



REPORT

The Bank of England's Real-Time Gross Settlement system renewal programme

Bank of England



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National Audit Office

The Bank of England's Real-Time Gross Settlement system renewal programme

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Report by the Comptroller and Auditor General

Ordered by the House of Commons
to be printed on 10 December 2025

This report has been prepared under Section 6 of the
National Audit Act 1983 for presentation to the House
of Commons in accordance with Section 9 of the Act

Gareth Davies
Comptroller and Auditor General
National Audit Office

1 December 2025



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Key facts

**Around
£790bn
a day**

average value of UK sterling transactions settled within the Real-Time Gross Settlement system (RTGS)

£431mn

total cost of RTGS renewal programme

9 years

time from announcement of intention to renew the system to launch of the new system

January 2016	announcement date of the Bank of England’s (the Bank’s) intention to modernise the RTGS
June 2023	implementation date of new payment messaging standard for CHAPS, the UK’s high-value payment system, a major milestone for the renewal programme
28 April 2025	launch date of the new RTGS
5	number of priority areas for enhancement set out in the Bank’s 2017 vision for the new RTGS, and where the Bank has delivered benefits with the new system. Priority areas were: resilience; wider access; interoperability; user functionality; and end-to-end risk management of CHAPS
4	number of replans required to renewal programme, in response to internal and external factors
20 years	period over which the Bank will recover renewal costs from system users, which include payment service providers, banks, building societies and other financial service providers

Summary

Introduction

- 1** The Bank of England (the Bank) operates the Real-Time Gross Settlement system (RTGS), which provides settlement services for sterling payments in the UK, worth around £790 billion a day. 'Settlement' is the stage of finalising payments by completing the transfer of funds between relevant parties. The RTGS therefore underpins the UK's sterling payment systems, including CHAPS (the UK's high-value payment system) and retail payment systems, such as Bacs.
- 2** The RTGS is vital in ensuring monetary and financial stability and government has designated it as critical national infrastructure (CNI). The system was introduced in 1996, and is used by banks, building societies, payment service providers (like Visa) and other types of financial providers (such as Wise) to settle payments.
- 3** In January 2016, the Bank set out its intention to modernise the RTGS. In 2017, it published *A blueprint for a new RTGS service for the United Kingdom* (the Blueprint), setting out its vision and five priorities for the new service: resilience; access; interoperability; user functionality; and strengthened end-to-end risk management of CHAPS.
- 4** In 2016, the Bank established the RTGS renewal programme (the programme), contracting with Accenture as its technical delivery partner in 2020. In April 2025, it successfully launched the new system.
- 5** The Bank recovers the operating cost of the RTGS from its users via a tariff of charges. From 2025, the Bank has increased the tariff to recover the costs of the programme over a 20-year period.

Scope of this report

6 This report examines whether the Bank managed the RTGS renewal programme effectively and efficiently to achieve a new system resilient to future developments and risks, and whether it has identified wider learning from the programme. This includes:

- whether the Bank developed a clear vision and strategy, with effective governance, accountability and decision-making arrangements, for the programme;
- whether its management of the programme was effective, efficient and sufficiently adaptable to change; and
- whether the Bank is applying learning from the programme to future development of the RTGS, as well as the Bank's wider digital transformation.

7 We did not undertake a detailed technical assessment of the new (or old) RTGS, although we did examine the programme's approach to gaining assurance over the technical design and implementation and, at a high-level, its approach to cyber security and resilience. We have not evaluated the role and ongoing operation of the RTGS and CHAPS, although the report includes relevant contextual information, and some recommendations are relevant to future business-as-usual operations.

Key findings

What the programme has achieved

8 The Bank achieved its important aim of implementing a new, modernised RTGS.

On 28 April 2025, the Bank launched the new RTGS, which incorporated the main features set out in the Blueprint, with capacity for improved functionality in the future. A major step towards modernising the RTGS was the migration of CHAPS to a new messaging standard for payments (ISO 20022), which includes more structured and detailed data and can improve interactions with other financial systems. The Bank completed this migration in June 2023 (paragraphs 1.7 and 3.10).

9 The Bank's approach to renewal addressed many common problems that we have identified in public sector digital programmes. The Bank's implementation of the programme was careful and well managed, successfully addressing a high number of risks and uncertainties. Its approach demonstrated good practice alongside innovative elements. We describe these positive elements in detail throughout the summary and main report (paragraph 1.9 and Figure 4).

Preparations for delivery

10 The Bank invested significant effort upfront to set out the key detailed requirements for the new system before moving to design and implementation, which avoided issues that we have seen cause problems in other public sector digital change projects. During the planning phase, the Bank ran an extensive internal process drawing on payments, technical and procurement specialists to specify requirements for the new RTGS, having consulted widely with stakeholders to understand priorities. It engaged with other central banks and CNI projects, along with using independent assessments, to inform key decisions about its approach. These decisions included building rather than buying an RTGS, appointing an external delivery partner, and implementing a new technology approach (paragraphs 1.6 and 1.14 to 1.16, and Figure 4).

11 The Bank used a 'competitive dialogue' procurement approach which allowed it to refine the system design, drawing on a wide range of technical expertise. The Bank's approach overcame many common issues that we have found in government's working with technology suppliers. It refined designs with three suppliers prior to awarding the main contract. The procurement included an innovative 'competed design' element, in which bidders designed and built a simplified payment system, to test their technical approach and responsiveness to customer needs. The Bank told us it was able to apply lessons from the dialogue process to shape the final design. The Bank awarded the contract to Accenture to design and build the new core settlement engine (a central component which processes payments) and core ledger (the record of financial accounts) for the RTGS. The contract also covered Accenture overseeing the integration of all the multiple components of the system. The Bank paid £125,000 to each of the two unsuccessful bidders towards the costs of the 'competed design' exercise (paragraphs 1.17 to 1.20 and Figures 4 and 6).

12 The programme's governance and accountability arrangements contained a mix of executive, business area and technical involvement, supporting effective and timely decision-making. The Bank adapted the programme's governance as it progressed. It first established the RTGS Renewal Committee (RRC), to provide strategic oversight, later replacing it with the Renewal Executive Board (REB), which had executive decision-making authority. The REB provided overall approval for go-live decisions, using set readiness criteria. It delegated the final go-live decision to the programme's senior owner and technical director, so that decisions were made by those with detailed knowledge of the programme's readiness (paragraphs 1.21 to 1.23 and Figures 4 and 7).

Programme management and delivery

13 The Bank managed a high level of complex and evolving risks and interdependencies throughout the programme, including replanning when necessary. The Bank operated a 'three lines of defence' model to manage risk, comprising internal assurance provided by the programme, the Bank's wider risk directorate and internal audit, and complemented by external assurance. It undertook four major replans of the programme, using them to address issues and continue towards its main objectives, while ensuring scrutiny and approval for increased costs and timelines.

- The first replan (winter 2021-22) was the most significant one, resulting from the need to shift the technology platform from one being developed for the wider Bank to a programme-specific one. The Bank also addressed several other risks to delivery, with a full reset of the programme, change in governance, and removal of a set of future enhancements from the scope.
- The second replan (winter 2022-23) was caused by an external 'shock' outside the control of the Bank. The European Central Bank (ECB) moved its migration date for the new messaging standard close to the Bank's date, creating too high a level of change for users to manage safely.
- The third and fourth replans (spring and autumn 2024) were related to technical issues with different components in the system, which required more time to test and resolve.
- The cumulative impact of the replans on the timeline was to delay the launch of the new system by around 18 months. This is at the lower end of the range of delays (between one and eight years) that we have observed in our work on government digital change programmes (paragraphs 2.2 to 2.6 and Figures 4 and 8).

