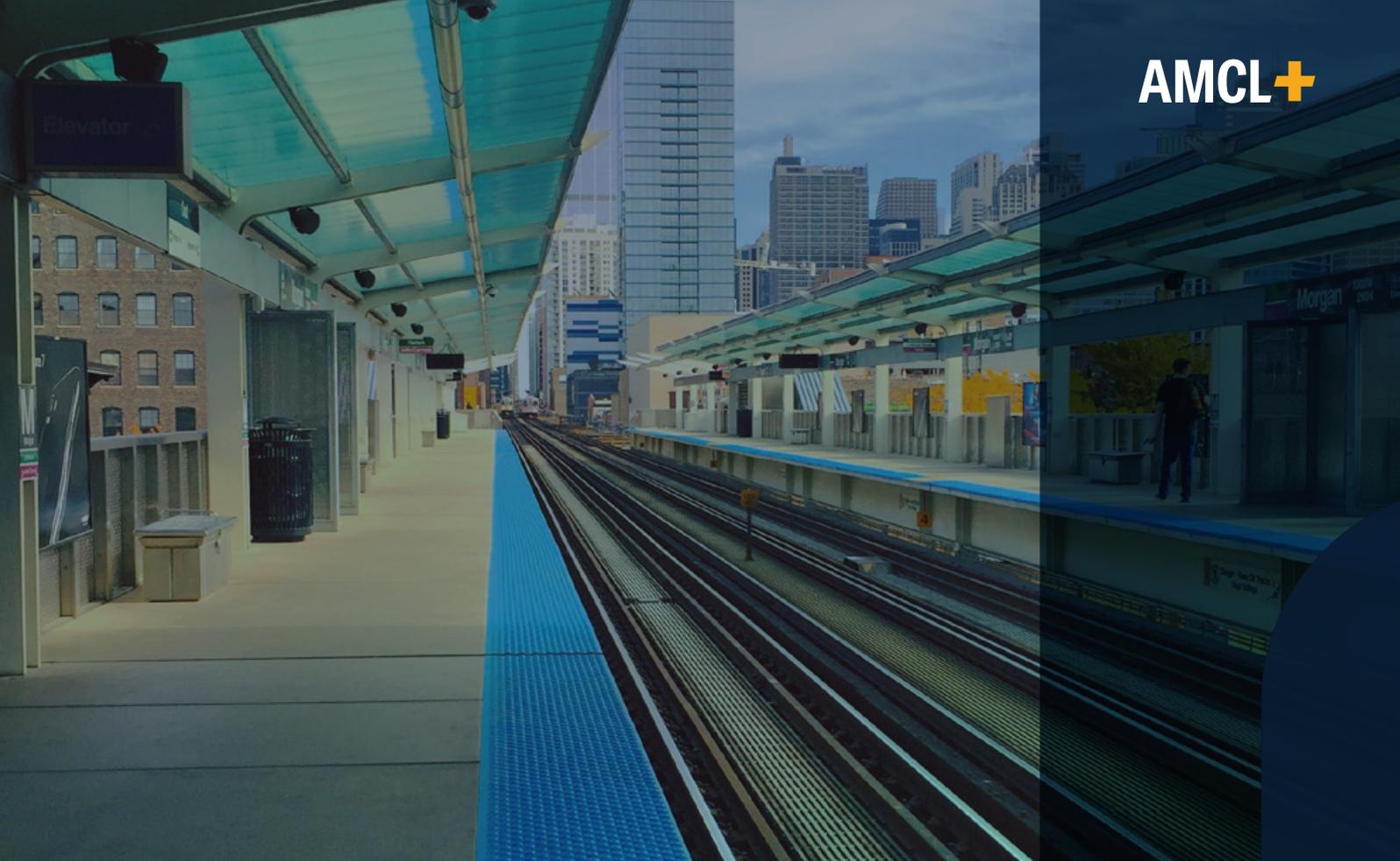


# Asset Investment Planning Systems Implementation Projects

*What are the top ten  
lessons learned?*



# Introduction

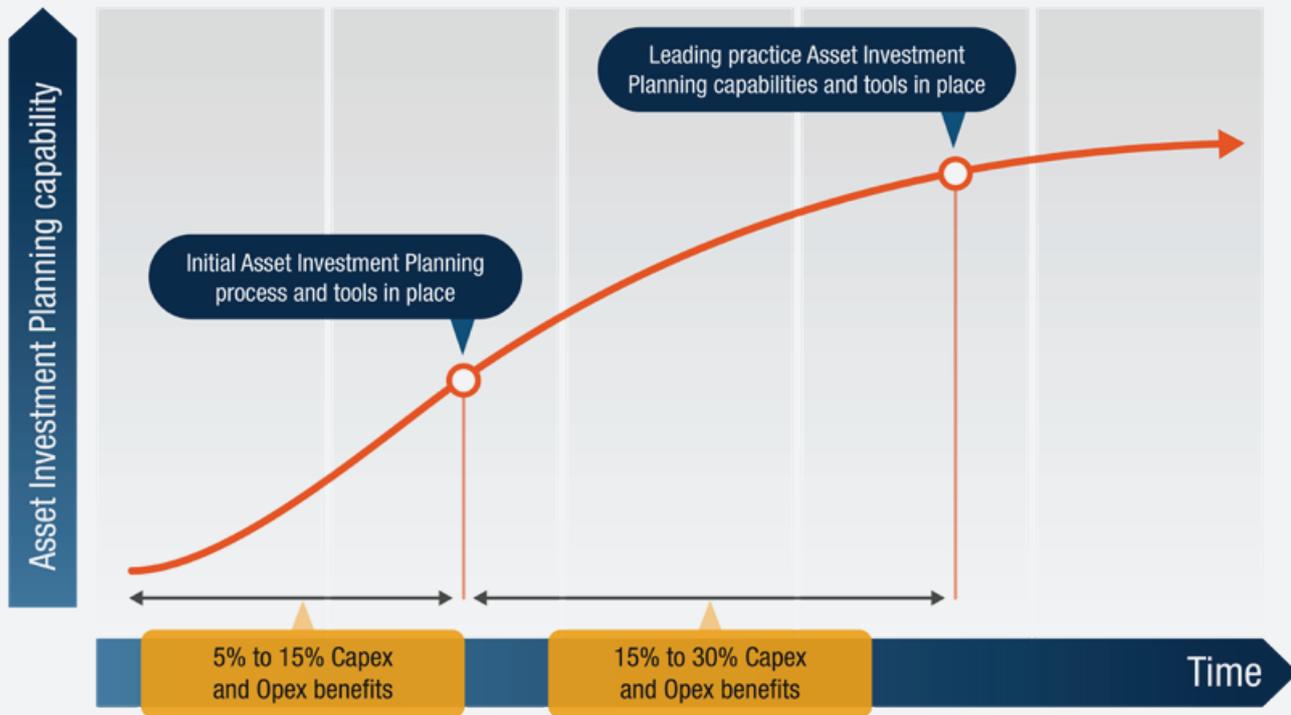
Infrastructure owner / operator organizations are facing unprecedented demands from customers, industry regulators, Governments and other stakeholder groups to deliver better overall asset performance and service outcomes, often for less funding than was previously available. Even in markets where financial affordability is less of a constraint, organizations are now having to be much smarter and more transparent about their investment choices and the data, information and decision making that led to those investment choices.

Organizations are coming under increasing scrutiny to demonstrate that they are achieving the best possible 'bang for the buck' for the infrastructure investments they have selected over the long-term and be able to clearly explain why other investments are not being made. This is no easy task. Often the needs, priorities and influence of one set of stakeholders is competing or in direct conflict with the needs, priorities and influence of other stakeholders, so arriving at the optimal overall investment plan that will satisfy the majority at an acceptable cost over the long term with high levels of transparency is a real challenge.

The trend has been for organizations to turn to technology and data driven approaches to help them meet these challenges by harnessing the computing power of specialist Asset Investment Planning (AIP) technology systems to crunch through the available data and identify, select, plan and justify their investment choices in a way that is best aligned to their objectives and priorities and those of their various stakeholders.

