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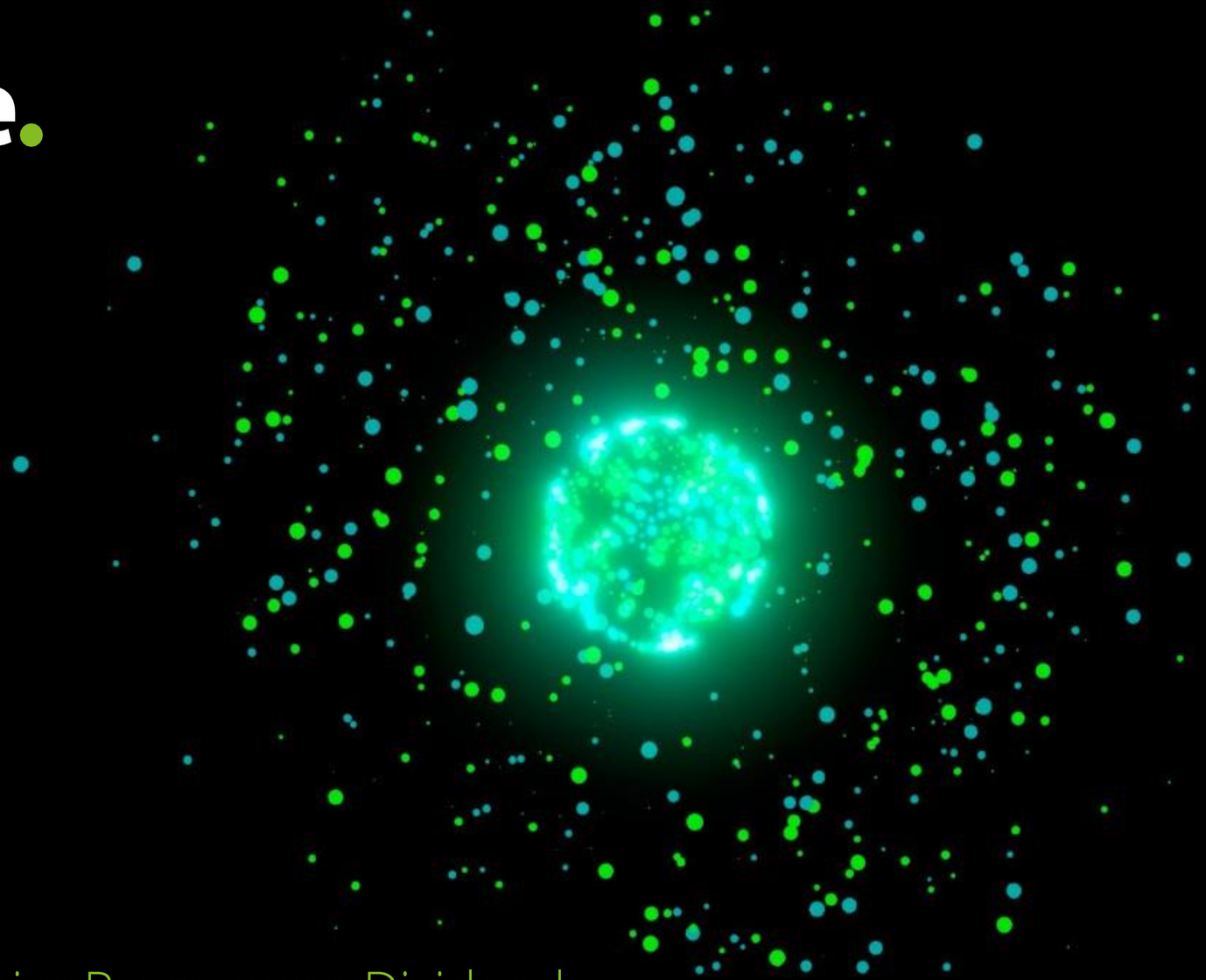

