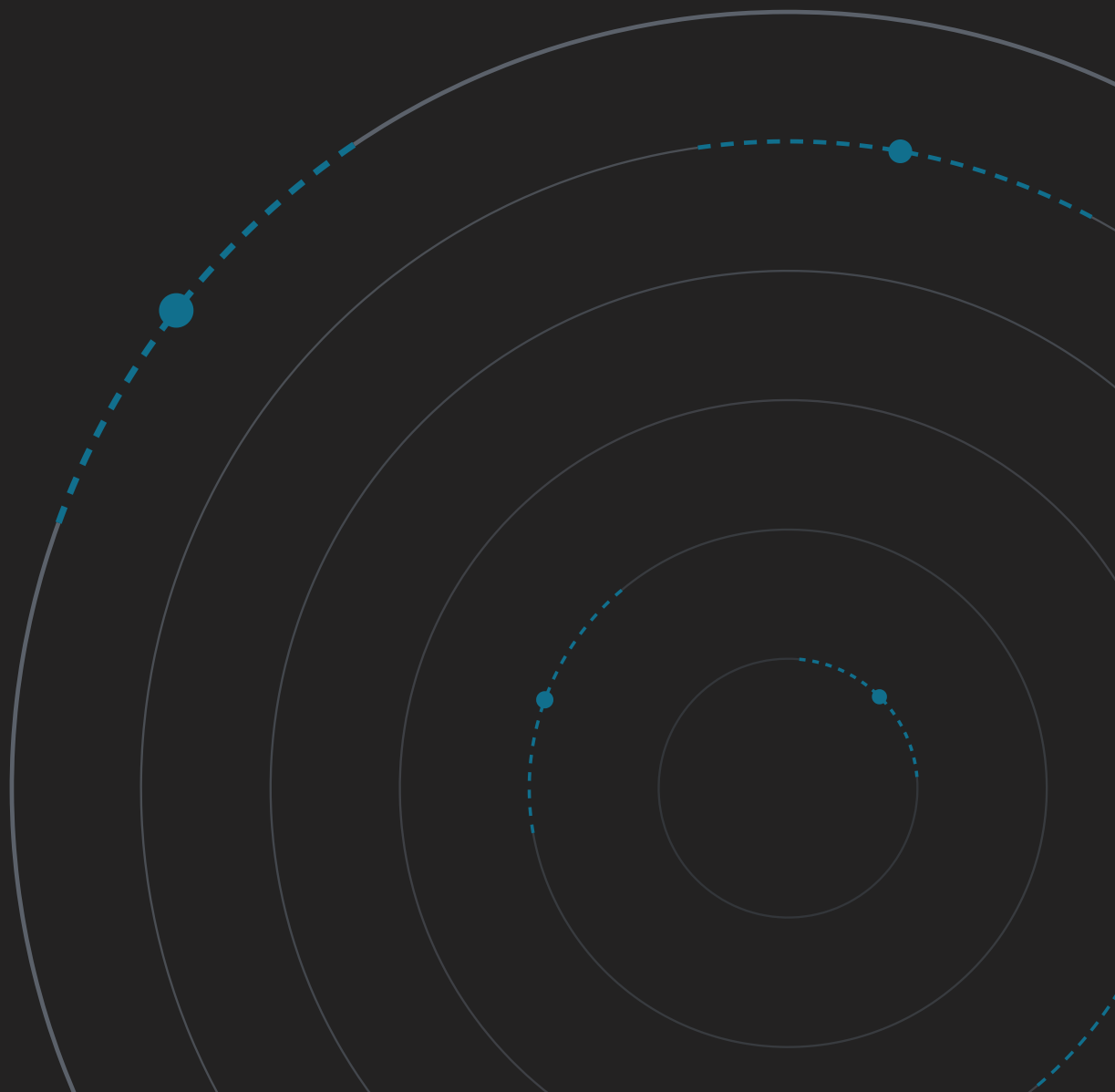


stormid

Breaking the Legacy Trap

How AI changes the economics
of modernising Scotland's
public services



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Introduction

For as long as I have worked in technology delivery, the same conversation has played out in different rooms. If only we could replace system X, we could finally deliver on our digital transformation goals.

The reasons are often similar across organisations. Specialist knowledge is harder and more expensive to retain. Staff compensate for missing functionality with Excel and manual workarounds. Core information sits in separate systems, making services harder to join up. Maintaining ageing systems absorbs money, attention and time that could otherwise support improvement.

Yet these applications often perform essential functions reliably every day. Replacing them means understanding years of accumulated business rules, unravelling dependencies and moving a live functioning service safely onto something new. For CTOs faced with substantial upfront costs and uncertain delivery timelines, deferral has often been the rational choice.

AI is changing that calculation.

Storm ID's work on legacy public sector applications shows how AI can accelerate the analysis and engineering work that modernisation requires. On one UK public sector programme, we recorded 40% less effort across the project delivery against a conventional GDS style delivery approach. The largest reductions came from work involving both the interpretation and generation of code while governance and accountable decision making continued to require substantial human effort.

For Scotland, this creates an opportunity to advance public service reform. Better understanding of the existing IT estate can help determine which applications should be improved, combined, retired or replaced. Reducing engineering effort can also strengthen the case for change by developing new systems at pace that can reduce operating costs and support delivery of services that are more preventative, joined up and responsive to people's needs.

This paper sets out Storm ID's delivery evidence, examines the wider economic opportunity and proposes a phased route for Scotland to act on legacy systems. The next step is to select a first wave of systems to transform and measure what changes in delivery cost, service quality and operational performance.

The assumptions that have kept these legacy systems in place deserve to be tested again.



Paul McGinness
Chair
Storm ID



Executive summary

Scotland's public sector spends an estimated £1.86 billion a year on ICT. On the UK Government's benchmark around half of all ICT spend sustains legacy systems. As such, an estimate for how much we spend on legacy systems is in the region of £930 million a year. (Scottish Government, 2025a; 2026a; Cabinet Office, 2021).

As an estate ages, maintenance absorbs the budget and specialist capacity that modernisation needs and slower modernisation leaves more of the estate to age. Scottish Government corporate function data illustrates the imbalance, with around £3.80 spent running and improving existing technology for every £1 invested in digital transformation (Scottish Government, 2026a). Public bodies have stayed in this cycle not because replacing legacy systems never pays back, but because it has paid back too slowly. Breaking this cycle would support the Public Service Reform objectives of prevention, joined-up services and efficiency.

AI-first analysis and engineering can make modernisation cheaper by reducing the manual effort needed to understand existing codebases and build their replacements. AI analyses source code to extract business rules, map dependencies and document how an application works. Engineers validate these findings and use them to guide AI-assisted generation of replacement code, tests and migration scripts. This reduces the time specialists spend deciphering old code and writing new software, allowing teams to deliver with less effort and bring improvements into service sooner.

Three figures frame the opportunity:

~40%

less effort to rebuild a legacy system with AI-first delivery, measured by Storm ID across task types with a full range of 15–60% depending on the system

28.6%

potential maintenance saving derived from a 2026 UK Government report that stated that legacy systems cost 40% more to maintain. (UK Parliament, 2026).

~20%

potential staff capacity released taken from Storm ID's earlier research, (Automate tasks, not jobs, February 2026), which modelled the opportunity for improving automation and reducing the administrative burden through new digital services.

What this means for a single legacy system

Consider an ageing application that costs £1 million a year to maintain and would cost £3 million to rebuild conventionally. A modern replacement system would cost around 28.6% less to run, saving about £286,000 a year. As such a conventional rebuild would take 10.5 years to pay for itself. With AI-first delivery approach cutting a rebuild effort by around 40%, the cost would fall to £1.8 million and the payback to 6.3 years.

Both these figures are conservative estimates as they only count the lower running cost and give no credit for the automation a modern system makes possible. If redesigning the service around the new system released staff time worth even £100,000 a year, roughly two full-time posts, the AI-first payback would fall below five years. So, while AI does not change the reward for modernising it does bring the reward forward and makes the wider benefits reachable sooner.