This is the third paper in the AMCL Perspectives on Asset Investment Planning. Two earlier papers entitled 'How does your organization build a better approach to asset investment planning?' and 'How will you know if your organization is ready for a leading asset investment planning technology solution?' can be found [here](#).

# Introduction Cont.



The benefits opportunities from being better at asset investment planning supported by leading asset investment planning technology and software is significant.

Given the considerable size of most asset investment portfolios and plans (in the Millions and often Billions) even the smallest capability improvement which results in better investment decision-making outcomes can have a significant impact. Developing from less mature approaches through to more mature approaches, risks are better controlled and both Capex and Opex savings in the order of up to 30% are possible. Typically, these benefits are more modest in the early part of the journey but accelerate once the initial Asset Investment Planning process and tools are in place and these are leveraged to make more impactful decisions.

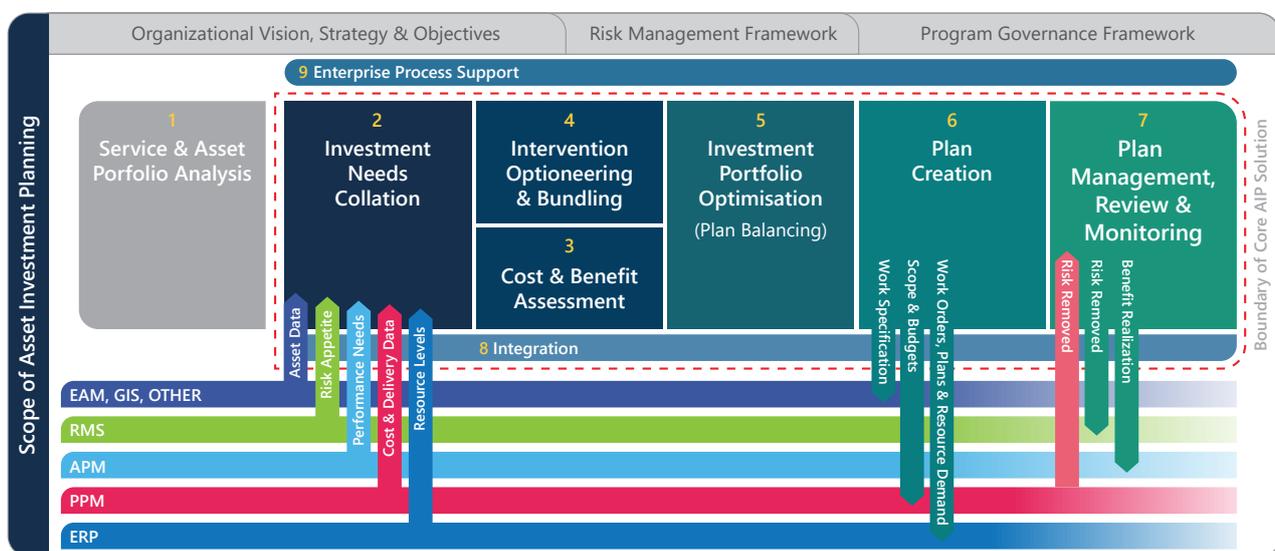
So, is it as simple as buying and implementing an advanced asset investment planning solution? In this paper we will explore some key observations and lessons learned from past implementations of AIP technology solutions from across the globe to help your organization plan to avoid some of the mistakes that other organizations have made in their AIP technology implementation projects.

# What is involved in the design and implementation of an AIP technology solution?

Before looking at the lessons learned in previous AIP systems implementations projects, it is helpful to be clear the typical scope of an AIP technology solution and briefly look at common implementation strategies.