Delivering the Major Programme Dividend

Overcoming sustained false optimism

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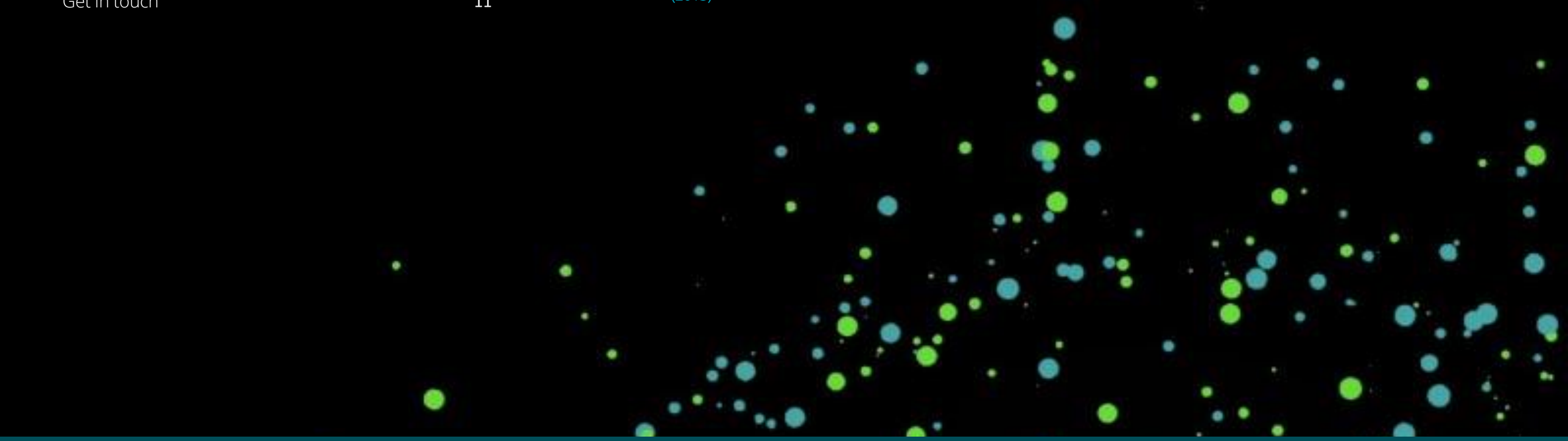
MAKING AN IMPACT THAT MATTERS since 1845

Contents

"...nobody ever stops or intervenes in a poor project soon enough. The temptation is always to ignore or under-report warning signs and give more time for things to improve to avoid revealing bad news, rather than to intervene decisively at the earliest opportunity."

Lord Browne of Madingley
Getting a grip: how to improve major project execution and control in government Cabinet Office (2013)



Executive summary

Across the public and private sectors, organisations use major projects and programmes to deliver their biggest and most transformative strategic and policy decisions. In the public sector, the Government Major Projects Portfolio (GMPP) includes the government's largest and most ambitious projects and programmes, representing substantial investments in the UK's infrastructure, technology and public services. The current portfolio comprises 227 projects, ranging from HS2 to the Schools Rebuilding Programme, being delivered by 21 government departments along with their arm's length bodies. The total cost over the lifetime of these projects is estimated at £834bn, with total benefits to the UK expected to be £719bn.

Programmes at this scale naturally involve extreme, if not unparalleled, levels of complexity. The frequency with which they are not delivered on time and to budget represents a major issue for UK plc: delays and cancellations of major programmes come at a significant wasted cost to the public purse.

This paper focuses on the GMPP to argue that early intervention in major programmes at risk of failure is vital. The earlier a decisive intervention to prevent programme failure, the more likely the intervention will succeed and the accompanying cost of failure – including unrealised benefits – will be minimised. The National Audit Office (NAO) has recently reiterated the importance of using data to understand the circumstances which may lead to a reset so that programme teams can be more alert to early warning signs or potential triggers.* The NAO has also underscored the importance of identifying the need for a reset as early as possible.

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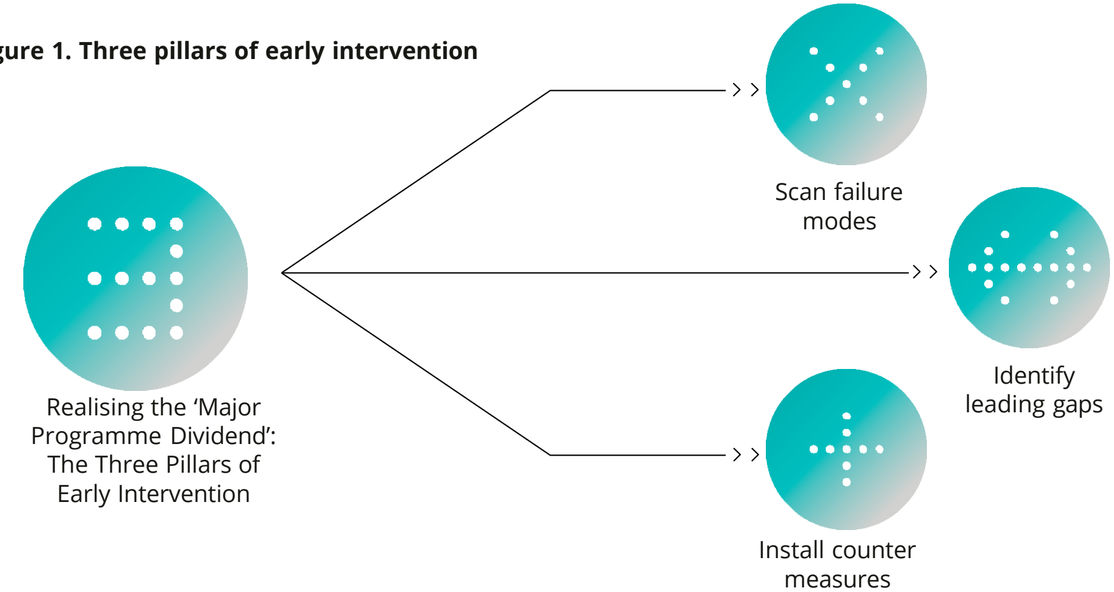
Our estimate is that reducing the frequency and scale of major programme failure across the GMPP could generate a 'major programme dividend' for the public purse, potentially worth up to £60bn (see Principle 1 p.4).