14 The estimated overall cost of the programme is £431 million, 15% more than originally planned. In the programme's 2020 final business case, the approved budget was £375 million, of which 11% was contingency for identified risks, lower than the industry standard for similar projects. In our view, the Bank could have considered retaining a cost range at this stage or estimating a higher contingency to factor in 'unknown' risks, to better reflect the level of uncertainty. Around £23 million of the increase was caused by an external 'shock' manifesting (the change in the ECB migration programme date), which the business case made clear was not covered by the approved budget. Budget increases reflected the four replans, with the programme operating within approved costs between replans. In our view, the increase in cost was reasonable given the size and complexity of the programme, and the number of uncertainties and risks that the Bank had to manage (paragraph 2.7).

15 The Bank actively managed significant resourcing risks throughout the programme.

The programme used a planned mix of Bank and external staff, reflecting the need to make use of internal RTGS payments and technical specialists, as well as external expertise. At its peak in 2022 and 2023, over 450 staff (headcount) worked on the programme. To secure the resources it needed, the programme operated its own staffing function, which worked with the wider Bank. The Bank recognised the potential for the programme to impact on other areas of its work, and we heard that at times this had happened. To manage staffing within the Bank's wider project portfolio, the programme regularly reviewed dependencies and engaged with other projects and programmes (paragraphs 2.10 to 2.12 and Figure 10).

16 The programme fostered a transparent culture, with strong leadership and collaborative working between business and technical areas.

The Bank told us that building the right culture was an important enabler for delivery. Our interviews with programme staff highlighted strong positive business leadership, and individuals taking ownership and accountability for the programme. We also saw evidence of actions to encourage an open culture and foster collaborative working between payments and technology staff. For example, the programme had various channels for staff to raise concerns (paragraphs 2.13 and 2.16).

17 The Bank established a successful and collaborative partnering arrangement with its technical delivery partner, Accenture.

The Bank's approach to its partnership model with Accenture addressed common problems we have identified in working with commercial partners. For example, the Bank actively sought to establish a collaborative working relationship, including allowing Accenture to attend senior governance meetings. The procurement process enabled the Bank to sign a largely fixed-price contract with Accenture. This allowed it to avoid unplanned cost increases, although there were a high number of contract changes (47). The Bank established a structured process to manage, negotiate and approve these changes (paragraphs 1.9 and 2.17 to 2.22, and Figure 4).

18 The Bank implemented a new technology structure for the RTGS, supported by assurance and testing processes.

The previous RTGS used mainframe technology that depended on specialist hardware and scarce skills, making it difficult to adapt the system. The Bank believes it is one of the first central banks to build its RTGS using a more flexible and modern 'cloud-native' technology: the system is internally hosted but makes use of cloud-based technologies. Introducing the new technology structure increased the risk to delivery, which the Bank mitigated through, for example, a programme of internal and external assurance and testing, and planning delivery as a series of stages, each capable of operation in its own right (paragraphs 1.7, 1.14 and 2.23 to 2.25).

19 Stakeholders we spoke to were largely positive about how the programme had engaged with industry, although there were more mixed views on the costs of renewal. The Bank used a range of approaches to update and consult the financial sector about the programme. It also engaged with RTGS users to prepare them for the programme's major milestones, through user testing, dress rehearsals and monitoring industry readiness. Overall, stakeholders were positive about the programme's approach to engagement, describing it as open, collaborative and responsive. Stakeholders highlighted some areas for improvement, for example that the Bank should have provided earlier notifications about timeline changes and the impact on users. While some stakeholders told us that they were informed about the new costs and accepted the need to pay more for an improved system, others expressed concerns, for example, about the overall level of costs (paragraphs 1.11 to 1.12 and 2.26 to 2.29).

Future lessons, risks and developments

20 The Bank operates and maintains the new RTGS, which involves a much more dynamic process of change. In contrast to periodic upgrades for the old RTGS three or four times a year, the new RTGS can be upgraded more frequently. The Bank introduced a new operating model, incorporating an increase in resourcing, a more structured change management process, and capacity for continuous improvement. In our interviews, some stakeholders had concerns about managing this higher volume of anticipated change, and the cost and resource implications. While the new system has completed initial routine and upgrade activities without problems, the risks of significant issues cannot be completely eliminated. The Bank has put processes in place to manage technology obsolescence within the RTGS. However, some non-critical RTGS services depend on its wider IT systems, which have some long-standing obsolescence issues (paragraphs 3.2 and 3.4 to 3.8).

21 There are new opportunities to enhance the system, although the Bank must resolve outstanding challenges before it can implement some improvements it has identified as important.

- The Bank published a Future Roadmap in 2023, which identified three priority areas for future enhancements. The Bank is progressing plans to implement extended operating hours. It is also taking steps to test synchronisation (a functionality which allows the movement of funds in the RTGS to be coordinated with the exchange of assets in other systems). A third area is resilient channels, which includes enabling the RTGS to use alternative messaging networks, reducing dependency on the current single provider, Swift. The Bank's initial technical approach to set up an alternative network is no longer feasible, and it is considering alternative approaches.

- To widen access to the RTGS, the Bank has incorporated new technical features in the system alongside other changes, for example policies to establish new types of account. It told us it will be better able to judge the impact of measures to reduce the time taken and costs new users incur to join the system from the second half of 2026. Stakeholders we spoke to raised concerns that there are still potential barriers and disincentives, with some noting the importance of providing an additional network to Swift to support the system's resilience.
- Many of the stakeholders we talked to identified digital currencies as a key development affecting payments. We heard concerns that the Bank must ensure that the RTGS infrastructure is aligned with future policies around digital currencies and trends in their usage. The Bank's position is that the new RTGS can deal with different scenarios for digital currency settlement, although government and the Bank are unlikely to resolve key policy questions until at least 2026 (paragraphs 3.10 to 3.13).

22 The Bank has identified lessons from the renewal programme that it could apply to its wider management of transformation projects. Programme staff have shared lessons and provided support to other Bank projects. Although the programme was unique in terms of size and technical complexity, the Bank could apply elements to other transformation projects to support its ambitions to modernise its ways of working and operations. Lessons include the adaptation of governance and accountability arrangements, culture, and the role of digital specialists in decision-making (paragraphs 3.14 to 3.15).

Conclusion

23 The RTGS is part of CNI, providing a vital foundation to the UK's payment system and contributing to the resilience and stability of the UK economy. The Bank placed a high priority on the RTGS renewal programme combined with a low tolerance for failure, investing up-front effort in careful planning, design and procurement of the system. The Bank successfully launched the new RTGS in April 2025, at a cost of £431 million. Throughout delivery, the Bank managed a high level of risks and interdependencies, including replanning where necessary. The programme demonstrates good practice and innovation, which could be instructive for other digital projects as well as for the Bank's wider project management.

24 The new system secures the benefits anticipated for its launch and moves to a new technology better able to support future innovation. The Bank is progressing some improvements in the next two to three years and is considering priorities over the longer term. The way the Bank managed the RTGS renewal programme demonstrates value for money. The Bank's focus now must be on maintaining and enhancing the system to maximise benefits going forward.

Recommendations

25 To help maximise the benefits from its management of the renewal programme and implementation of the new RTGS, the Bank should:

- a** identify mechanisms for applying lessons from the programme to its other digital and business transformation projects to secure change, for example updating internal guidance or review processes;
- b** set out clear plans for ensuring the right investment and resourcing at the right time to keep the system up to date (including for wider Bank services that the RTGS relies on);
- c** as it manages a more dynamic process of RTGS change, ensure it understands the impact of higher levels of change on all RTGS users, to minimise this where possible; and
- d** assess and, where possible, evaluate the effectiveness of potential interventions in widening access and reducing barriers to entry to the RTGS, including the introduction of alternative access routes to Swift, to ensure it puts the optimum mix in place.