Illustrative system, £1m a year to maintain	Rebuild cost	Annual saving	Payback	Net position after 10 years
Conventional rebuild	£3.0m	£286k	10.5 years	−£0.1m
AI-first, least favourable system (15% saving)	£2.55m	£286k	8.9 years	+£0.3m
AI-first, central case (40% saving)	£1.8m	£286k	6.3 years	+£1.1m
AI-first, most favourable system (60% saving)	£1.2m	£286k	4.2 years	+£1.7m

Illustrative: assumes a conventional rebuild costs three times the system's annual maintenance cost, typical of an ageing legacy system

At national scale

Scotland spends an estimated £930 million a year running legacy systems. In the illustrative scenario below, public bodies replace a growing share of those systems each year, starting with 10% in Year 1 and reaching 40% of systems by Year 4. This work could be funded largely from within existing transformation budgets, subject to existing commitments. Three areas of value stem from this approach:

Stream	What it is	Year 1	Year 4	Four-year total
Running costs avoided	Cash, recurring for every system retired	£27m	£120m a year	£291m
Engineering effort released	Delivery capacity: the same budget modernises two-thirds more	£16m	£70m a year	£169m
Staff time released	Service capacity (through improved automation in modern systems) that is redirected to frontline work	3.6m hours	14.4m hours a year	–

Each stream builds year by year as more systems are replaced, which is why the four-year totals are well below four times the Year 4 figure. We report the streams separately because they are different kinds of value, and only the first is cash. On running costs alone, a typical system repays its AI-first rebuild in around six years and the programme as a whole within around eight.

By Year 4, the avoided running costs would deliver more than a tenth of the £1 billion annual reduction in corporate costs that the Public Service Reform Strategy targets by 2029–30, without reducing frontline services (Scottish Government, 2025b).

The engineering effort released lets each year's budget go further, and the staff time released gives public services capacity they need to address backlogs.

What Scotland should do

Scotland should begin with a funded first wave of legacy system modernisation supported by five actions:

1. **Understand the estate.** Record systems, costs, risks and dependencies across organisational boundaries.
2. **Prioritise public value.** Compare improving, retiring, sharing, buying and rebuilding against cost, feasibility, resilience and service outcomes.
3. **Apply common assurance.** Establish approved tools, information safeguards, engineering standards and accountable human decisions.
4. **Measure results.** Track delivery cost and quality alongside improvements for citizens and staff, involving them in defining success.
5. **Reinvest verified savings.** Agree upfront funding and use a share of demonstrated cashable benefits to support subsequent waves.

Faster analysis and engineering, backed by disciplined assurance, can help Scotland escape the legacy trap and build services that work together around the people who need them.

The legacy trap

Scotland spends heavily on standing still

Combining Scottish Government procurement data with the cost of the public sector's digital and data function, Scotland's public bodies spent an estimated £1.86 billion on ICT in 2023/24, the most recent year for which both data sets exist (Scottish Government, 2026a; 2025a). The striking feature of that spend is not its size but its shape. The Scottish Government's corporate function data shows that, across public bodies and NHS healthcare organisations, around £3.80 is spent running and improving existing technology for every £1 invested in digital transformation (Scottish Government, 2026a).

For every £1 Scotland spends changing its technology, £3.80 goes on keeping it running

Published

Digital transformation



£1

Running and maintaining existing technology



£3.80

Public bodies and NHS healthcare organisations, 2023/24, the most recent year for which both the Scottish Government's ICT procurement data and its corporate function data are available. Source: Scottish Government (2026a).

Not all that running cost is legacy, but a great deal of it is. Scotland does not yet hold an inventory of its systems that is available publicly, so the size of the legacy estate must be estimated. The UK Government's benchmark, that almost 50% of central government IT expenditure is consumed by legacy estates (Cabinet Office, 2021), applied to Scotland's £1.86 billion implies roughly £930 million a year spent sustaining systems that could be classified as legacy.

Where governments have measured rather than modelled legacy system exposure, the proportion has tended to be higher. Canada reports that 62% of around 7,500 government applications are not in a healthy condition and the US federal maintenance share has been put at 79% (Office of the Auditor General of Canada, 2023; US Government Accountability Office, 2025). The House of Commons Public Accounts Committee found in March 2025 that 28% of UK central government systems met the strict definition of legacy in 2024, with more than a quarter of the 72 highest-risk systems lacking any funding for remediation (House of Commons Committee of Public Accounts, 2025). The Scottish figure should therefore be treated as a conservative estimate.

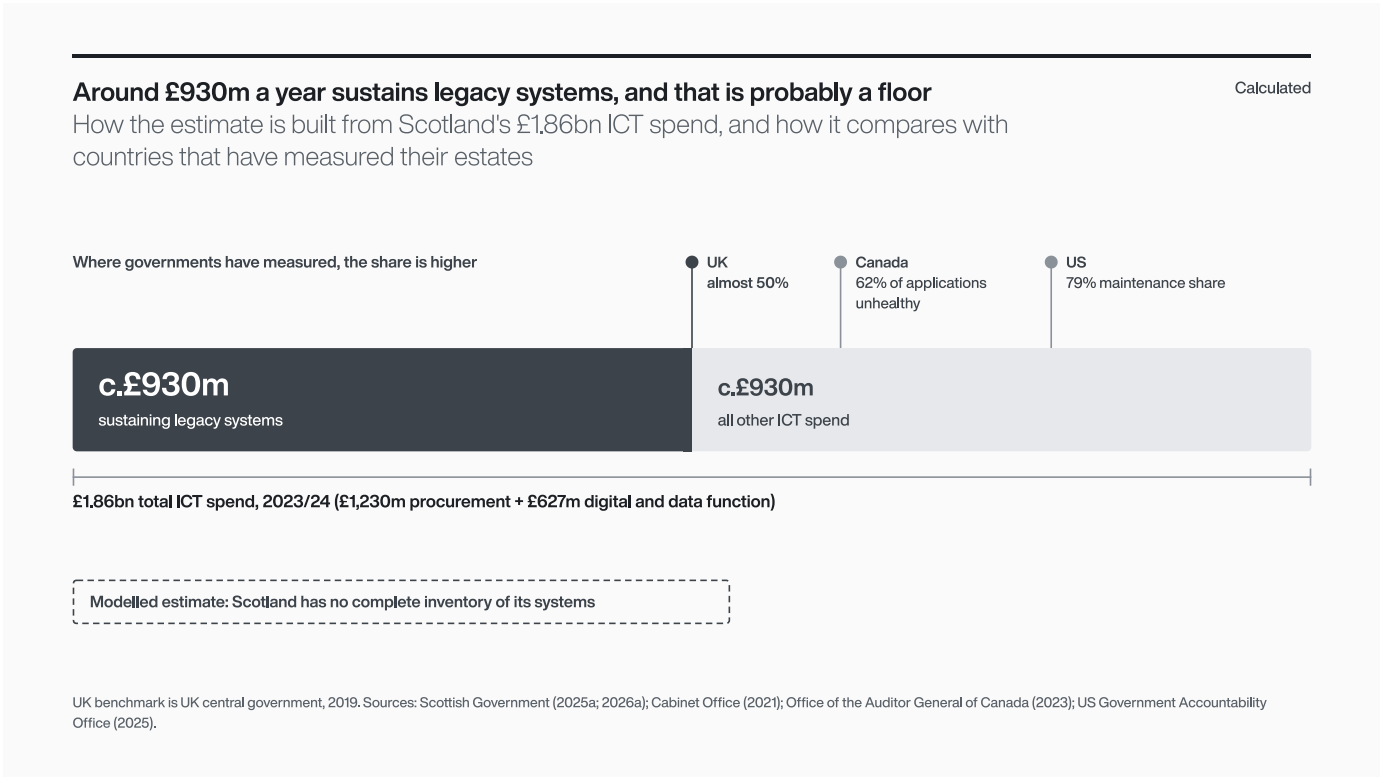
Why deferral has been rational

It is easy to criticise public bodies for living with old technology. It is more useful to understand why they have done so because the reasons are largely economic rather than a lack of appetite for change. Consider an illustrative system that costs £1 million a year to maintain. The UK Government's evidence suggests a modern equivalent would cost around £714,000, a saving of £286,000 a year (UK Parliament, 2026). If a conventional rebuild of that system costs £3 million, the payback period is ten and a half years, beyond most planning horizons and beyond the tenure of most of the people who would have to sponsor it, before any allowance is given for delivery risk. Faced with that arithmetic, extending the life of the existing system for another year has been the defensible and rational choice.

Now apply the change that AI has brought. If the same rebuild takes 40% less effort, it costs around £1.8 million. While the annual saving is unchanged, the payback period falls from ten and a half years to a little over six and the risk profile changes too because the most uncertain part of the work, understanding what the old system does, is the part that AI accelerates most.

Over ten years, the conventional rebuild has still not quite paid for itself while the AI-first rebuild is £1.1 million ahead. A decision that was marginal at best becomes one that pays back well within the working life of the new system and, for the best candidates, within a single parliamentary term.