This paper puts forward a three-step process to identify where, when, and how to intervene in major programmes at risk of failure. The first step is to identify the mode by which programmes fail.

The second is to identify the leading gaps, a process which uses data to look ahead, and the third is to put in place a portfolio of counter-measures or halt the programme.

The alternative to intervention is waiting and hoping that a programme will get back on track: programmes do not fix themselves. Believing they will do so without intervention can be described as 'sustained false optimism', and while there are well developed counter-measures in place for optimism bias in major programmes, there are few for countering sustained false optimism.

Figure 1. Three pillars of early intervention



*National Audit Office: Lessons Learned: Resetting major programmes - Session 2022-23, 17 March 2023 HC 1198

Principles of early intervention

Principle 1: Unless steps are taken to prevent or fix performance problems in a programme, it is highly likely that they will never get back on track and default to benchmark performance

The total life cycle spend of the UK's current GMPP is £834bn. Historically, the average cost overrun is estimated to be at least 20% per cent across the portfolio. Our experience suggests that intervening earlier and more decisively could halve that cost, potentially generating a major programmes dividend as high as £60bn. There would also be an increase in social value as more benefits are realised from the portfolio. The prize is simply enormous.

The Infrastructure and Projects Authority's (IPA) latest annual report shows 25 out of 277 projects, some 11% by value of the portfolio, were rated green on their delivery confidence assessment (i.e. "successful delivery of the project on time, budget and quality appears highly likely…"). 163 were amber, 27 red (i.e. "successful delivery of the project appears to be unachievable…") and 12 were exempt.

Major programme cancellations and overruns can have huge costs for UK plc. Recent challenged major programmes for the Ministry of Defence (MoD) include the Nimrod MRA4 aircraft and the AJAX armoured vehicle.

When the Nimrod programme was ultimately cancelled in 2010, it had spent over £4bn, was nearly £800m over-budget, and over nine years late. And although arguments have also been made for the cancellation of AJAX, having missed deadlines in 2017, 2020, and 2021 a series of interventions taken would suggest that the immediate challenges have been resolved and the programme reset with revised milestones and vehicle technical specifications.*(p8)

Principle 2: The earlier intervention takes place when performance problems become evident, the less costly the intervention

As a programme progresses, the ability to make changes to restore performance declines, and the cost to intervene increases. This makes accurate and realistic performance reporting essential. Crossrail is a case in point, where late intervention became hugely costly and difficult. The programme was given a green rating right up to 2018. By 2019, it was red. Progress reports presented by Crossrail Ltd to its board and sponsors emphasised what had been achieved and how much of the programme had been completed. They did not adequately consider the level of risk to successful delivery that remained in the programme.*(p11)

Principle 3: An early intervention is assistance to fix issues with the programme or stop it, not provide increased scrutiny

'We received all assistance short of actual help' is a common statement from leaders of major programmes. Indeed, one standard response to a programme receiving a poor delivery confidence assessment rating is to increase the level of scrutiny applied to it.

This does not help fix its problems and can be counter-productive as it takes time and effort away from the programme. Worse, it discourages realistic reporting and encourages the guarding of problems until they cannot be rescued. The NAO found that resets were generally viewed negatively within the public sector resulting in government bodies trying to resolve unresolvable issues, leading to wasted effort and costs, rather than admitting the need for a reset.*(p10)

Nonetheless, this is not to say that intervention need not have external impetus. It should be recognised that the team on the ground when challenges occurred is unlikely to be the team that will intervene decisively to fix the problems. An external catalyst is often an effective trigger to prompt intervention.