Part One

Programme overview and preparations for delivery

1.1 Part One sets out the background to the Real-Time Gross Settlement system (RTGS), the Bank of England's (the Bank's) approach to system renewal, an overview of the RTGS renewal programme (the programme) and governance, and preparations for delivery of the programme.

Background to the RTGS and UK payment systems

1.2 The Bank operates the RTGS, which provides settlement services for sterling payments in the UK, worth around £790 billion a day. 'Settlement' is the stage of finalising payments by completing the transfer of funds between relevant parties. The RTGS therefore underpins sterling payment systems operating in the UK. This includes CHAPS and the main retail payment systems, such as Bacs, the Faster Payment System, and Visa (**Figure 1** on pages 14 and 15).^{1,2} Government has designated the RTGS as critical national infrastructure (CNI).³

1.3 Financial institutions and payment infrastructure providers access the RTGS in various ways (Figure 1).

- Some banks, building societies and other financial institutions, and operators of major payment systems like Pay.UK and Visa, have direct access to RTGS services.^{4,5}
- There are also indirect users, such as Wise and Monzo, who access RTGS services via another provider carrying out transactions on their behalf.

1.4 The RTGS is vital in ensuring monetary and financial stability, helping to reduce the risk of financial institutions defaulting on payments (settlement risk), while aiming to ensure that users have sufficient funds available to settle transactions (liquidity risk). It also supports other Bank objectives including the delivery of monetary policy and promotion of competition and innovation in payments.

¹ Bacs Payment System is used for direct debits and direct credits, while the Faster Payment System supports real-time payments of up to £1 million.

² CHAPS is the UK's high-value payments system.

³ The government's definition of CNI covers critical elements of infrastructure, whose loss or compromise could significantly impact on the provision of essential services, national security or defence, or the functioning of the state.

⁴ Pay.UK operates the Faster Payment System, Bacs, and the Image Clearing System (cheques).

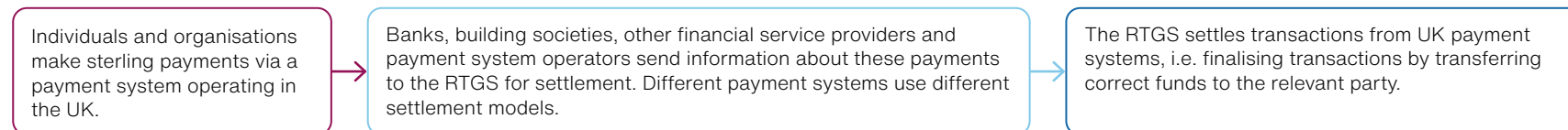
⁵ Institutions can hold RTGS settlement accounts with the Bank. The Bank uses the balances in these accounts to move money in real time between account holders and settle payments.

Figure 1

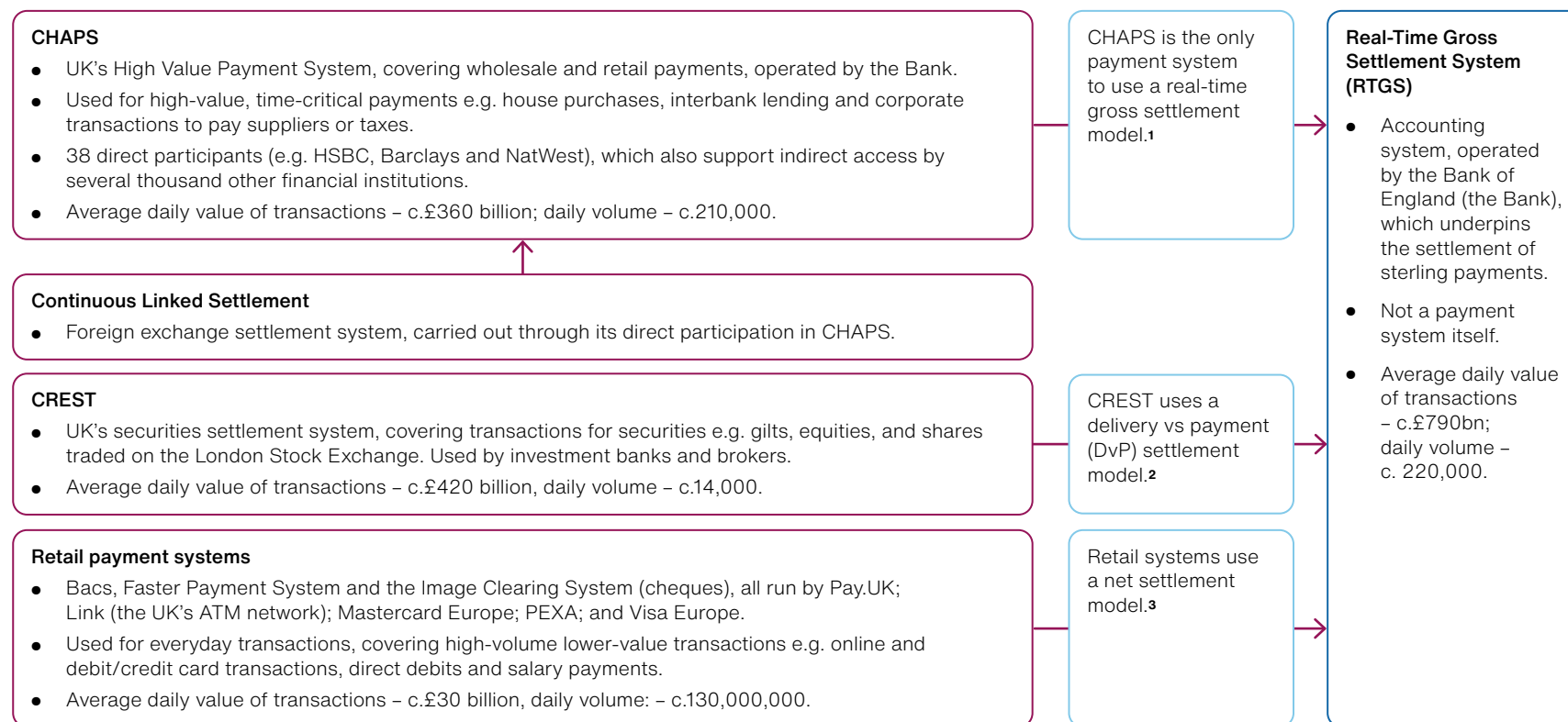
The Real-Time Gross Settlement system (RTGS) and links with UK payment systems

The RTGS provides settlement services for sterling payments in the UK, worth around £790 billion a day, underpinning the UK's sterling payment systems

How individual payments interact with the RTGS



How UK sterling payment systems interact with the RTGS to settle payments



□ Initiation of payment

□ Interaction with the RTGS

□ Settlement in the RTGS

Figure 1 *continued*

The Real-Time Gross Settlement system (RTGS) and links with UK payment systems

Notes

- 1 Under the real-time gross settlement model, payment obligations are settled individually throughout the working day.
- 2 Under the delivery vs payment model, settlement takes place in a series of cycles throughout the day, with funds transferred after each cycle.
- 3 The RTGS supports two variations of net settlement. Under net settlement models, settlement takes place in regular cycles, generally between one to six times a day depending on the payment system. Payment obligations are calculated and applied after each cycle. Although retail payment systems process millions of individual transactions daily, the net settlement process involves a small number of aggregated transactions between settlement participants in each payment system and the RTGS.
- 4 Bacs Payment System is used for direct debits and direct credits, while the Faster Payment System supports real-time payments of up to £1 million. PEXA is a payment system used for property transactions.