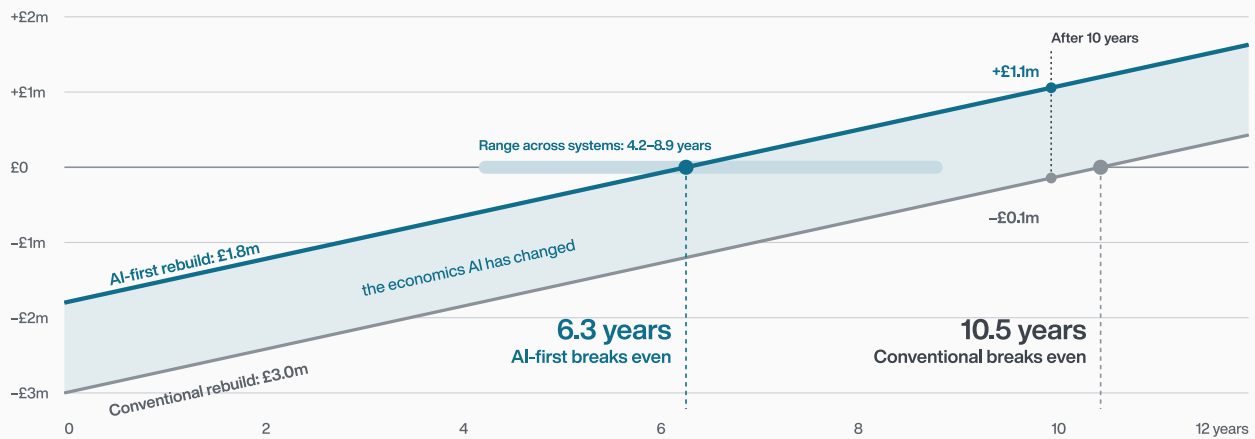
For a well-kept system, annual maintenance typically runs at 15-25% of what it would cost to rebuild while around a third is typical of an ageing legacy system. For systems that cost more to rebuild, payback is longer either way and AI will still shorten it by around 40%.



AI brings the payback forward by four years: from ten and a half years to just over six

Illustrative

Cumulative net position of rebuilding an illustrative system that costs £1m a year to maintain, saving £286k a year once replaced



Assumes a conventional rebuild costs three times annual maintenance, typical of an ageing legacy system. The band shows AI-first break-even across the 15–60% saving range; the 40% saving is measured through Alpha. Sources: UK Parliament (2026); Storm ID delivery data.

The trap compounds

On a system-by-system basis deferral of modernisation makes logical sense. Taken across the IT estate of public sector, however, it creates a cycle that becomes steadily harder to escape. Ageing software demands more maintenance, specialist support and operational workarounds. That growing burden continuously absorbs the budget and engineering capacity required to modernise. Slower modernisation leaves more systems to age, driving the support burden higher.

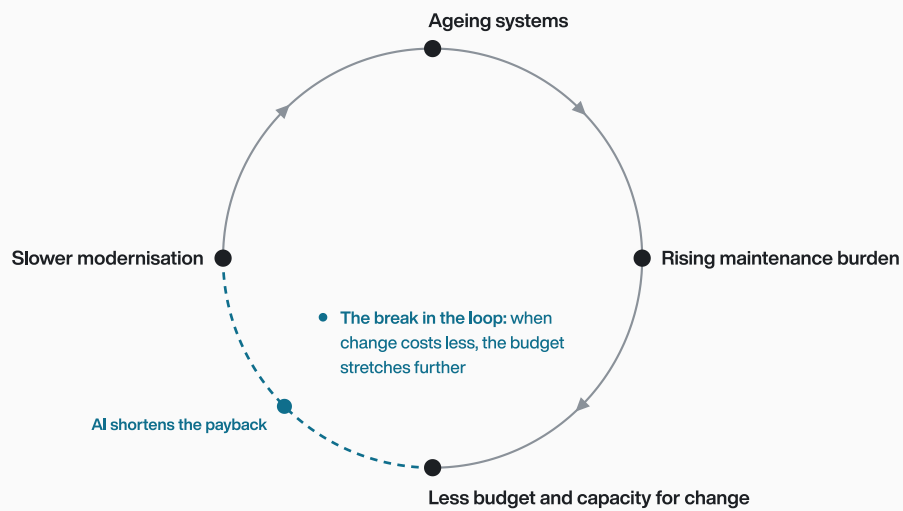
Meanwhile, costs accumulate well beyond the core IT support costs. Manual processes cannot be automated, siloed data cannot be shared and building digital services that join up functions from across different organisations to benefit citizens are often more difficult and expensive to deliver.

Equally importantly, maintaining vulnerable infrastructure expands the attack surface for cyber-attacks, a risk the Cyber Resilient Scotland action plan identifies as an urgent reason to replace legacy systems (Scottish Government, 2025c).

The question for Scotland is therefore not whether every older application is bad. Many perform critical functions reliably every day. The question is whether the cost of replacing them has fallen far enough that, over a realistic planning horizon, continuing to defer is now the more expensive choice. The evidence in the next two sections says that, for a growing share of systems, it has.

Every year of deferral makes the next year's deferral more likely

The legacy trap: a self-reinforcing cycle, until the cost of change falls



Source: Scottish Government (2025c) on cyber risk from legacy systems.

What AI changes

Modernisation begins with archaeology

Modernising an application that has evolved over twenty or thirty years begins with reconstructing how it actually works. The delivery team must establish which functions remain essential, where business rules are encoded, how information moves and which other services depend on its behaviour. It must also distinguish defects and obsolete processes from features that staff and connected systems rely on.

Documentation often describes an earlier version of the application. The knowledge needed to make sound decisions is scattered across source code, database schemas, configuration, support tickets, spreadsheets and the experience of long-serving staff.

AI can substantially accelerate the work of bringing that knowledge together. It can help engineers analyse unfamiliar code, identify business rules, trace dependencies and produce documentation for review. Findings can then be checked against operational evidence and validated with the people who use and support the service. This creates a clearer basis for deciding what to retain, simplify, retire or replace.

The value grows when analysis feeds directly into engineering. Validated findings inform specifications and prototypes; agreed requirements provide the basis for tests. AI can then help generate and refine application code, migration scripts and supporting documentation against those requirements. Maintaining traceability between the existing service, the agreed changes and the resulting implementation makes the work easier to challenge and verify.

Experienced people direct this process. Engineers make architectural decisions, service specialists validate business rules, and accountable owners decide what is accepted. AI changes how their time is used with less manual reconstruction and drafting and more attention available for resolving uncertainty, testing options and assuring the result.

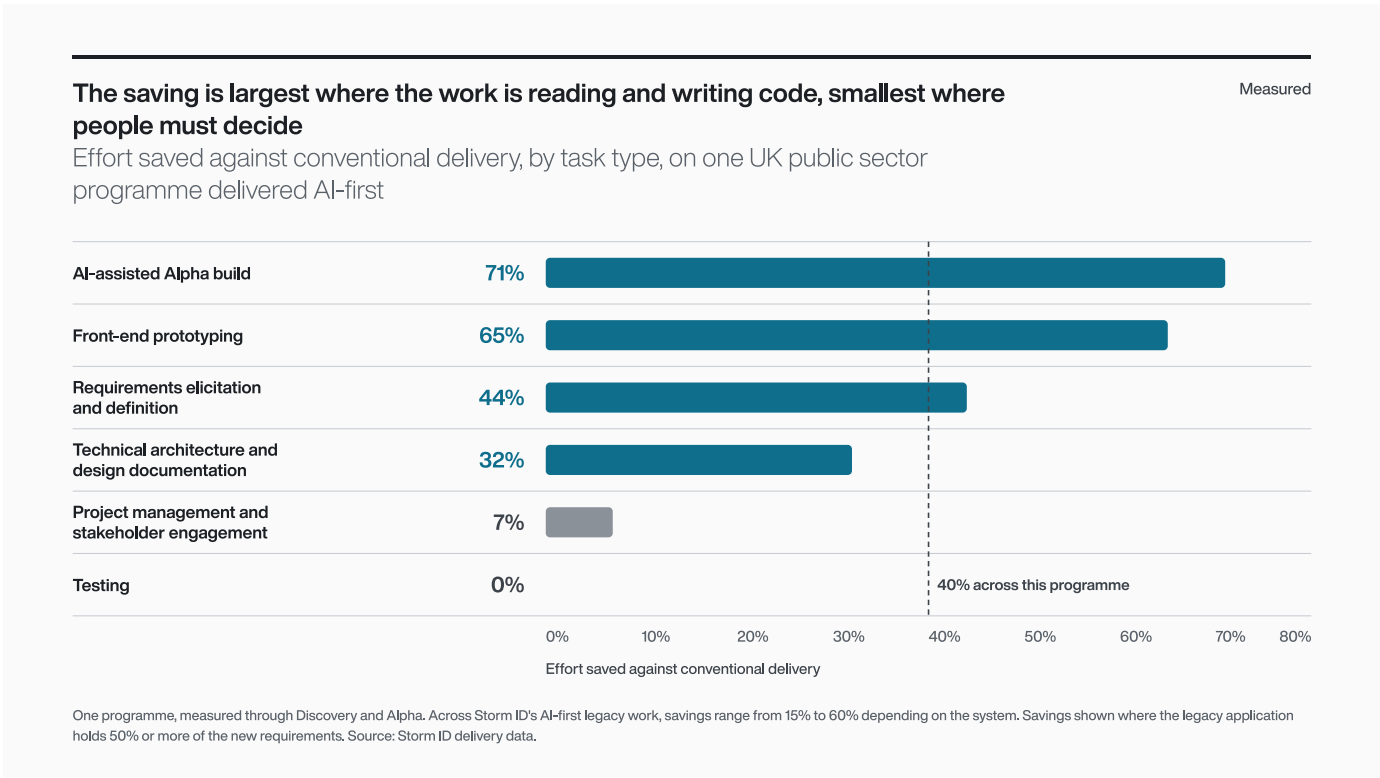
Where the saving lands

These figures come from measured delivery data rather than theoretical estimates. On one UK public sector programme delivered using an AI-first approach, we tracked effort across every task type and benchmarked it against conventional delivery baselines.