Principle 4: Underperformance needs to be proactively identified to target interventions

Recognising the need for intervention is crucial. There are two aspects of this:

1.Identify the failure modes

2.Undertake performance gap management

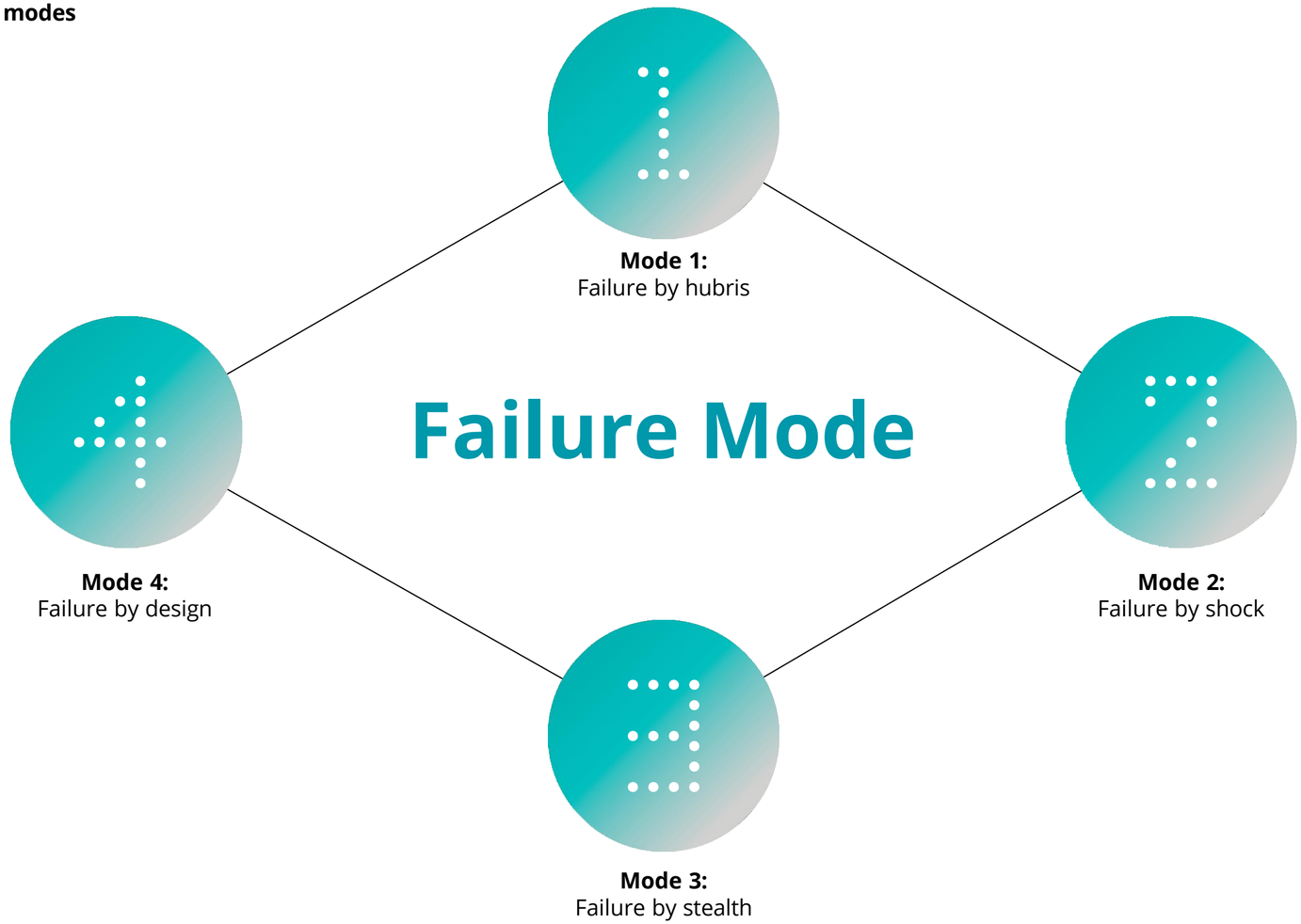
There needs to be a focus on horizon scanning to identify performance challenges, using key data inputs and simulation, to predict, learn and evolve the delivery strategy 'in flight'. It ensures the delivery organisation remains match fit to deal with key pivot points or entirely unpredicted 'black swan' events that may well occur throughout the programme lifecycle.