Source: National Audit Office summary of Bank of England publications and documents

Overview of the RTGS renewal programme

The case for renewal

1.5 In January 2016, the Bank announced its intention to modernise the RTGS, to respond to changes in payments and new types of payment providers, promote innovation and competition, and enhance system resilience and stability. Previously, in October 2014, the RTGS had suffered its most serious incident since its launch in 1996, with a system outage of around nine hours and consequent delays in completing transactions.

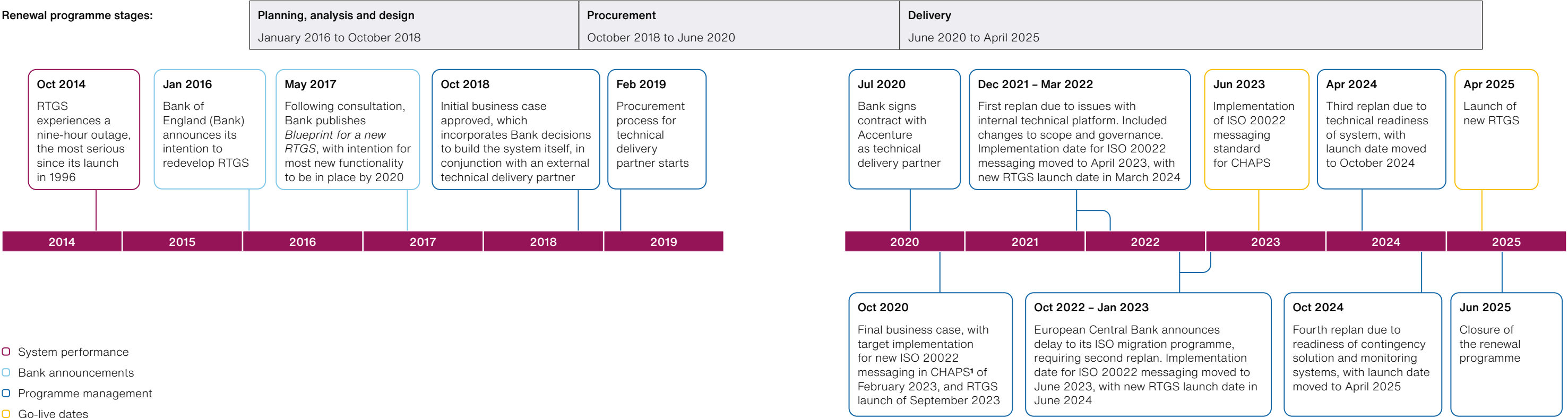
1.6 Following industry consultation, in 2017, the Bank published *A blueprint for a new RTGS service for the United Kingdom* (the Blueprint), which set out its vision for the service and how it would be delivered. The Blueprint outlined five priorities for the new system: higher resilience; broader access; wider interoperability; improved user functionality; and strengthened end-to-end risk management of the high-value payment system (CHAPS).

What the renewal programme has delivered to date

1.7 **Figure 2** on pages 16 and 17 sets out the main phases of the renewal programme, which ran from 2016 to 2025. The Bank successfully implemented the two major programme milestones.

Figure 2
Timeline of the Real-Time Gross Settlement system (RTGS) renewal programme

The renewal programme formally ran from 2016 to 2025, with the new RTGS launched in April 2025



Notes

1 The ISO 20022 messaging standard is an international standard for payment messages that allows the inclusion of more structured and detailed data. CHAPS is the UK's high-value payments system, operated by the Bank. From June 2023, all CHAPS direct participants had to be able to send and receive payment messages using the new standard.

2 Not all key milestones and events are shown.

Source: National Audit Office summary of Bank of England publications and documentation

- In June 2023, the Bank migrated the CHAPS payment system to a new messaging standard to improve interoperability. The ISO 20022 standard is an international standard for payment messages that allows the inclusion of more structured and detailed data. Between 2023 and 2025, several payment systems and central bank settlement systems (including those that the European Central Bank and the US Federal Reserve run) moved to the new standard. The migration to the new standard was an important step in modernising the RTGS as it could improve the ability to interact with other national and international systems.
- In April 2025, the Bank launched the new RTGS, which incorporated the main enhanced features set out in the Blueprint (see paragraph 3.10 for more details). The new RTGS is complex, incorporating multiple components and using an innovative technology structure (**Figure 3** on pages 18 and 19). A high-risk element of the programme was that the old and new systems could not operate simultaneously: the new system had to replace the old one over a launch weekend (a 'big bang' approach).

Figure 3

Components of the new Real-Time Gross Settlement system (RTGS)

The new RTGS is complex, incorporating multiple components and using an innovative technology structure