## Functional capabilities and key integration points:

The functional capabilities and processing power of leading asset investment planning technologies has evolved rapidly over the last decade. While not exhaustive, the broad scope of general software functional capabilities (and key integration points) of a *dedicated technology solution to support an organization's asset investment planning processes* is illustrated below:



As well as harnessing the computing power of specialist asset investment planning systems to crunch through the necessary data efficiently to identify, select, plan for and justify investment choices the successful design and implementation of a *leading investment planning solution* can bring broader benefits:

- Improving process efficiencies through the implementation and enablement and of good practice workflows which are native and fully embedded within the technology
- Positive reinforcement and enablement of the roles and responsibilities of the various functions, teams and roles involved in investment planning activities
- Improving discipline and bringing transparency to investment decision making and governance. Moving the organization away from investment choices based on 'emotion' and 'engineering judgement' to a more agile, repeatable, consistent and fully auditable data-driven approach
- Improving the focus around investment related data and information to support more confident investment decision making
- Rapid assessment of a broader range of investment solution options (of different benefits and costs) to meet needs. Providing the ability to quickly and reliably compare a wider variety of different (previously incomparable) investment types in an unbiased way
- More agile development of investment plans with the ability to quickly revise and recut the investment plans as organizational priorities and constraints change
- Everyone agreeing on and working from a 'single version of the truth' on data and information, service performance targets and constraints that influence investment choices
- An improved transparency of investment plans that are demonstrably aligned to an agreed set of organizational priorities and objectives and those of its stakeholders to aid transparent discussions with regulators and other stakeholders alike
- Better visibility, control, coordination and management reporting over the entire asset investment portfolio
- The ability to measure and evaluate the benefits of investments so that decisions can be taken to do the same or something different should the same or similar decisions need to be made in the future



# Common Implementation Strategies

As described in the last paper of the AMCL Perspectives on AIP (which you can find [here](#)) there are a variety of implementation approaches that can be taken. For reasons of brevity an explanation of the strategies will not be replicated in this paper, but in summary, *examples of these implementation approaches* are:

- Start with a less functionally advanced AIP solution initially and then procure and onboard more advanced functionality gradually over time as the organizational capability evolves and decision-making complexity grows
- ‘Go big’ and procure an advanced functional solution, but scale back the complexity initially in early deployments and then switch on more advanced features and functions gradually over time to meet the organizations evolving requirements
- Opt for a reduced solution footprint initially (e.g. a pilot implementation) and then deploy more widely to more asset types, organizational functions or locations over time
- Get external support for investment planning in the near term and then gradually transition activities and the use of the AIP technologies to inhouse teams and resources over time

# What are the top ten **key observations** and **lessons learned** from previous implementations of AIP technology solutions from across the globe?



## 3.1

### A change in investment planning technology often requires a change in investment planning approach

Many asset-intensive organizations look to technology to help improve their infrastructure investment decisions, but in their enthusiasm they often overlook the fact that the technology they procure may require a materially different approach to investment planning. The alternative approaches are typically embedded into the standard workflows and processes within the software and these can have both positive and negative implications when compared to the organization's existing approach.

#### Potential consequences and implications:

- Organizations must be prepared and consider how willing they are to commit to changing their approach to investment planning if the AIP software they have chosen requires it.
- Overlaying new technology on top of a sub-optimal legacy process will not 'fix' a broken investment planning process. Conversely, it can often compound any existing problems and ultimately make them more difficult to fix.
- Implementing advanced AIP technology should not be seen as a quick fix and will require broader organizational changes to realize the full benefits potential.



## 3.2

### More intervention options and more data

AIP technology solutions can provide a significant advantage through their rapid and reliable processing of large volumes of data and information during the investment optimization process where multiple intervention options aligned to an array of measures on a Value Framework are effectively 'traded off' against each other.

Intervention optioneering approaches have also historically been a largely manual process limited by the capacity of engineers/project managers to develop and equally evaluate a full range of potential intervention options with varying levels of costs and benefits. However, to fully utilize advanced investment planning technologies, it is important to present the widest possible range of intervention options covering Capex, Opex, and other structural, operational and non-engineering based solutions for consideration in the systemized investment optimization calculations.

When more complex scenarios and multiple constraints are introduced into the decision-making activity the investment planning technology can correctly select intervention options that would have been previously overlooked or not even presented for consideration in a more traditional approach with manual optioneering by engineers and project managers.

To facilitate more advanced, fully systemized decision-making, a greater volume of candidate intervention options with a higher quality and broader dataset should be input into the AIP technology solution for the investment optimization calculations.