Stage 1: Scan failure modes

In engineering, Failure Mode Effect Analysis (FMEA) has long been used to make systems and products safer and more reliable. In major programmes, our objective is the same. To counter failure modes, they need to be scanned, recognised and used to counter sustained false optimism - the ongoing belief that an ailing programme will be a success, in spite of evidence to the contrary.

We recognise four main non-exclusive failure modes. No programme is perfect, and at some level, it is likely that all four modes of failure will exist to some extent somewhere in the programme. Naming the modes is useful as the interventions in each case are different. Figure 2 shows the modes.

Figure 2. Failure modes



Stage 1: Scan failure modes

Mode 1: Failure by hubris

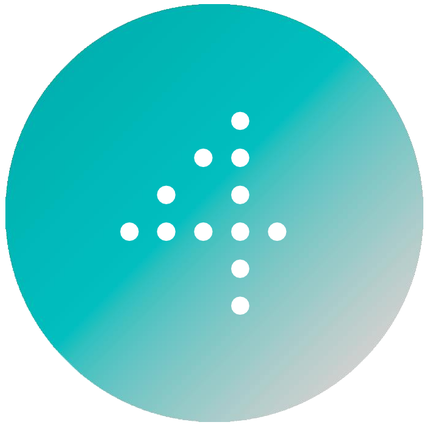
Failure by hubris occurs where the initial scope, cost, schedule, and benefits of a major programme are out of touch with the reality of the task. It could be that a project suffered inadequate levels of up-front planning, or a budget cut without a related reduction in scope or benefits. Other causes include 'entryism', where budgets are deliberately under-stated and benefits over-stated to get a programme started. Once the organisation is committed to the programme, budgetary increases become the norm. Frequently, too, there is simply optimism bias on the part of the estimators or errors in the estimating process.

Mode 2: Failure by shock

Failure by shock occurs where there is a significant unexpected disruption to the programme. The slowing of many IT programmes as a result of new legislation on employment (IR35) is a good example of an external shock, as would be a pandemic or war. Internal shocks include policy or ministerial changes. We also include 'self-inflicted shocks' (e.g. deploying inexperienced people vs. highly experienced major programme practitioners). These are risks that become issues for the programme.

Mode 3: Failure by stealth

Failure by stealth occurs when relatively minor problems build slowly over the life of a programme until they form a significant barrier to progress. In technology programmes, it is common for constituent projects to end with some technology debt or functionality that could not be delivered at that time which is, taken alone, relatively insignificant: it is the compounding of these over time which leads to failure. Similarly, failure by stealth can be caused by a failure to take advantage of opportunities such as early finish benefits offered by individual projects or workstreams.



Mode 4: Failure by design

Failure by design occurs where the programme and its extended organisational design (including the contracting and supply strategy) is inappropriate for the nature or desired outcomes of the programme. Common tensions within organisational designs which can prove fundamental obstacles to progress can include lack of alignment of objectives or measures, counterproductive contract terms, over-reliance on individual day-rate contractors who may focus more on programme longevity, and adherence to a single structure more suited to previous phases or tranches. Designs need to evolve with the lifecycle of the programme, but even where this is understood, the requirement to continuously re-design is more onerous than many programme leaders can resource.

Stage 2: Identify leading gaps

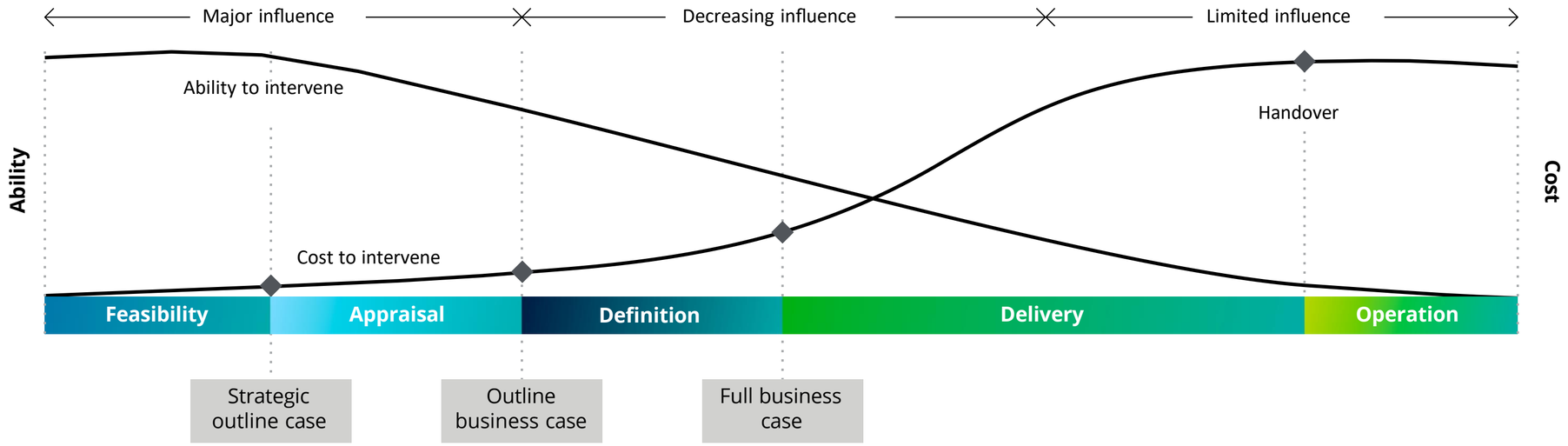
All modes of failure are experienced through performance shortfalls a long time before they show up in formal performance data. By the time data trends are available, valuable time to intervene has been lost, and the costs of intervention increase (see Figure 3). This can be countered by increasing the use of 'leading measures' that look forward, not back.