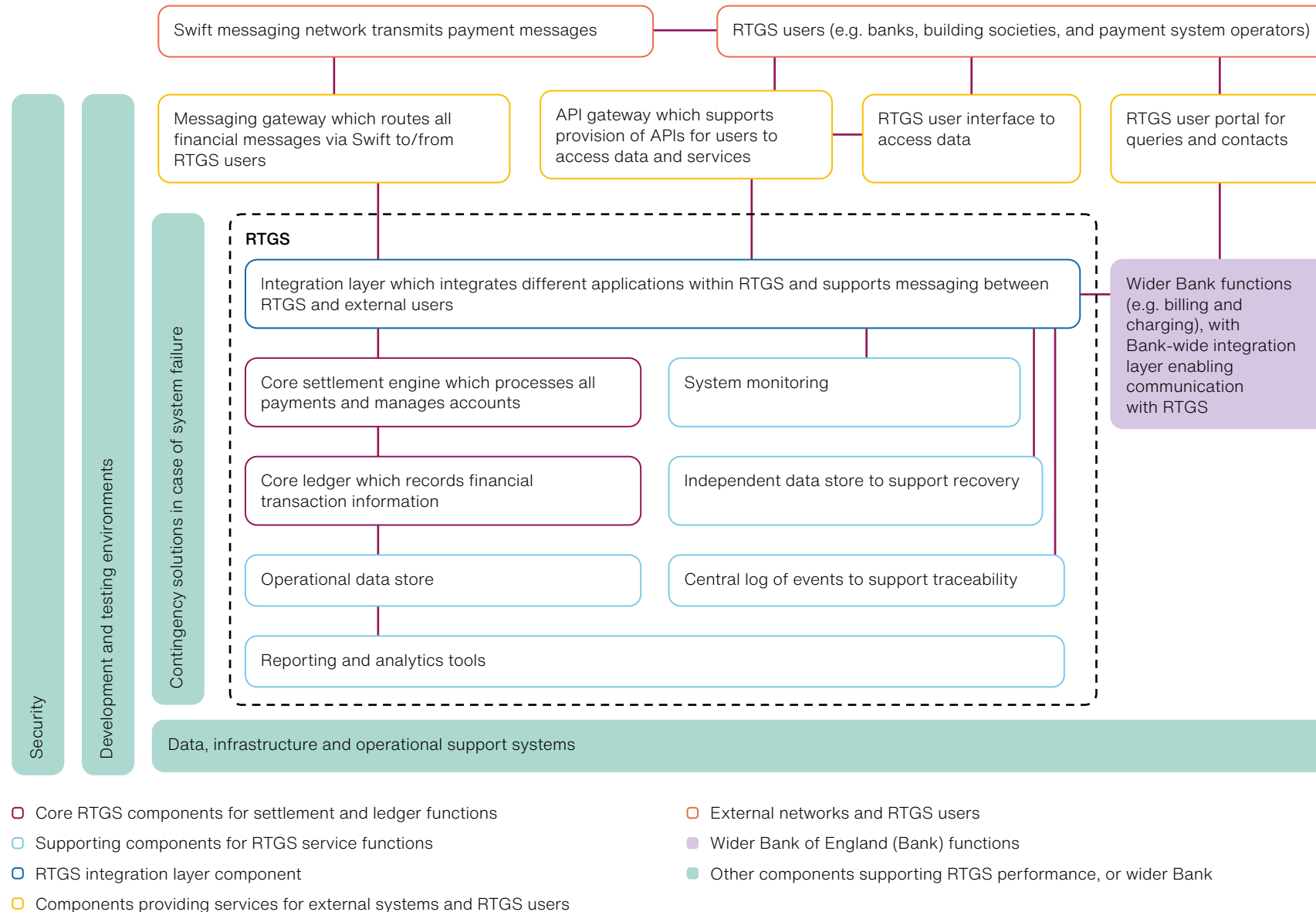


Figure 3 *continued*

Components of the new Real-Time Gross Settlement system (RTGS)

Notes

- 1 Not all components or interactions between components are shown and some are simplified.
- 2 Swift is a global messaging network that financial institutions use to securely exchange payment instructions.
- 3 APIs (Application Programming Interfaces) are a set of commands, functions, protocols and objects that programmers can use to create software or interact with external systems.

Source: National Audit Office summary of Bank of England documentation

1.8 As with all major programmes, there were high levels of uncertainty in the renewal programme, and the Bank had to adapt its approach as issues arose. In the case of RTGS renewal, the Bank had to make major revisions to its plans four times, affecting programme costs, timelines and scope (Figure 2, and paragraphs 2.5 to 2.6 for more details).

1.9 Previous National Audit Office (NAO) work has identified many examples where the public sector has found it difficult to deliver digital programmes.⁶ The Bank's approach to renewal uses good practice elements we have not observed in government's work on large and complex digital change (**Figure 4** overleaf). Positive elements of its approach included its early work to understand requirements for the new system and refine designs with suppliers before signing a contract with the main delivery partner, the quality of the partnership arrangements, and how the Bank fostered an open culture and collaborative working. The Bank's approach is examined in more detail throughout the rest of this report.

Programme funding and cost

1.10 The estimated overall cost of the renewal programme is £431 million, with most spend on third parties, primarily Accenture as the technical delivery partner (**Figure 5** on page 21). Costs did increase over the life of the programme; we set out how and why in Part Two (see paragraph 2.7).

6 See for example: Comptroller and Auditor General, *The challenges in implementing digital change*, Session 2021-22, HC 575, National Audit Office, July 2021; Comptroller and Auditor General, *Digital transformation in government: addressing the barriers to efficiency*, Session 2022-23, HC 1171, National Audit Office, March 2023; Comptroller and Auditor General, *Government's approach to technology suppliers: addressing the challenges*, Session 2024-25, HC 543, National Audit Office, January 2025.

Figure 4

National Audit Office (NAO) assessment of Real-Time Gross Settlement system (RTGS) renewal programme approach against common problem areas for digital transformation in government

The Bank of England's (the Bank's) approach to RTGS renewal effectively managed potential risks and addressed several common problems we have seen in government's digital transformation programmes

Problem areas	RTGS renewal programme approach
Understanding aims, ambitions and risk	<p>The Bank developed a good understanding of business requirements through wide consultation with stakeholders to understand priorities, and an extensive internal process to specify requirements for the new system.</p> <p>Its early engagement with other central banks and critical national infrastructure projects, in conjunction with independent assessments, informed key decisions about its approach. Decisions included building rather than buying a system, working with an external partner, and implementing a new technical approach for the system. This helped address key risks, for example around security, system resilience and internal capability.</p>
Engaging commercial partners	<p>The Bank ensured well-defined system requirements prior to awarding contracts, informed by expert input, through its use of a competitive dialogue procurement approach, including an innovative 'competed design' exercise. Clarity on the commissioned design enabled the Bank to sign a fixed-price contract with its partner (which covered both delivery of core components and integration of all the system components). The contract required a structured change control process, with changes negotiated as required, to plan and manage increases in costs.</p> <p>Programme structures and proactive actions supported a collaborative relationship between the Bank and delivery partner.</p>
Using the right mix of capability	<p>Following an early assessment of limitations in its internal capability and capacity, the Bank actively managed its resourcing using a combination of internal business area and technical specialists, and external expertise. The Bank made extensive use of external assurance, for technical and wider project assurance, alongside its internal risk management and assurance.</p> <p>The Bank adapted programme governance over time, incorporating executive, business area and technical specialists. The final go-live decision was delegated to the senior owner and technical director, who had detailed knowledge of programme readiness.</p> <p>There were active steps to support positive leadership, an open 'no surprises' culture, and collaborative working between business area (payments) and technical staff, including early engagement in the programme.</p>
Management of delivery	<p>The programme required four major replans due to a combination of internal and external factors. The Bank was able to use each replan to address issues and strengthen its focus on delivering the main objectives.</p> <p>Delivery was organised in staged 'transition states', with each state providing new functionality but capable of stand-alone operation, to help manage increased risk from introducing a new technology structure.</p>
Effective funding mechanisms	<p>Budget and timelines were re-estimated at each replan, with scrutiny and approval for planned increases in costs and timelines. Contingency budgets reduced over time, as risks and uncertainties lessened.</p>

Note

- 1 Problem areas are based on National Audit Office's report *The challenges in implementing digital change*. The figure excludes the approach to legacy systems and data, as the decommissioning process was relatively straightforward given the nature of the project (see Part Two – Decommissioning of the old system).

Source: National Audit Office assessment

Figure 5**Costs of the Real-Time Gross Settlement system (RTGS) renewal programme**

The estimated overall cost of the renewal programme is £431 million, with the majority of spend on external third parties

Category	Forecasted costs (£mn)
Capital costs	84
External costs, of which:	276
● Accenture core contract	143
● Accenture additional works requested under the contract	12
● Specialist technology support (e.g. technical expertise for installation or configuration of hardware/software)	46
● Specialist non-technology support (e.g. project management)	45
● External assurance	4
● Software (including, for example, licences)	20
● Other	7
Staff costs, of which:	63
● Bank of England staff	48
● Contractors	15
Post-launch changes	8
Total costs	431

Notes

- 1 Costs shown are forecasted by the Bank of England, as of 30 April 2025. Costs are unaudited and based on management information. Figures may not sum to totals or sub-totals because of rounding.
- 2 Other costs include, for example, legal, property, training and recruitment costs.
- 3 External costs include VAT, where appropriate.
- 4 Post-launch changes include some Accenture costs to develop and test a number of high-priority changes to the new RTGS, which were not included in the April 2025 launch.

Source: National Audit Office analysis of Bank of England information

1.11 The RTGS is funded by its (direct and indirect) users. The Bank recovers operating costs through an annual tariff, combining set charges and activity-based fees. Following consultations in 2022 and 2023, the Bank announced it would recover the renewal costs over a 20-year period, launching a new tariff in 2025. There are also higher annual operating and maintenance costs for the new system (around £41 million compared with £21 million previously). Users will have to separately cover the costs of any future enhancements to the RTGS, for example, extending operating hours. The new tariff generally increased costs: for example, the usage fee per CHAPS payment increased from 31.9p in 2023-24 to 42.7p in 2025. It also brought more variation into annual fees to reflect users' activity levels: for example, the annual CHAPS fee is now calculated based on a participant's share of the total value of CHAPS transactions, having previously been a flat-rate charge of £30,000.