Across the programme, the like-for-like reduction in effort was 40%, with variation depending on the type of tasks undertaken:

- **Analysis, prototyping, and build:** The highest efficiencies occurred in tasks requiring the interpretation and generation of complex technical documentation and code. Within the build phase itself, coding effort decreased by 71%.
- **Governance and assurance:** Efficiencies were lowest (7%) in governance, control gates, and formal signoffs, areas that require human accountability and scrutiny.

Organisations planning AI-enabled programmes should budget for substantial efficiencies in technical analysis and software build. However, budgets should not assume material savings in governance, testing and assurance, because accelerated engineering makes these validation gates even more critical.



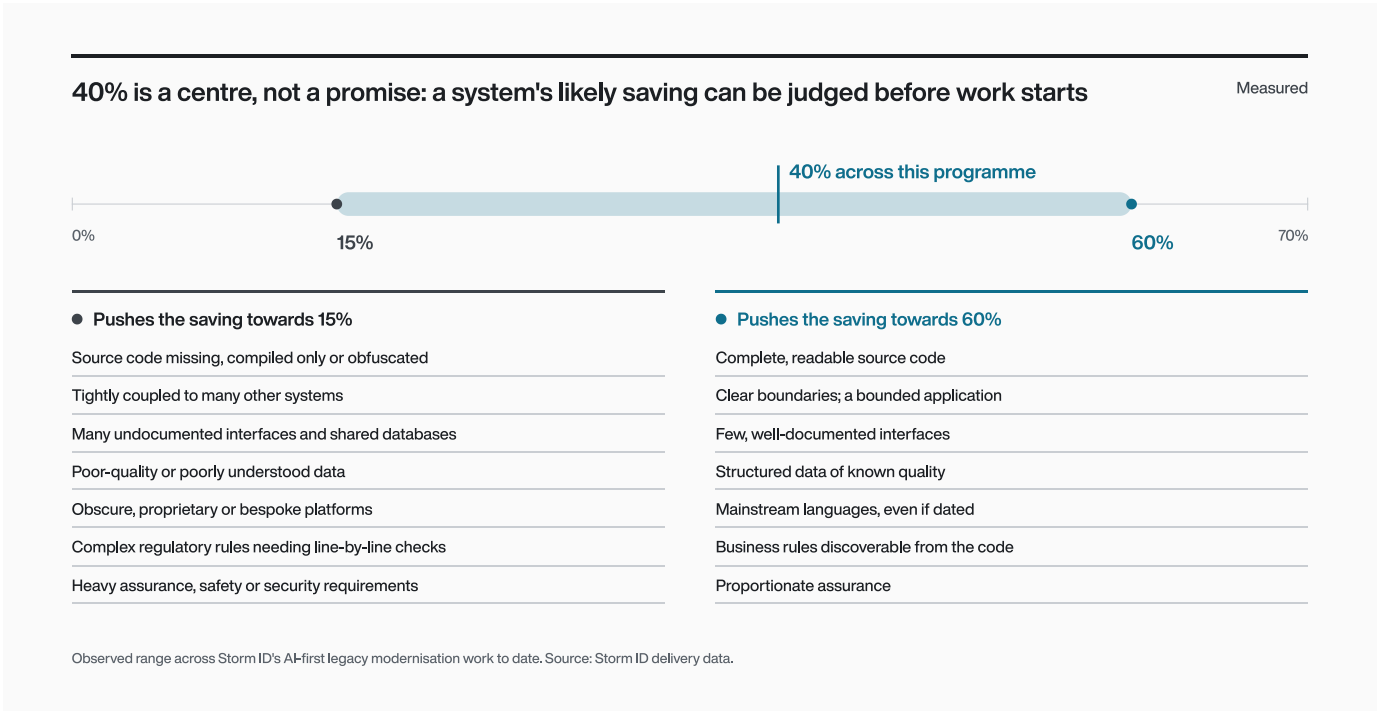
This project represents a single data point. Across Storm ID's AI-first legacy modernisation projects the savings observed span between 15% and 60%, with individual system characteristics determining where each project falls within that spectrum.

What characteristics determine the level of savings?

Systems sit at the top of the savings range when source code is available and readable, boundaries are well defined, integrations are minimal and the underlying technology is familiar to modern AI models.

Conversely, systems deliver lower savings if they are tightly coupled to other platforms, rely on poor or undocumented data, run on obscure proprietary stacks or embed intricate regulatory rules that require manual, line-by-line verification. While none of these more complex systems are unsuited to AI-led modernisation, the cost savings will be smaller because human oversight must carry far more weight.

Characteristic	Pushes the saving towards 60%	Pushes the saving towards 15%
Source code	Complete, accessible and readable	Missing, compiled only, or heavily obfuscated
Architecture	Clear boundaries; a bounded application	Tightly coupled to many other systems
Integrations	Few, well-documented interfaces	Many undocumented interfaces and shared databases
Data	Understood, structured and of known quality	Poor quality, duplicated or of unknown meaning
Technology	Mainstream languages, even if dated	Obscure, proprietary or bespoke platforms
Business rules	Standard processes; rules discoverable from code	Complex regulatory logic requiring line-by-line verification
Governance load	Proportionate assurance	Heavy assurance, safety or security requirements



The wider evidence

Storm ID's findings align with a growing body of independent research pointing to a clear conclusion that productivity gains from AI depend entirely on the nature of the task. Controlled trials demonstrate that coding assistants help engineers complete defined build assignments around 56% faster, while enterprise field studies report roughly 26% higher total output (Peng et al., 2023; Cui et al., 2024).

Keeping quality under control

Taking an AI first approach to analysis, requirements definition and software engineering requires experienced people. At every stage of Storm ID's AI-first delivery, analysts and engineers set the boundaries, direct the models, run the agents and skills, review every output and decide what is accepted. While AI accelerates the reading, drafting, and generating, human teams retain ownership of the understanding, architecture, security, and accountability. Any public body adopting AI-first modernisation should expect its governance effort to remain steady, treating that investment as the price of moving faster safely. Later in this paper, we set out what a common assurance framework for AI-first modernisation should cover.

Human review should not be the only safeguard in place. AI-generated work must also be subject to deterministic controls through objective checks that produce repeatable results, operate independently of the model and ensure defects fail visibly. Four practices are recommended to provide this protection.

- **Test against original intent:** Build automated tests from agreed acceptance criteria before code is generated. Tests written against newly generated screens simply codify the model's mistakes.
- **Validate against fixed benchmarks:** Audit every build automatically against agreed web standards such as WCAG 2.1 AA for accessibility and evaluate code structure against an agreed reference architecture.
- **Treat design systems as enforceable contracts.** Build only from version-pinned GOV.UK Design System and Scottish Government Design System (SGDS) components, and use automated pipeline checks to reject bespoke markup, style overrides and accessibility failures. That way generated interfaces cannot drift from tested, mandated public sector patterns.
- **Keep assumptions visible:** Tag every requirement and architectural decision as confirmed, assumed, or open, preventing speculative AI drafts from hardening into accepted truth as work moves downstream.

No single check is sufficient on its own. Layered together, they allow specialists to focus on the critical judgements only they can make.

The financial case for Scotland: an illustrative scenario

To show what the three numbers mean at national scale, we have modelled one possible four-year scenario in which AI-first modernisation is applied to a growing share of Scotland's legacy estate: 10% in Year 1, rising to 20%, 30% and 40% by Year 4. This is a scenario, not a forecast.