Using performance to-date to manage delivery of major programmes has many uses, and in some cases can give a useful indication of future performance. However, our experience suggests that too much time is spent on reviewing historical data, rather than leading data. Systematic horizon scanning and forward-looking data analytics should be deployed as a matter of course, as should data analytics approaches such as digital twins.

Leading data will help determine whether work can progress as planned, even when advanced analytics are not available. An obvious example is in construction, where common requirements for any activity include completed designs, access negotiated, permits obtained, materials onsite and available Suitably Qualified and Experienced Personnel (SQEP).

A 'leading gap' exists where future requirements are either not in place or are not fit for purpose.

Figure 3. Early intervention ability and cost



Stage 3: Install counter-measures

For each of the modes of failure, a range of counter-measures are available, as shown in Figure 4.

For failure mode 1 (failure by hubris): Overruns in programme estimates are often managed through a 'predict and provide' approach, providing more resources to allow the programme to have a greater chance of being delivered within its cost envelope. The HMT Green Book, for example, sets out levels of uplift to be applied to programme estimates to form a cost envelope. However, this is expensive and contributes over time to programmes becoming unaffordable, due to the cost envelope eventually being seen as the de facto target price. For this reason, we advocate 'predict and prevent' approaches for the remaining failure modes.

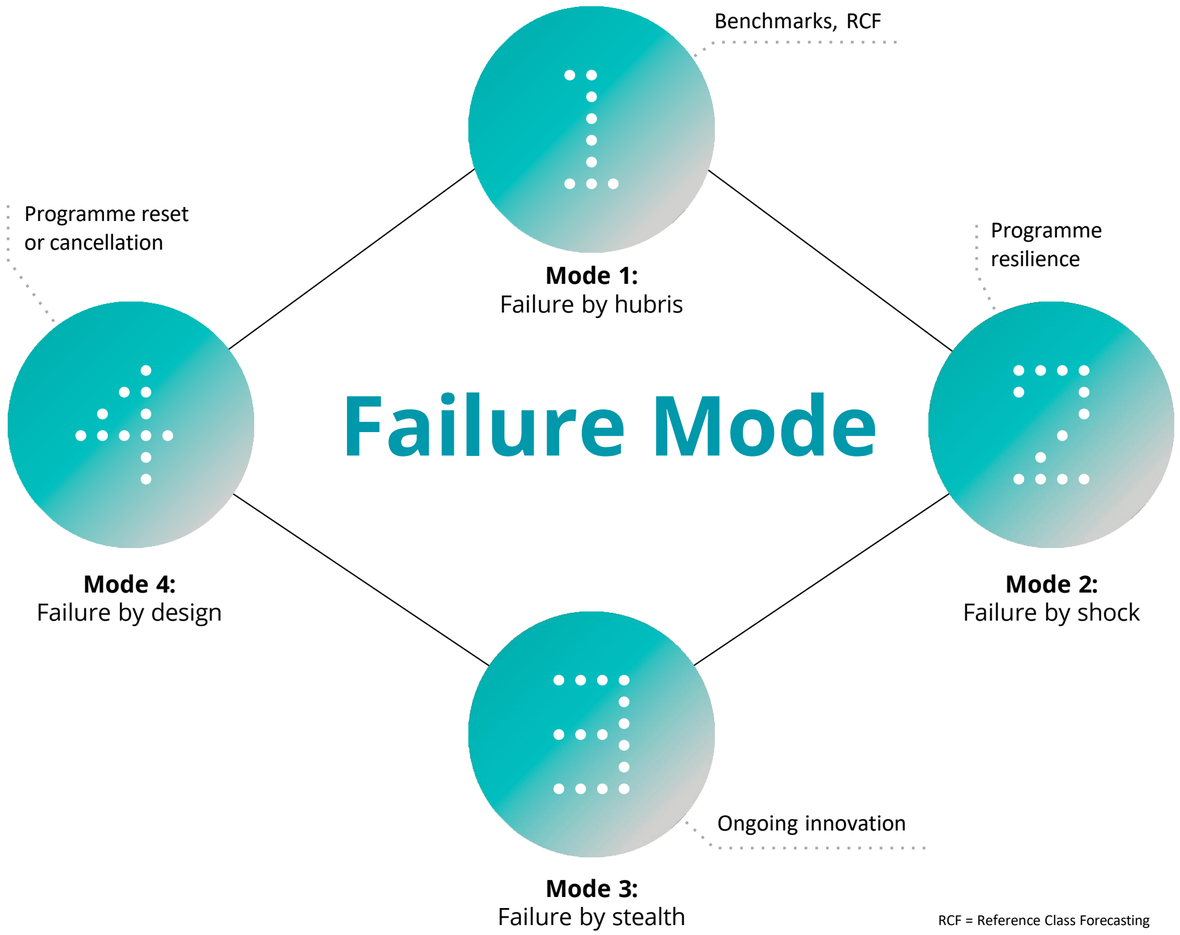
For failure mode 2 (failure by shock): Shock occurs, by definition, through unexpected events. As such, constant scanning of future opportunities and threats alongside assessment of programme resilience is needed, over and above standard risk management practice.