#### Potential consequences and implications:

- The quantity and quality of data used for current investment planning activities may be insufficient to leverage the benefits from a more advanced investment decision-support technology.
- Organizations may need to invest substantially in data improvement activities in order to fully utilize the more advanced data heavy features and capabilities.
- The organization's engineering teams and supply chain may lack the capacity to fully identify and specify a more expansive range of intervention options. This can restrict and limit the optimization process and result in suboptimal investment choices.



### 3.3

## A shift in the method and timing of decision-making

In a traditional approach to asset investment planning, engineers and project managers apply their expertise and professional judgement to identify the more feasible intervention solutions. Those solutions which initially appear to be more favorable are often progressed through the more manual decision-making progress, whilst those options that initially appeared to be less attractive in terms of their engineering merit, benefits and costs are often de-prioritized or not progressed further at all.

In later generational approaches the AIP decision support software will review all potential intervention options it is provided with, even those that would previously have been deemed initially less favourable in terms of costs/benefits. The AIP software then systematically selects the preferred intervention options through the use of a weighted Value Framework. When complex scenarios and constraints are introduced into the decision-making process, the AIP technology may correctly select less obvious intervention options that would not have been chosen in a more manual, traditional approach.

#### Potential consequences and implications:

- The traditional process of largely manual engineering and financial based decision-making at the front end of the investment planning process will change to more data-driven, technology-enabled investment recommendations at the back end of the process.
- The decision-making power will likely shift from front line engineers / project managers to investment planners and ultimately the Executive (informed by recommendations from the software based on the decision criteria). This is often a significant source of resistance to change within the organization.



## 3.4

### Investment planning is no longer a rigid 5-year cyclical, annual or quarterly activity

Historically an investment plan has been developed, submitted, approved, and locked down for delivery on an annual or quarterly basis with minimal ongoing changes. In part this was due to the highly manual process by which a plan is created which was both time consuming and resource intensive. With more advanced software, investment plans are created much more quickly and become more 'dynamic' providing the ability to more readily accommodate frequent changes in project timescales, costs, corporate priorities and constraints to quickly arrive at an alternative plan.

#### Potential consequences and implications:

- The investment planning process, facilitated by advanced technology, has become an activity conducted with increased regularity over a longer timeframe rather than the periodic peaks and troughs in more traditional approaches.
- A more dynamic investment portfolio demands enhanced control and governance arrangements to effectively manage the increase in projects entering and exiting the portfolio while upholding appropriate levels of oversight.
- The increased visibility of the delivery of investment projects provides more frequent opportunity to challenge the value of projects that are not delivering the benefits expected or experience unreasonable cost escalations. This may lead to more projects being stopped early or undergoing changes in scope. This can challenge the cultural norms of the organization and meet with resistance.



## 3.5

### New AIP technology may challenge the existing organization design, roles and responsibilities

In Observation 3.4, it's noted that the introduction of automated investment planning workflows, can potentially disrupt the current regular cyclical process and therefore the roles and responsibilities of the individuals and teams involved in investment planning. Implementing a new technology-enabled approach to AIP on top of a legacy organization design can lead to a mismatch between the new software (and its system-based roles and user profiles) and the current design and structure of the organization, its teams and their roles and responsibilities.

#### Potential consequences and implications:

- The organization may underperform in the short term until it becomes better aligned with the new tools and any short-term mismatches are resolved.
- Sufficient focus should be given to the ever important organizational change aspects accompanying the introduction of the new technology.



## 3.6

### A fundamental change in the AIP process/approach will require people in organizations to think and behave differently

When transitioning to an alternative investment planning approach enabled by more advanced investment planning software, stakeholders may resist the positive changes this will bring due to a lower level of understanding on exactly how the system-based investment plan has been calculated. This is often compounded with any perceived personal loss of influence and control over the composition of the plan, or associated budgets.

#### Potential consequences and implications:

- Organizations should anticipate and be prepared for a level of adverse reaction to the 'new' system, generated investment plan. The composition of the 'new' investment plan is unlikely to look exactly the same as the 'old' manually created investment plan. Consequently, it will need an additional focus on the explanation / justification of the 'new' plan to stakeholders to achieve their buy-in and endorsement and address the related ownership issues.