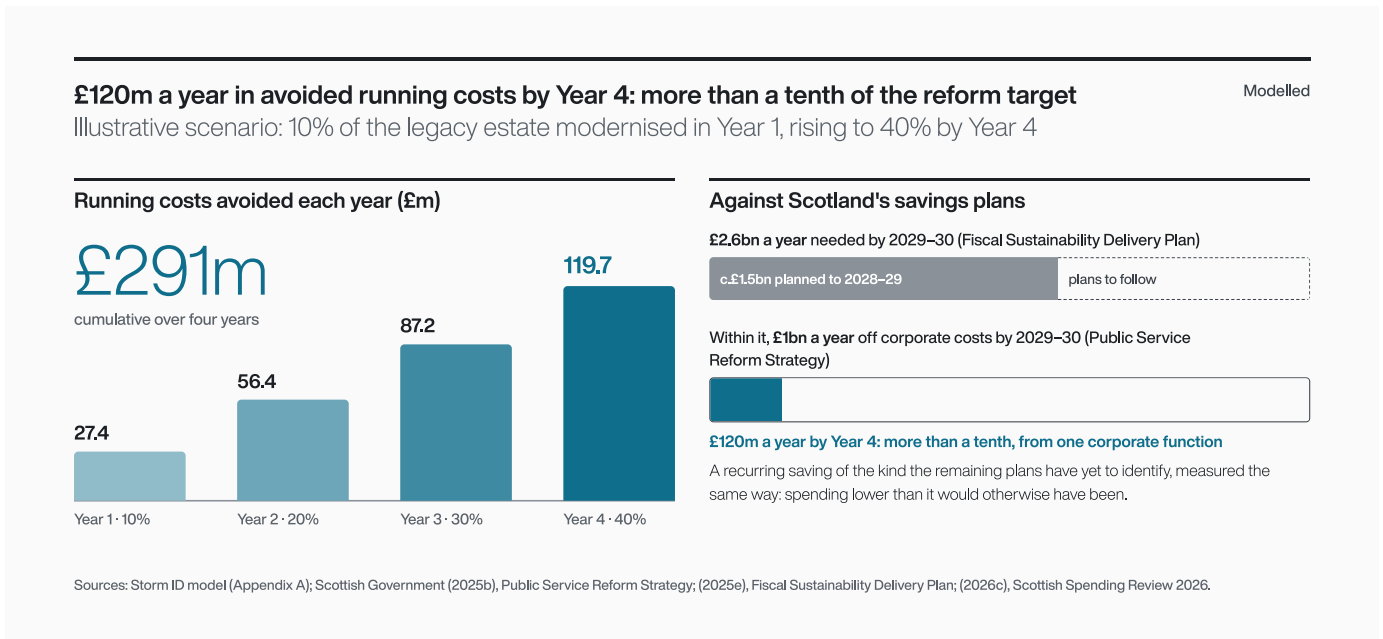
The model starts from the £930 million legacy running cost and an estimated £387 million transformation budget, found by applying the £3.80 to £1 ratio to total ICT spend of £1.86 billion. It inflates both at 3% a year, applies the 28.6% run cost saving to the modernised share of the estate and applies the 40% delivery saving to the AI-first share of the transformation budget. The £930 million rests on a UK central government benchmark that may be defined differently from the Scottish total, so it is an estimate rather than a measurement. Every input is listed with its source and status in Appendix A.

Running costs avoided

The scenario assumes that modernisation reduces the running costs of the systems replaced by 28.6%. As replacement systems enter service and legacy costs are removed, these benefits recur in subsequent years. Annual cost avoidance rises from £27.4 million in Year 1 to £56.4 million in Year 2, £87.2 million in Year 3 and £119.7 million in Year 4: approximately £291 million cumulatively over four years.

These figures measure avoided expenditure against the projected cost of continuing to operate the legacy estate, before deducting the investment required for modernisation.

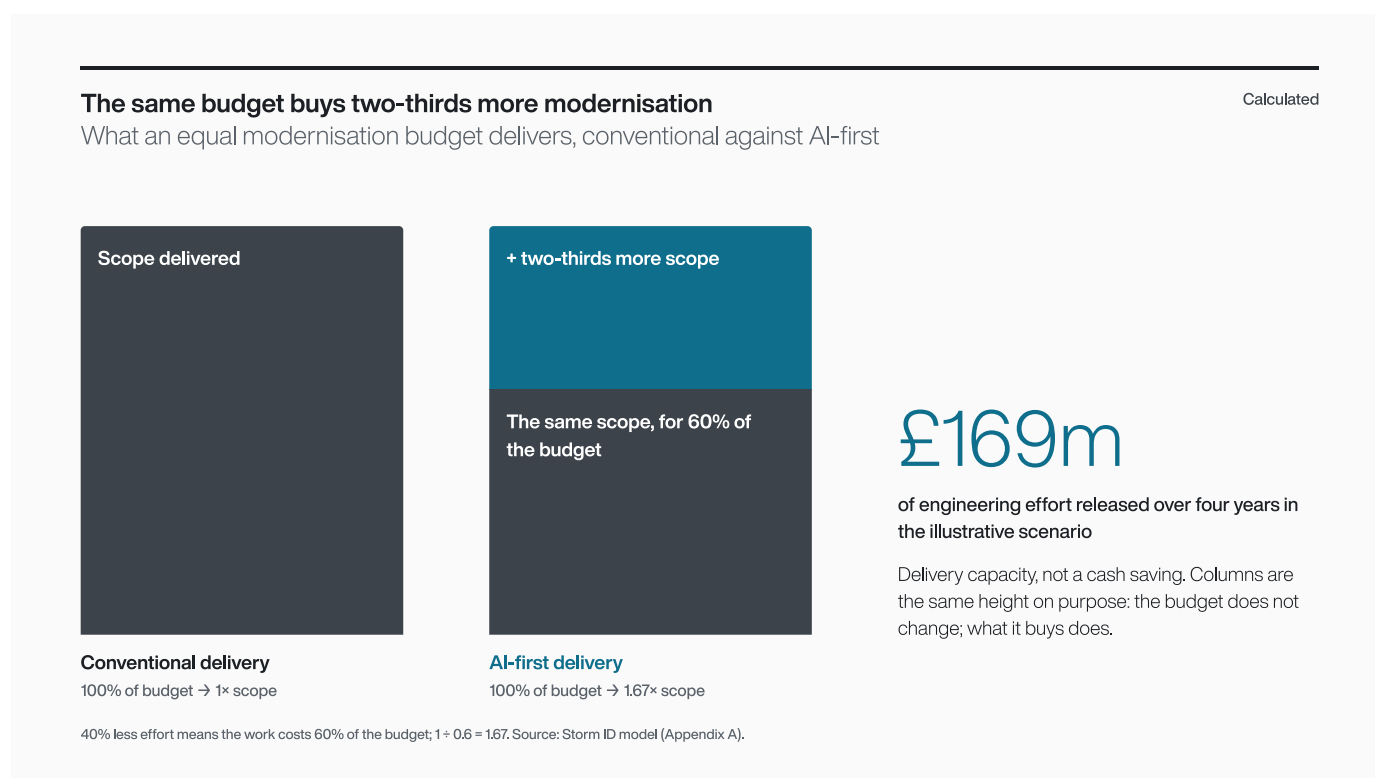
The scale is significant. Scotland's Public Service Reform Strategy commits to reducing annual Scottish Government and public body corporate costs by £1 billion over five years (Scottish Government, 2025b). The approximately £120 million annual cost avoidance illustrated by Year 4 is equivalent to 12% of that target. Its actual contribution would depend on which systems fall within the target's scope, when costs are removed and whether benefits are already counted in existing plans. Legacy modernisation therefore deserves explicit consideration within the programme's savings plans.