However, it is our experience that even where challenges are identified, they often materialise faster and with greater impact than predicted and this should encourage the use of scenario analysis (including digital twins) to test strategies.

For failure mode 3 (failure by stealth): Countering failure by stealth requires constant focus on detail: "sweating the small stuff". For example, an ongoing innovation team can be deployed to identify and implement new approaches to address threats or opportunities across the programme. Another approach is to implement weekly delay and disruption analysis. Without these approaches, small delays and over-runs are allowed to accumulate, often unnoticed.

For failure mode 4 (failure by design): Failure by design cannot be addressed through incremental changes. The main counter-measure here is either programme reset, including contract resets, or programme cancellation. It is within the power of most GMPP SROs (Senior Responsible Officers) to recommend the cancellation of programmes – but that power is rarely exercised. Although it is an unpalatable option, where the programme business case is no longer deliverable, this may be the best value for money decision. The NAO identified an opportunity for the IPA and HM Treasury to provide further support and guidance to programme decision-makers to help them consider resets in a more structured way and put in place ways to increase the likelihood of a reset being successful.*(p9)

Figure 4. Failure modes and counter-measures



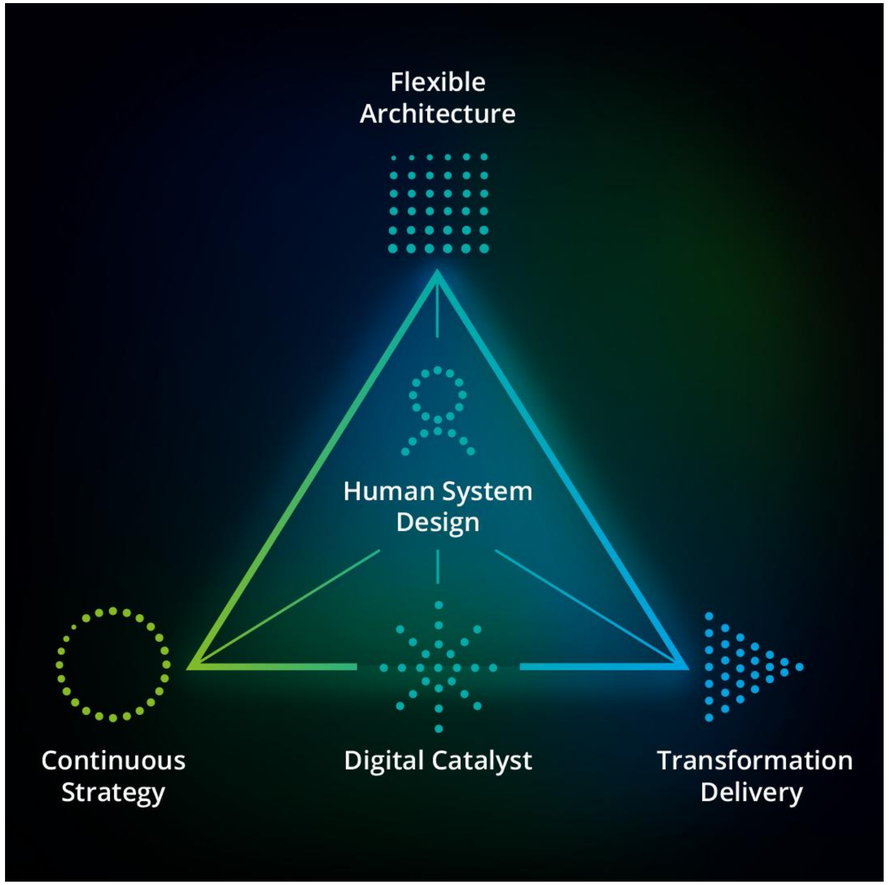
RCF = Reference Class Forecasting

Programme Aerodynamics®

Deloitte has developed a highly flexible and responsive next generation approach to major programme delivery called Programme Aerodynamics®. It is important to recognise potential or extant failure modes and have strategies for recovery or prevention. This is greatly assisted by having a framework of which these strategies will form an important part. Programme Aerodynamics® provides such a framework. For instance, Mode 1 (hubris) would be prevented by the use of a digital catalyst, Mode 2 (shock) by having a flexible architecture, Mode 3 (stealth) by continuous strategy and Mode 4 (design) by human system design.

Programme Aerodynamics® assists in the creation of organic, data-informed check points and empowers organisations to effectively anticipate, shape and manage change so that they can:

- Continuously scan the horizon to look forward, assess choices, and anticipate risks and opportunities
- Efficiently and rapidly allocate and coordinate available resources
- Implement a forward-looking delivery approach to create momentum
- Foster a digital-first mindset to simulate scenarios to drive strategic decision making and enhance delivery
- Build a human system to create direction, connections and a delivery rhythm.



Programme Aerodynamics®

Programme Aerodynamics® promotes early intervention and a proactive approach, using the following five key components:

1. Continuous Strategy: By applying and updating the strategy throughout the lifecycle of a programme, constant horizon scanning for future threats and opportunities equips leadership with essential knowledge for early decision-making and provides early indicators of leading gaps in the programme. Continuous Strategy picks up early signs of failure by hubris or by stealth and increases resilience against failure by shock.