1.12 In our interviews, some stakeholders said they were informed of the new costs and accepted the need to pay more for an improved system. However, some expressed concerns, including stakeholders who felt they should have been told of cost increases earlier, had concerns about the level of costs, or noted that costs for future enhancements were still unknown.

Determining the Bank's approach to renewal

1.13 Reflecting the system's designation as CNI, the Bank set a high organisational priority and 'negligible' risk tolerance (its lowest possible) for delivery of the programme. Important considerations included:

- security risks, a high priority throughout the programme;
- the need to develop a high-quality and resilient technical solution;
- ensuring value-for-money, particularly as RTGS users cover the costs of renewal; and
- the need for the Bank to retain control over the renewal process and new system.

1.14 During 2017 and 2018, the Bank made several key decisions about its approach to the programme, including the following.

- **The RTGS required a new technical solution.** An external technical evaluation found that the existing mainframe technology could not incorporate required system improvements without significantly increasing operational and security risks.⁷ It also assessed that the costs of upgrading the old structure outweighed the potential benefits.

⁷ Mainframes are high-performance computers used for large-scale computing purposes that are capable of supporting many thousands of simultaneous users. They are commonly used in the financial services industry, for processing transactions and account management.

- **The Bank would build rather than buy an RTGS and would appoint an external partner.** It assessed various options.
 - Although off-the-shelf products were available, the Bank found that these introduced significant security risks compared with building the system. Early consultation indicated that comparable central banks had chosen to build their own systems.
 - The Bank concluded that a partnership model, in which it worked closely with an external technical partner on design and delivery, was the only appropriate model. This gave the Bank the required control over the RTGS and access to external expertise, as it did not have sufficient internal capability or capacity to deliver the technical solution needed by itself.
 - Consultation with other CNI operators identified that it was feasible to run a competitive procurement procedure under Public Contract Regulations for the RTGS.
- **The Bank would maintain and operate the new system following renewal,** including future enhancements to the RTGS. This made knowledge transfer an important element of working with the external partner.

1.15 During the planning phase, the Bank ran an extensive internal process with payment system, technical and procurement specialists to draw up an overview of a new system, including the types of services it needed to deliver, key assumptions and decisions required, and a possible future operating model.

1.16 In our view, the Bank's approach during the early stages of the programme meant it built up a good understanding of the programme's overall aims and risks, and more detailed business and technical requirements for the system. This allowed it to successfully mitigate potential issues, that we have seen cause problems in government digital change projects.⁸

Procurement of the external partner

1.17 The Bank assessed that the complexity and sensitivity of the system meant that awarding a contract without prior negotiation would be high risk. To mitigate this risk and in line with sector good practice,⁹ it chose a 'competitive dialogue' process which allowed potential bidders to develop their tenders in consultation with the Bank. Prior to procurement, the Bank undertook market engagement, which established that there were sufficient providers to ensure a competitive process (**Figure 6** overleaf).

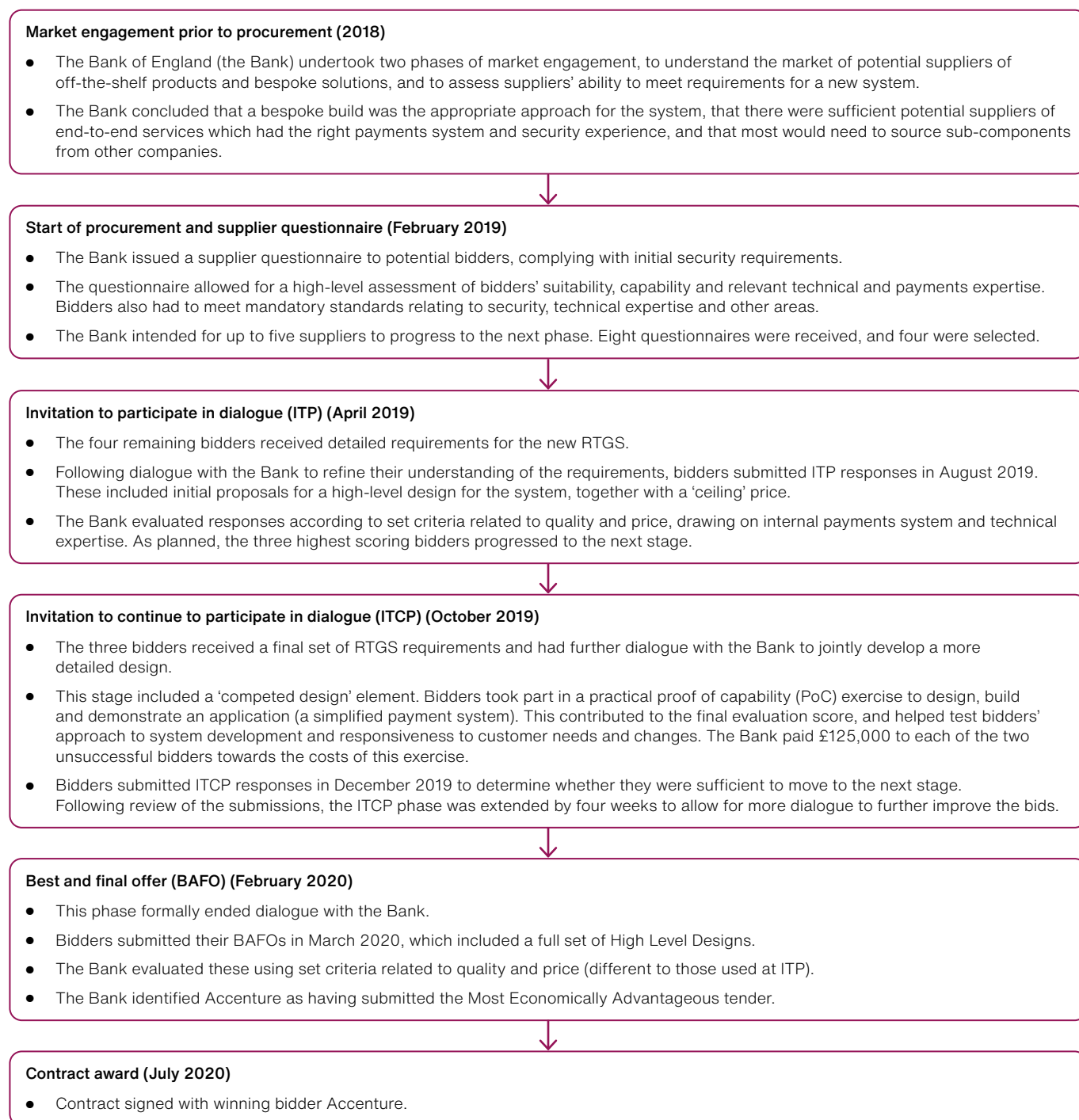
⁸ Comptroller and Auditor General, *The challenges in implementing digital change*, Session 2021-22, HC 575, National Audit Office, July 2021.

⁹ Available at Gartner.com, accessed October 2025.

Figure 6

Procurement process for the Real-Time Gross Settlement system (RTGS) renewal programme

The Bank selected three bidders to refine and produce final designs, including an innovative 'competed design' exercise



Source: National Audit Office summary of Bank of England documentation

1.18 The 'competitive dialogue' process took 17 months (compared with an original plan of 12 months). There were two main stages of dialogue, with three bidders selected to refine and produce final designs to meet the Bank's specifications (Figure 6). The Bank included an innovative 'competed design' element, in which bidders designed and built a simplified payment system, to test their technical approach and responsiveness to customer needs. It paid £125,000 to each of the two unsuccessful bidders towards the costs of this exercise.