More modernisation for the same budget

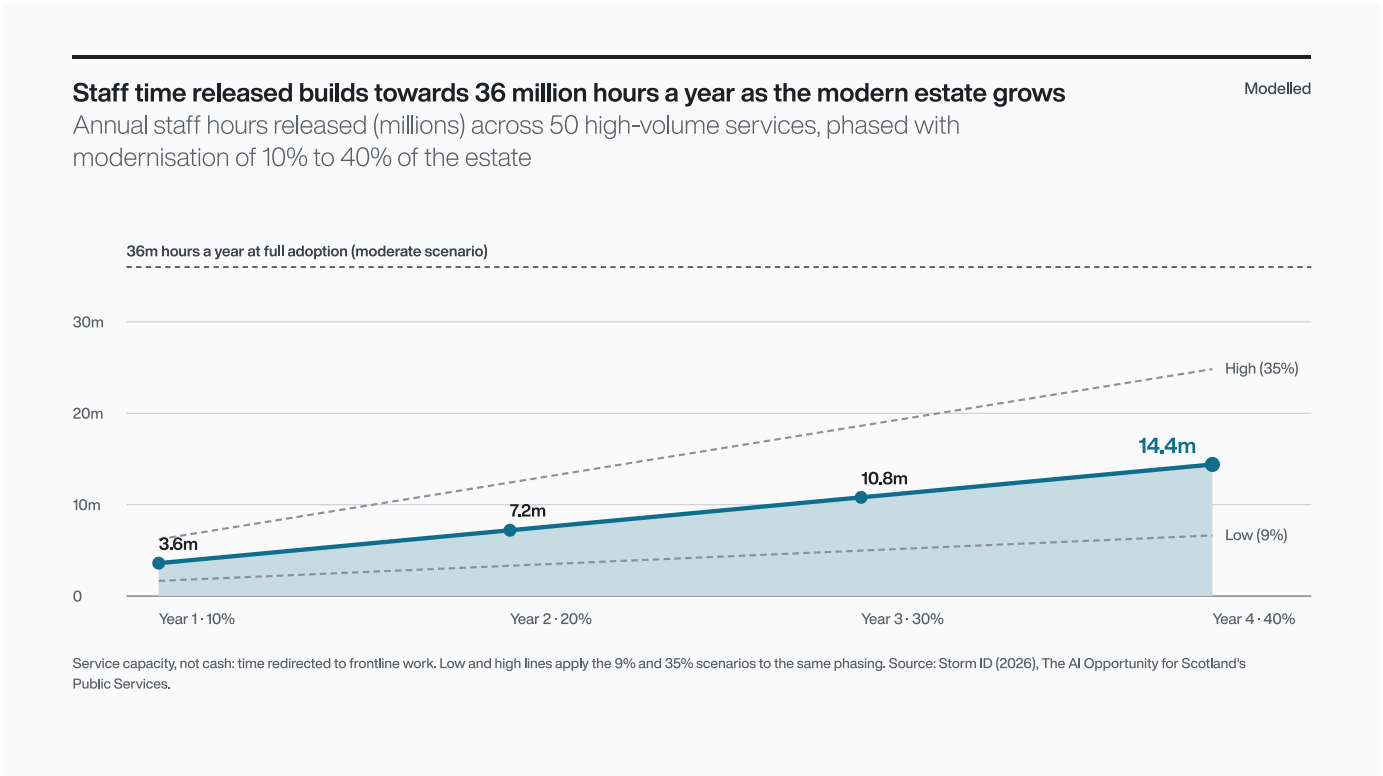
The second stream comes from the modernisation work itself. Delivering the same outcomes with 40% less engineering effort gives Scotland a choice to either reduce spend or reinvest the freed capacity to modernise faster. For a public sector carrying a heavy legacy burden, reinvesting delivers more long-term value, because it pulls forward running cost savings and expands the modern foundation that the public sector reform agenda needs.

The scenario values the released effort at £15.9 million in Year 1, rising to £32.8 million, £50.7 million and £69.7 million, a cumulative £169 million by Year 4. Expressed as scope, a 40% reduction in effort lets the AI-first budget deliver two-thirds more than conventional delivery would. This is capacity, not cash.



Staff time released

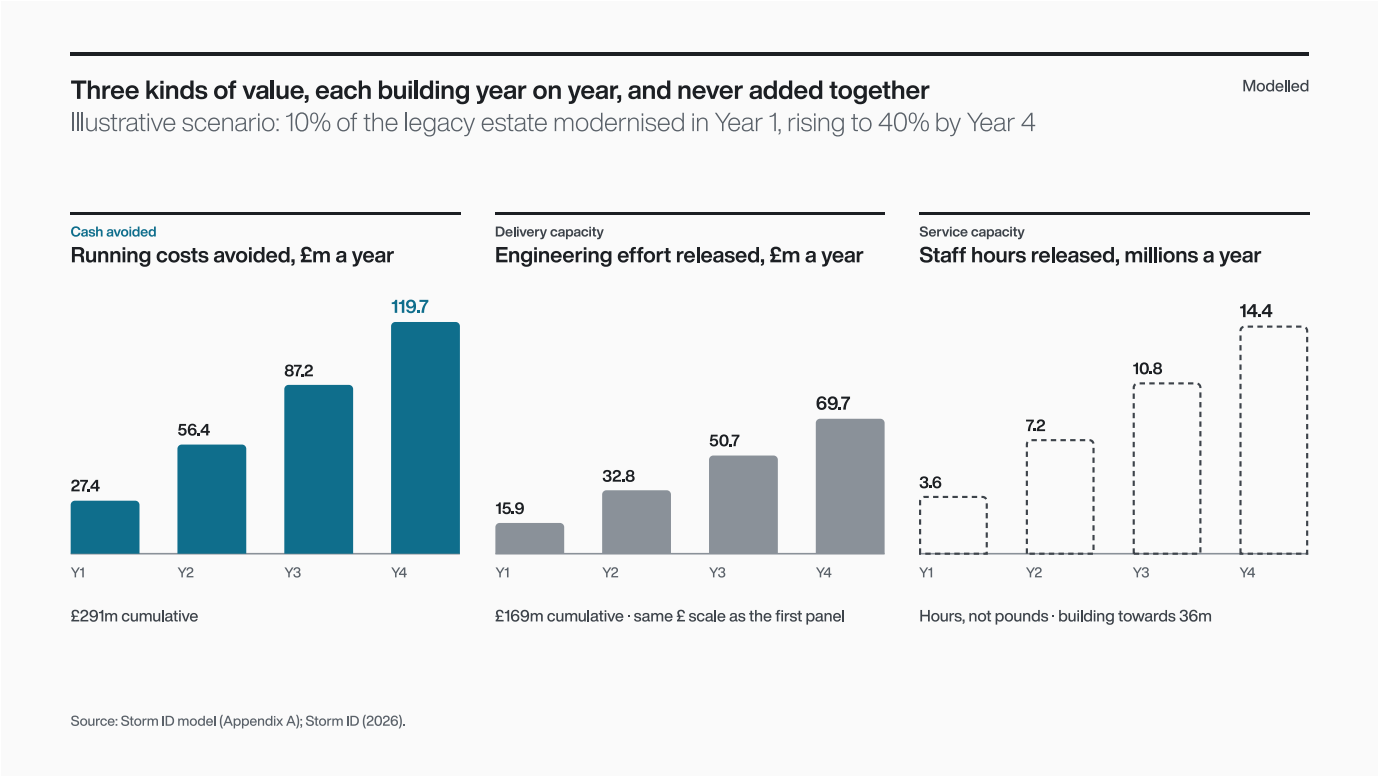
The third stream is realised only as the modern estate grows and services are redesigned around it, so the model phases it along the same 10% to 40% curve as the other two. At the moderate adoption scenario that means around 3.6 million hours released in Year 1, building to 7.2 million, 10.8 million and 14.4 million hours in Year 4, on the way to the full 36 million hours a year identified in our earlier research (Automate tasks, not jobs, February 2026). We present this in hours rather than pounds. The financial value depends on how each organisation chooses to use the time.



Three streams, side by side

Viewed together, these three streams reveal the full scale of the opportunity. Avoided operational cost represents direct expenditure removed from budgets. Released engineering effort provides delivery capacity that achieves more transformation without requiring additional capital. Released staff time creates vital public service capacity at a moment when Scotland’s demographic and fiscal realities make workforce capacity increasingly critical.

Reporting these outcomes separately preserves their distinct characteristics. Together, they outline a public sector where technology expenditure steadily pivots away from the burden of maintaining legacy estates toward a sustained capability for continuous modernisation.



How sensitive is the case?

Two key assumptions drive these figures. First, delivery savings dictate the engineering capacity unlocked. At the lower saving estimate of 15%, savings total £63 million over four years, while at the upper estimate of 60%, they rise to £254 million, with no effect on ongoing operating costs. Second, the savings depend on how much of the estate is modernised. If only half the targeted systems can be addressed in the available time, the avoided running costs will be roughly halved too.

Timing also affects real-world returns. While the model logs savings the year a system is modernised, practical realisation follows cutover, parallel operations, and contract termination. Factoring in a one-year lag reduces avoided running costs to roughly £90 million annually by Year 4, totalling £176 million cumulatively.

Finally, baseline rebuild costs are less critical than they seem. Across conventional rebuild estimates ranging from two to four times annual maintenance, AI-led delivery consistently shortens payback by 40% in the core scenario.