2. Flexible Architecture: By adopting a flexible approach, leaders can set the design direction with enough precision to move forward but without imposing excessive structure or unnecessary detail. Additionally, the approach facilitates rapid modification of the design as new information is received, reducing failure by design. Flexible Architecture creates appropriate structures for the programme (organisational design, contracting and supply chain ecosystem, etc.) to help prevent failure by design.
3. Transformation Delivery: By using a forward-looking, problem-solving mindset to predict potential barriers and develop alternative delivery solutions, leaders can create momentum, rhythm, and continuously make progress even in the most challenging of environments.
4. Digital Catalyst: By leveraging new digital capabilities such as digital twins and simulation, programmes are developed with greater rigour and control. This is particularly useful in building initial budgets and proactively managing cost increases, preventing them from occurring in the first place. Digital Catalyst provides the data that enables early identification of leading gaps and simulates the impact of potential counter measures.
5. Human System Design: By designing the skills, team behaviours and organisational structures that all programmes rely on to deliver successfully, Human System Design creates the culture to make programmes more resilient and better prepared for shocks. It eliminates the cultural divides, misaligned incentives and organisational structures that lead to failure by hubris and by design. As organisational changes throughout the programme can often be extensive, adopting the optimal structure throughout (in line with the evolving strategy) is imperative.

The challenges organisations face today have never been more complex. A Programme Aerodynamics® approach empowers the leaders of today and tomorrow to re-imagine problems, accelerate build activities, and deliver high-impact solutions. Realising the 'Major Programme Dividend' not only realises benefits for HMT and the GMPP portfolio, but also for UK citizens and corporates alike.

"Human System Design works to eliminate cultural divides, and misaligned incentives and organisational structures that lead to failure by hubris and by design."

Get in touch

If you are interested in finding out how you can intervene early in a distressed programme, please reach out to our contacts to find out more.

What is Deloitte Major Programmes?

Deloitte Major Programmes focuses on solving the most challenging issues facing the world today: economic, environmental and societal. Connecting people and technology in complex and changing environments, we bring together multidisciplinary teams with diverse perspectives, skills, and expertise. We offer support across:

- Major Capital Infrastructure
- Path to net zero
- Future of healthcare and biosecurity
- Digital and financial infrastructure
- Disrupted industries and structural reform
- Social justice
- Major sporting and cultural events

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