1.19 The Bank signed a contract with the winning bidder, Accenture, in July 2020. The contract covered:

- design, build and testing of the core settlement engine and core ledger, both central components of the RTGS (Figure 6);¹⁰ and
- oversight and implementation of end-to-end systems integration, that is, ensuring that the core engine worked as intended with the many other components of the RTGS.

1.20 The Bank's procurement approach effectively addressed common issues that the NAO has found in government's working with technology suppliers.¹¹ For example, there was early evaluation by the Bank's technical and business area specialists, and the Bank refined the system design with suppliers prior to awarding contracts. According to Bank documentation, the final design had little variation from the one commissioned at the start of the contract, which supported its choice of approach. The Bank owns the intellectual property for the final RTGS design. It told us it was also able to apply lessons from the dialogue process to shape the final design, allowing it to make use of a wider range of expertise.

Governance, accountability and decision-making

1.21 In the initial planning and design stages, programme oversight was provided through the Bank's standard governance, and decisions made by the Governors Committee or the Bank's board of directors (known as the 'Court'). As the programme moved into delivery, in October 2018, the Bank adapted these arrangements, establishing the RTGS Renewal Committee (RRC), a sub-committee of the Court, to provide strategic oversight.¹²

¹⁰ The core settlement engine processes payments and manages RTGS accounts. The core ledger keeps a record of financial transaction information.

¹¹ Comptroller and Auditor General, *Government's approach to technology suppliers: addressing the challenges*, Session 2024-25, HC 543, National Audit Office, January 2025.

¹² The RRC reported to the Court, working in conjunction with the existing RTGS/CHAPS Board. The RTGS/CHAPS Board is a committee of the Bank with delegated authority from the Governor for strategic decisions for the management and operation of the RTGS and CHAPS. At the time that the RRC was established, it had joint responsibility with the RTGS / CHAPS Board for the go-live decision to launch the new RTGS.

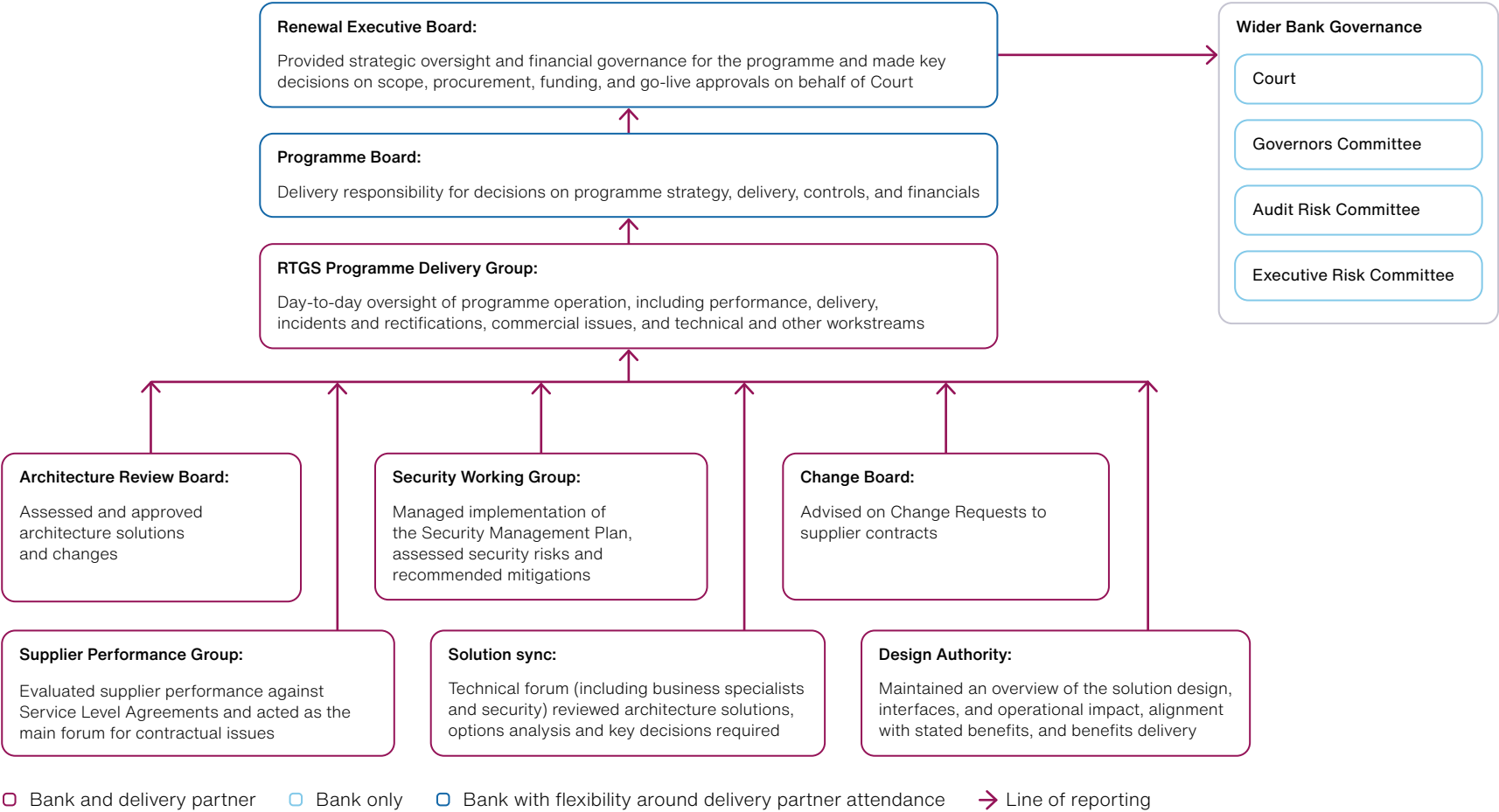
1.22 In the programme's first major replan in winter 2021-22, the Bank took the opportunity to refine programme governance to address some identified issues, for example unclear accountability and decision-making powers. It replaced the RRC with the Renewal Executive Board (REB) (**Figure 7**). The REB had greater executive decision-making authority around programme scope, funding, procurement and go-live decisions. Both the RRC and REB included representation from business area (payments), technology and central services.

1.23 The REB provided overall approval for the major go-live decisions, using set readiness criteria (for example, completion of critical activities like test phases) which were subject to independent assurance. The REB delegated the final go-live decision to the programme's senior owner and technical director, ensuring it was made by those with detailed knowledge of the programme's operational and technical readiness.

Figure 7

Real-Time Gross Settlement system (RTGS) renewal programme governance, 2022 to 2025

In winter 2021-22, the Bank of England (the Bank) made changes to programme governance, establishing the Renewal Executive Board, which had greater executive decision-making authority



Notes

- 1 The Renewal Executive Board (REB) replaced the RTGS Renewal Committee (RRC) in June 2022.
- 2 The REB worked closely with other relevant governance in the Bank. This includes the RTGS CHAPS Board, which advised on industry engagement and readiness and the RTGS CHAPS Risk Committee, which monitored and provided assurance on programme delivery risks. CHAPS is the UK's high-value payments system, operated by the Bank.
- 3 The Court is the Bank's Board of Directors.

Source: National Audit Office analysis of Bank of England documents

Part Two

Programme management and delivery

2.1 Part Two covers management and delivery of the Real-Time Gross Settlement system (RTGS) renewal programme (the programme). It includes the main replans to the programme, and how the Bank of England (the Bank) managed different programme risks and issues, including costs, staffing, stakeholder engagement and technology implementation.