Assumption	Range tested	Effect	Used in this paper
AI delivery saving	15% / 40% / 60%	£63m / £169m / £254m cumulative effort released by Year 4	40%
Run cost saving on modernised systems	15% / 25% / 35%	Brackets the 28.6% result; see Appendix A	28.6%
Share of legacy estate addressable	50% / 100%	£60m / £120m a year avoided by Year 4	100%
Timing of savings	Same year / one-year lag	£120m / £90m a year avoided by Year 4	Same year
Conventional rebuild cost (single-system illustration)	2x / 3x / 4x annual maintenance	Conventional payback 7.0 / 10.5 / 14.0 years; AI-first 4.2 / 6.3 / 8.4 years	
Reinvestment of avoided cost	Not modelled	Phasing is held fixed; reinvestment would accelerate it (see 5.6)	–

Even on the paper's own figures, the case pays back at programme level. On the paper's central assumptions, a system repays its AI-first rebuild in around six years through lower running costs. That ranges from around four to nine years depending on how costly the system is to rebuild and how much AI reduces the effort. On the same central assumptions, the programme as a whole would recover its investment within around eight years. None of these sensitivities changes the direction of the case, and all of them argue for the inventory recommended later, which would replace estimates with measurement.

What reinvestment adds

Every system replaced costs less to run. If those savings are absorbed into general budgets, each wave of modernisation must be funded from scratch. If a share is put back into replacing the next systems, each wave helps pay for the one after it and modernisation speeds up without any increase in the budget.

Where modernisation produces verified cashable savings, reinvesting an agreed share could help fund subsequent work. This requires an explicit funding arrangement whereby the first wave needs investment before benefits arrive and savings may accrue to a different organisation or budget from the one paying for delivery.

The programme should report savings retained for budget reduction separately from those reinvested. Released staff or engineering capacity should be reported separately again. The pace of later waves should depend on demonstrated benefits, delivery capacity and the business cases for the next systems.

A route for Scotland: five recommendations

Scotland should begin with a focused first wave of legacy transformation using AI first improvement to deliver improvements while building the evidence for wider investment. The Programme for Government 2026-2031's emphasis on common services, shared data and a "tell us once" approach provides a clear direction.

AI-assisted analysis and engineering can help public bodies understand what to retain, combine or replace, and accelerate the work required to implement those decisions.

1

Create a Scottish public sector legacy technology inventory

Scotland needs a shared understanding of its legacy estate to direct investment effectively. The Cyber Resilient Scotland action plan already commits government and national digital service providers to identifying legacy systems and understanding their risks.

Build on that commitment and existing organisational records to capture ownership, operating costs, support status, critical dependencies, data sensitivity and replacement plans. This would provide a firmer basis for identifying priorities, opportunities for reuse and the scale of investment required. Work on the inventory should proceed alongside discovery on promising first-wave candidates.

2

Prioritise by value and feasibility

Candidate systems should be selected against four vectors:

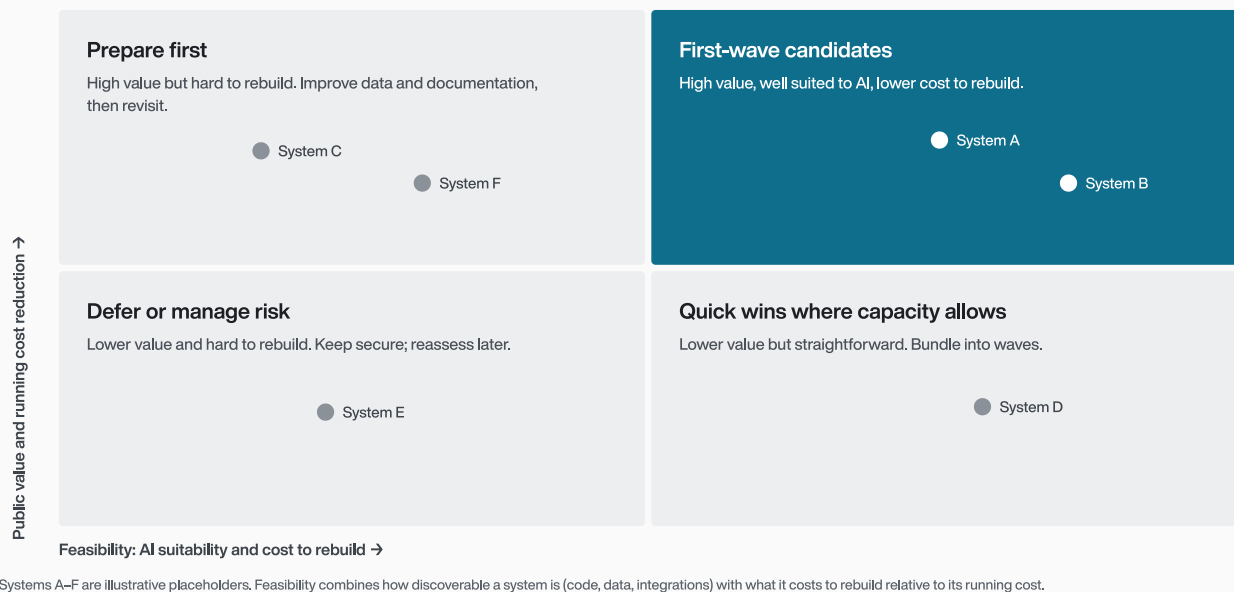
- **Whole-life cost:** the cost of continuing with the existing system compared with change, transition and ongoing operation.
- **Service outcomes:** improvements in access, timeliness, prevention and joined-up delivery.
- **Operational risk:** exposure to failure, security weaknesses or loss of supplier support and specialist knowledge.
- **Wider reform:** opportunities to remove duplication and reuse capabilities across public bodies.

AI-assisted discovery should inform the choice between improving, retiring, sharing, buying, incrementally replacing or rebuilding. Feasibility depends on access to code and data, supplier cooperation, integration complexity and the ability to maintain service continuity.

Coordinate a representative first wave through the Public Service Reform programme, with participating bodies agreeing ownership, funding and success measures. Include different system types and levels of complexity so that the results establish where the approach can scale. Urgent resilience needs should remain a priority even where financial payback is limited.

Start where value is high and the rebuild is straightforward

Illustrative



3

Create a common AI-first delivery and assurance framework

A common framework should give public bodies a consistent basis for AI-first delivery, aligned with Scottish Government guidance and proportionate to each service's risks.

It should cover approved tools and environments, information protection, human accountability, architecture, security, testing, accessibility and traceability. Each project should demonstrate readiness for live operation, with clear ownership and support arrangements. Sharing proven methods, controls and components will reduce duplication and help teams apply the approach consistently.

4

Measure outcomes consistently from the first wave

Agree baselines before work begins and measure delivery time, effort, cost and quality alongside operating costs, systems retired and outcomes for users and staff. Comparisons with conventional delivery should state the scope and basis of the benchmark.

Operational staff and workforce representatives should help establish how released time will improve services. Commercial arrangements should translate engineering efficiencies into lower costs or additional accepted work. Independent evaluation should test the results and inform decisions to stop, adapt or expand the programme.

5

Reinvest demonstrated benefits

Commit an agreed share of verified cashable savings to subsequent modernisation, with funding arrangements established at the outset. The first wave requires upfront investment while later waves should draw on demonstrated returns and sound business cases.

Report savings retained for budget reduction separately from those reinvested and distinguish both from released staff and engineering capacity. This creates a practical basis for sustained improvement: each wave delivers value, strengthens the evidence and informs the next investment decision.

A route for Scotland: five steps that repeat with every wave

1

Know the estate

A national legacy inventory, building on Cyber Resilient Scotland

2

Select a first wave

Representative systems, chosen on value and feasibility through Public Service Reform

3

Modernise under common assurance

One AI-first delivery and assurance framework for every wave

4

Measure

Effort, cost, quality and service outcomes on a common basis

5

Scale and reinvest

A defined share of proven savings funds the next wave

- **Measure throughout:** from the first day of every wave, not as a phase after delivery
- **Evidence compounds with every wave:** each wave's results select and fund the next, back to step 1

Conclusion: the cost of standing still has changed

Legacy systems have persisted for entirely rational reasons. Replacing them was expensive, protracted and high risk. When the return on investment stretched beyond the horizon of any political cycle or single sponsor, keeping them alive was the defensible choice. Scotland's public sector made that calculation repeatedly and it now spends an estimated £930 million a year managing the consequences.

AI does not remove delivery risk, but it changes the arithmetic. Analysis that once took months of scarce specialist time can now be done in a fraction of it, rebuilding takes around 40% less effort, the modern systems left behind cost around 28% less to run and they make possible the service redesign that can release a fifth of staff time. A payback of more than ten years becomes a little over six, and for a growing share of systems a marginal case becomes a strong one.

This paper proposes a phased programme with initial funding and expansion based on demonstrated results. This requires a disciplined sequence of assessing the estate, identifying high impact candidates for an initial wave, modernising under shared assurance standards, measuring outcomes consistently and reinvesting what is proven to work.

Approached this way, Scotland can move its technology investment from the cost of standing still to the capacity to keep improving.

~40%

Less effort to rebuild

28.6%

lower running costs

~20%

of staff time released

Move Scotland's technology investment from the cost of standing still to the capacity to keep improving.