## 3.7

### The chosen implementation approach can significantly de-risk an AIP project

In many cases, it can be advantageous to gradually implement AIP software by starting with a single business function, asset type or investment type before expanding to other areas rather than a 'big bang' approach. This is discussed in more detail in the [previous Perspectives paper](#) in this series.

#### Potential consequences and implications:

- When deciding what approach to take to implement investment planning software, there will be a trade-off between the timing of early benefits realization and minimizing overall implementation risk.
- Starting with a smaller scope initially can provide valuable insights and help build both confidence and momentum for subsequent implementation phases to establish a more expansive solution.



## 3.8

### The real value is delivered by aligning the technology to the organizational strategy/objectives and getting buy-in across the organization

The implementation of advanced investment planning technology can carry with it the risk of being seen as 'just another IT project'. This grossly understates the hugely positive impact that technology-enabled asset investment decision making can have on organizational performance. It is crucial for stakeholders to recognize that designing and implementing an advanced asset investment planning solution is more effective if it is part of a business improvement initiative with a clear remit for change. The initiative should primarily focus on demonstrating a clear line of sight between the organization's priorities and investing wisely in the infrastructure that will deliver the best outcomes on those organizational priorities. The software is simply an enabler to achieving this.

**Potential consequences and implications:**

- Treating the AIP system implementation project as ‘another IT project’ runs the risk of focusing too heavily on requirements management, configuration workshops, test scripts, and project plans. While these elements are necessary, the true value lies in how the technology solution captures and evaluates intervention options, Value Frameworks, and optimization scenarios to generate investment plans aligned with corporate-level strategies, objectives, and priorities.

**3.9**

**Collaboration is critical for success**

When implementing investment planning technology projects, it’s important to consider the roles of the solution vendor, the asset owner, and the business integrator and how these will combine together for a successful outcome.

**Potential consequences and implications:**

- The absence of any of these three parties or a misalignment amongst them can result in the AIP implementation project struggling or failing to realize its benefits.
- It may also result in potential delays in the project timeline and costly rework to address previously overlooked issues.

**3.10**

**Success is about people, processes, data and technology – it is essential to be ready on all fronts**

As stated in section 3.8, it’s important to recognize that implementing an AIP technology solution shouldn’t be seen as just another IT project. It’s crucial to consider other organizational aspects to ensure the success of an investment planning business change project. There are eleven fundamental and highly connected elements that make up a comprehensive approach to asset investment planning (illustrated opposite).

**Potential consequences and implications:**

- Undertaking a technology-enabled AIP Change Programme without ensuring sufficient readiness in core AIP business capability areas can substantially increase the risk of the change initiative. This may lead to protracted timelines and costly rework to develop deficient components, including data quality, process design, organizational structure, roles and responsibilities, decision-making frameworks, and governance structures.



