and want expert guidance tailored to your specific AI or ML project, please do schedule a call with us during which we can discuss your AI project in detail and developing an AI project stage gate checklist tailor made for your organisation.

Ivan Snell is the founding Director of Snell Consultancy. For over 30 years he has made his career helping senior IT leaders, IT Programme Directors and Business Executives like you take a pragmatic, human focused approach to IT project delivery particularly with regards to agile projects that take an iterative and incremental approach to development including AI or ML projects.

SCHEDULE A CALL WITH IVAN AND THE SNELL CONSULTANCY TO DISCUSS YOUR AI PROJECT