Assess your own estate against the prioritisation matrix and test the numbers on one system.

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Appendix A: Method statement

This paper combines published data, Storm ID programme measurement, calculations from published inputs and scenario assumptions. They are not the same kind of evidence, and each figure below is labelled accordingly.

Label	Meaning
Published	External published data, cited in the references
Measured	Storm ID programme measurement from logged delivery effort
Calculated	Derived arithmetically from published or measured inputs
Modelled	Scenario assumption chosen by Storm ID

Year basis

All figures are for 2023/24, the most recent year for which both the procurement spend data and the Scottish Government’s corporate function data on the digital and data function are available. The 2023/24 corporate function data set covers NHS healthcare organisations and the Scottish Government as well as other public bodies.

Input chain

Input	Value	Source	Status
Procurement spend	£1,230.4m	Scottish Government (2025a): Information and Communications Technology (ICT) Spend Data: FOI Release (FOI-202500483899).	Published
Digital and data function cost – NHS Healthcare Organisations	£399.0m	Scottish Government (2026a): Corporate Function Data for Public Bodies including NHS Healthcare Organisations and Scottish Government, 2023-24 and 2024-25.	Published
Digital and data function cost – Scottish Government and Public Bodies	£227.6m	Scottish Government (2026a): Corporate Function Data for Public Bodies including NHS Healthcare Organisations and Scottish Government, 2023-24 and 2024-25.	Published

Input	Value	Source	Status
Total digital and data function cost	£626.6m	Sum of the above two lines	Calculated
Total Scottish public sector ICT spend	£1.86bn	Sum of procurement spend and total digital and data function cost	Calculated
Spend on digital transformation – NHS health organisations	£23.0m	Scottish Government (2026a): Corporate Function Data for Public Bodies including NHS Healthcare Organisations and Scottish Government, 2023-24 and 2024-25.	Published
Spend on digital transformation – Scottish Government and public bodies	£136.5m	Scottish Government (2026a): Corporate Function Data for Public Bodies including NHS Healthcare Organisations and Scottish Government, 2023-24 and 2024-25.	Published
Total spend on digital transformation	£159.5m	Sum of the above two lines	Calculated
Spend on running IT & digital – NHS health organisations	£312.3m	Scottish Government (2026a): Corporate Function Data for Public Bodies including NHS Healthcare Organisations and Scottish Government, 2023-24 and 2024-25.	Published
Spend on running IT & digital – Scottish Government and public bodies	£293.8m	Scottish Government (2026a): Corporate Function Data for Public Bodies including NHS Healthcare Organisations and Scottish Government, 2023-24 and 2024-25.	Published
Total spend on running IT & digital	£606.1m	Sum of the above two lines	Calculated
Change to run ratio	1: 3.80	£606.1m/£159.5m = £3.80 Total spend on running IT & digital / total spend on digital transformation = £3.80	Calculated

Input	Value	Source	Status
% of budget spent on transformation	20.8%	$\text{£}606.1\text{m} + \text{£}159.5\text{m} = \text{£}765.6\text{m}$ Total spend on running IT & digital + total spend on digital transformation = $\text{£}765.6\text{m}$ $\text{£}159.5\text{m} / \text{£}765.6\text{m} * 100 = 20.8\%$ Total spend on digital transformation/total spend *100 = 20.8%	Calculated
Transformation budget	£387m	$20.8\% * \text{£}1.86\text{bn} = \text{£}387\text{m}$ % of budget spent on transformation* Total ICT spend = $\text{£}387\text{m}$	Calculated
Legacy share of IT spend	50%	Cabinet Office (2021): Organising for Digital Delivery.	Published
Scottish legacy spend	£930m	$50\% * \text{£}1.86\text{bn} = \text{£}930\text{m}$ Legacy share of IT spend * total ICT spend	Calculated
Legacy cost premium	Around 40%	UK Parliament (2026): Written Question UIN 7325, ICT: Labour Turnover, answered 12 June 2026.	Published
Run cost saving on modernised systems	28.6%	$1 - (1 \div 1.40)$	Calculated
AI delivery saving	40% central (15% low, 60% high)	Storm ID logged effort, AI-first legacy modernisation programmes	Measured
Staff time recoverable	20.2% (36.0m of 177.8m hours)	Storm ID (2026): The AI Opportunity for Scotland's Public Services, moderate scenario	Modelled
Inflation	3% a year	Storm ID	Modelled
Modernisation phasing	10/20/30/40% of legacy estate over four years	Storm ID	Modelled
Addressable run cost	100% of legacy spend	Assumed: All legacy spend is in scope	Modelled

Derivation

The UK Government states that legacy systems cost around 40% more to maintain than modern alternatives. A 40% premium is not a 40% saving: if legacy equals 1.40 times modern, the recoverable amount is 1 minus 1 divided by 1.40, or 28.6% of legacy running cost. The projection starts from legacy spend of £930 million, all of which is assumed to be addressable. Modernisation is phased at 10%, 20%, 30% and 40% of that estate across four years and savings accrue only on the modernised portion. The delivery saving of 40% is applied to the same phased share of the £387 million transformation budget. Both the run cost base and the transformation budget are inflated at 3% a year so that the comparison is like for like. Released staff hours follow the same phasing curve applied to the 36.0 million hours of the moderate scenario. Run cost avoided by year is £27.4m, £56.4m, £87.2m and £119.7m (cumulative £290.8m); engineering effort released is £15.9m, £32.8m, £50.7m and £69.7m (cumulative £169.2m); staff hours released are 3.6m, 7.2m, 10.8m and 14.4m. Engineering effort released is calculated on the share of the transformation budget directed to AI-first delivery, not the full cost of rebuilding the systems replaced, so it is likely to understate the effort released.

Sensitivity on run cost reduction

As a check on the single Department for Science, Innovation and Technology (DSIT) figure, the grid below ignores the 40% premium and tests run cost reductions of 15%, 25% and 35% against the 10%, 20%, 30% and 40% modernisation phasing used in the model. The 28.6% implied by the premium sits between the 25% and 35% columns, so the two approaches are consistent with one another.

Year (share of estate modernised)	15% reduction	25% reduction	28.6% reduction	35% reduction
Year 1 (10%)	£14.4m	£24.0m	£27.4m	£33.5m
Year 2 (20%)	£29.6m	£49.3m	£56.4m	£69.1m
Year 3 (30%)	£45.7m	£76.2m	£87.2m	£106.7m
Year 4 (40%)	£62.8m	£104.7m	£119.7m	£146.5m
Cumulative	£152.5m	£254.2m	£290.8m	£355.8m

Limitations

No Scottish inventory of IT systems exists, so every estate figure is derived from UK benchmarks applied to Scottish spend rather than measured. The DSIT 40% figure is a ministerial answer without published underlying methodology; it is authoritative as a government position but not an audited calculation. The like-for-like measurement of 40% comes from Discovery and Alpha on one programme in one department; the 15–60% range draws on Storm ID’s wider AI-first legacy delivery experience, and extrapolating either to a four-year national programme is the largest inferential step in this paper. The 71% saving on Alpha build reflects a high proportion of generative work in that scope and is not a general rate. Reinvestment is a policy choice and is not modelled. The Data Commission notes that Health and Social Care data was collected on a different basis and is not directly comparable with other portfolios. Delivery capacity and staff hours are not cash and are never presented as savings.

What would change the answer

A Scottish system inventory would replace the addressability assumption with a measurement and is this paper’s first recommendation. Publication of the methodology behind DSIT’s 40% figure would firm up the run cost saving. Further Storm ID measurement on complete legacy replacements would test whether the task-type savings hold beyond Discovery and Alpha, and 2024/25 procurement data would provide a second comparable year.

4 Year Modelling

Run cost avoidance

	Today	Year 1	Year 2	Year 3	Year 4
Do nothing: legacy run cost	£930.0m	£957.9m	£986.6m	£1,016.2m	£1,046.7m
% of estate modernised	0%	10%	20%	30%	40%
Modernise: legacy run cost	£930.0m	£930.5m	£930.2m	£929.0m	£927.0m
Run cost avoided	-	£27.4m	£56.4m	£87.2m	£119.7m
Cumulative	-	£27.4m	£83.8m	£171.0m	£290.8m

Engineering effort released

	Today	Year 1	Year 2	Year 3	Year 4
Transformation budget	£387.0m	£398.6m	£410.6m	£422.9m	£435.6m
% of estate modernised	0%	10%	20%	30%	40%
Share of transformation budget delivered AI-first	-	£39.9m	£82.1m	£126.9m	£174.2m
Effort released (40%)	-	£15.9m	£32.8m	£50.7m	£69.7m
Cumulative	-	£15.9m	£48.8m	£99.5m	£169.2m

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