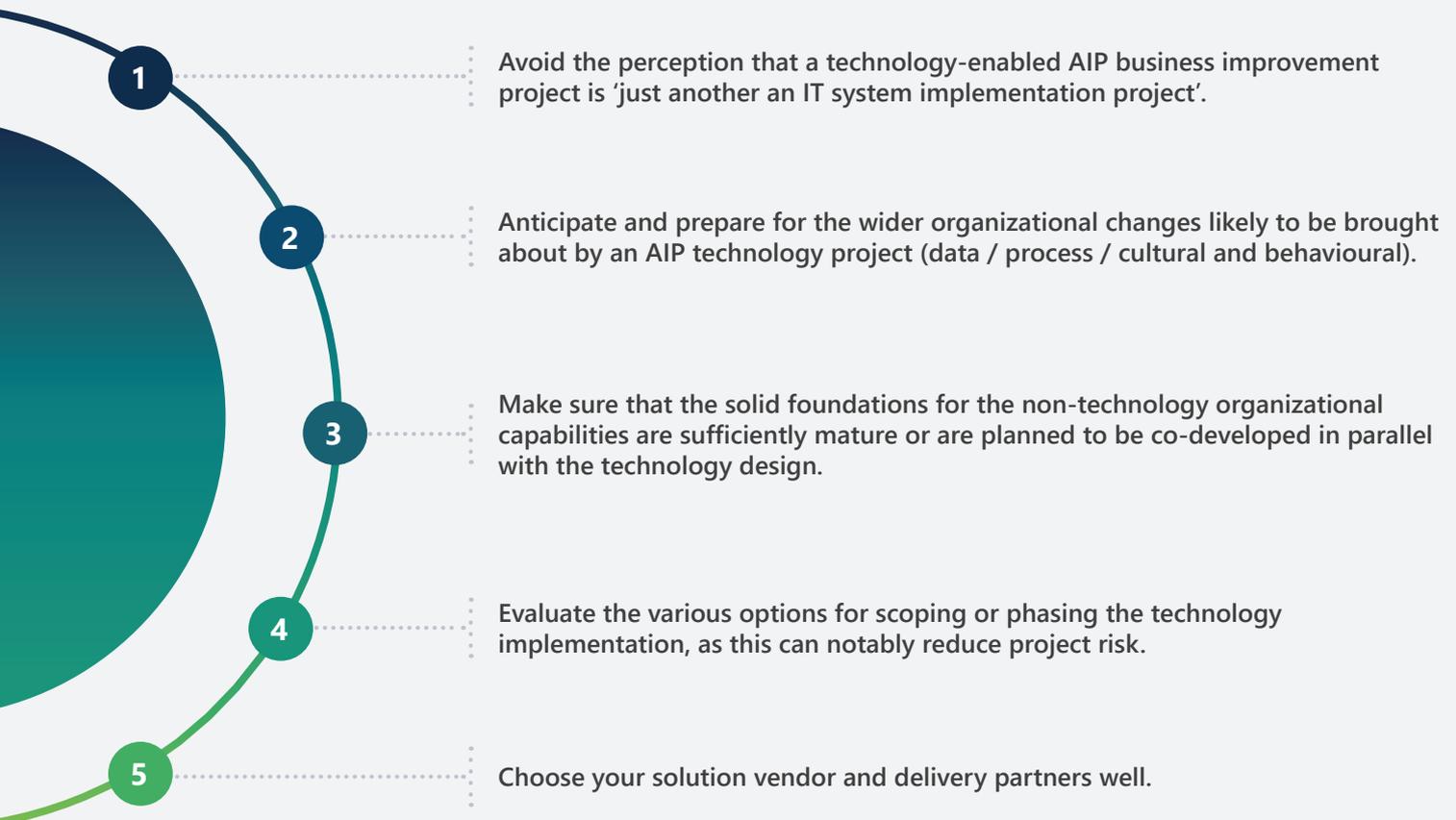
# Conclusions

Historically, organizations have relied upon home-grown office based software applications and a largely manual decision making approach for asset investment planning. With the emergence of specialized enterprise level asset investment planning solutions with their powerful processing capabilities, decision making frameworks and systemized workflows and role profiles organizations are increasingly taking the opportunity to make transformational level changes to their asset investment planning capability. The benefits and opportunities of better investment planning through greater return on investment through more strategically aligned investments and operational efficiencies have been shown to be substantial.

However, the lessons from numerous previous AIP systems implementation projects indicate that many organizations may not fully understand the implications of, or be underprepared for, adopting the new AIP technology and the wider organizational changes this is likely to bring. Implementing such systems requires both adequate preparations to lay the foundations in readiness and a focus on organizational change.

It's important to recognize these challenges but not be deterred by them, as the potential benefits outweigh the risks.

The useful observations to be made by organizations considering a *technology-enabled asset investment planning change project* so that they are better prepared are:



# About AMCL



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Kris is AMCL's Asset Investment Planning Service Line Lead and has been developing Asset Investment Planning technology solutions since 1997. His technical specialisms include business operating model design, asset information systems and organizational change and transformation.

During his 25 year career he has amassed expertise in designing process, organization and technology improvements to increase productivity, reduce costs, facilitate strategy delivery and improve decision making in the asset-intensive industries.

**Get in touch with Kris to explore how AMCL can help you with your organization's Asset Investment Planning improvement journey.**

## Get in touch

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