Approach to risk management and assurance

2.2 The Bank developed a strong risk management framework for the programme, aligned to its wider framework. In line with good practice, the programme operated under the 'three lines of defence' model, which comprised a range of internal assurance.¹³

- The programme provided the first line of defence. Its Programme Management Office (PMO) managed programme risks and issues, working with the Payments Risk Team. It reported regularly to the programme's senior governance boards and quarterly to the RTGS/CHAPS Risk Committee. There were owners of assurance for designated areas, such as technical partner delivery, readiness for launch dates, the technical solution and industry readiness. To ensure that the programme was ready for major launch dates, there was enhanced risk reporting, with a risk attestation process to review all open risks and issues.
- The Bank's wider risk directorate (second line) provided independent oversight, challenge and reporting. It worked with programme staff across various activities. This included assurance of go-live readiness by reviewing critical readiness criteria and horizon-scanning exercises to identify external risks.
- The Bank's internal audit function (third line) had dedicated resources for providing assurance on the programme, and was represented on the Renewal Executive Board (REB) and other programme governance. It reported findings directly to the Bank's Audit and Risk Committee.

¹³ Government Finance Function and HM Treasury, *The Orange Book: Management of Risk – Principles and Concepts*, 2023.

2.3 In addition, the Bank commissioned external assurance and reviews from third-party experts on project management and technical aspects of the programme.¹⁴

Managing dependencies

2.4 Key dependencies were initially identified during planning and procurement, with the Bank's approach to managing dependencies developing throughout the programme in response to internal and external reviews. During the delivery phase, dependencies were discussed and managed through weekly programme delivery group meetings, with PMO maintaining a central tracker. In response to an external review in 2021, and as part of the first replan of the programme, the Bank put in place structured monitoring and reporting of dependencies to the REB to improve management of dependencies with other Bank projects.

Programme replans

2.5 The programme required four major replans during delivery, due to a combination of internal and external factors (**Figure 8** overleaf). Broadly, the last three replans arose from issues that the Bank had identified and was monitoring as potential risks; by contrast, the main issue that led to the first replan was more unexpected. Each replan received scrutiny and approval from the Court and relevant governance bodies for associated increases to the programme's costs and delays in delivery.

- In our view, the first replan (winter 2021-22) was the most significant one for the Bank. The main trigger was the need for the programme to shift the technology platform from one being developed for the wider Bank to one specially designed for the programme. Although dependency on wider Bank technology was identified as a key risk, when it materialised it required a major unforeseen change for the programme. During the replan, the Bank took the opportunity to address several other risks to delivery which had been identified in an external review, for example the timetable for testing. There was a full reset of the programme with changes to the scope (the removal of a final planned stage of enhancements) and governance (see paragraph 1.22), and a significant review of the programme's cost profile to ensure the programme could be managed within its budget.¹⁵

¹⁴ All references to external reviews in Part Two are to Bank-commissioned reviews from independent third-party experts.

¹⁵ As at 2020, the scope of future enhancements was still to be confirmed. Potential outcomes included the delivery of alternative messaging networks (in addition to Swift) for the RTGS and an improved contingency solution, and enablement of several future enhancements noted in *A blueprint for a new RTGS service for the United Kingdom*, published by the Bank in 2017 (see paragraph 3.10 for more details). These future enhancements included, for example, allowing synchronisation operators to connect to the RTGS, extended operating hours, and additional liquidity management.

Figure 8

Replans of the Real-Time Gross Settlement system (RTGS) renewal programme

The programme required four major replans during delivery, resulting from a combination of both internal and external factors

Date	First replan (December 2021 – March 2022)	Second replan (November 2022 – January 2023)	Third replan (April 2024)	Fourth replan (October 2024)
Cause	Issues with the technology platform planned for the new system were first identified in November 2021. The programme had to shift from using one platform being developed for the wider Bank of England (the Bank) to build a new platform specifically for the programme.	Unexpected delays in European Central Bank's ISO 20022 messaging migration and subsequent delays to other industry migration programmes worldwide. This led to a clash with the renewal programme's proposed migration date, resulting in too high a level of change for RTGS users to manage easily.	High number of technical defects in the new system identified in testing, leading to high risks associated with user readiness. This required more time to test and resolve.	Technical issues with the ability of the system's recovery solution to deal with all scenarios, and the responsiveness of the internal monitoring system. These had been identified as potential uncertainties and risks during the third replan, and materialised during 2024, requiring more time to test and resolve.
Overall delivery risk rating	'Amber' before issues were identified and not re-assessed while the programme went through the replan. In March 2022, assessed as 'red', moving to 'amber' by June 2022.	Remained 'amber' throughout the replan.	Moved from 'amber' to 'red' in January 2024 when issues arose, moving back to 'amber' in May 2024, after the replan was approved.	Moved from 'amber' to 'red' in September 2024 when issues arose; moved to 'green' in November 2024.
Impact	Full programme reset with an updated timeline and budget, changes in governance (Renewal Executive Board replaced RTGS Renewal Committee), re-evaluation of the programme's risks and dependencies, and a planned final stage of enhancements removed from scope. ISO 20022 migration delayed from February 2023 to April 2023 (launch of new system delayed from September 2023 to Spring 2024), and approved budget increased from £375 million to £394.6 million.	ISO 20022 migration delayed to June 2023 (launch of new system to June 2024) and approved budget increased to £417.2 million.	Launch of new system delayed to October 2024 and approved budget increased to £434.4 million.	Launch of new system delayed to April 2025 and approved budget increased to £440.4 million.

Notes

1 Budget figures include contingency.

2 The ISO 20022 messaging standard is an international standard that facilitates the sending of enhanced payments data.

Source: National Audit Office analysis and summary of Bank of England Real-Time Gross Settlement system renewal programme documentation

- The second replan (winter 2022-23) was caused by factors outside the control of the Bank. The European Central Bank (ECB) moved its migration date to the ISO 20022 messaging standard, so that it was four weeks before the programme's planned migration date. Consultation with RTGS users found that having the two migrations so close to each other resulted in too high a level of change for users to manage safely. The Bank therefore decided to defer its migration date and launch date for the new system. The 2020 business case highlighted the possibility of such an external 'shock' occurring, and that it would require additional funding.
- The third and fourth replans (spring and autumn 2024) were related to internal technical issues with the new system, which required more time to test and resolve, affecting overall delivery risk ratings from early 2024. The third replan resulted from a high number of technical defects, delaying testing and affecting the launch, some of which continued to cause issues after the replan. The fourth replan was related to issues around the performance of the recovery solution (in case of system failure) and the internal monitoring system.

2.6 The cumulative impact of the replans on the timeline was to delay implementation of the new messaging standard by around four months, and the launch of the new system by around 18 months. In total, the programme took around nine years, from initial consultations in 2016 to its launch in 2025. Although it is difficult to directly compare with other central bank programmes, the European Central Bank's RTGS replacement and migration to the new messaging standard took around seven years, while the US Federal Reserve transitioned to the new standard in July 2025, around seven years after initial consultations. The renewal programme delay is at the lower end of the range of delays we have observed in our work on government digital change programmes of between one and eight years (with some programmes very limited in what they actually delivered).¹⁶

¹⁶ Comptroller and Auditor General, *The challenges in implementing digital change*, Session 2021-22, HC 575, National Audit Office, July 2021; Comptroller and Auditor General, *Government's Approach to technology suppliers: addressing the challenges*, Session 2024-25, HC 543, National Audit Office, January 2025.

Managing costs and benefits

Cost management

2.7 The estimated final cost of the programme is £431 million (paragraph 1.10), which is 15% higher than the £375 million budget approved as part of the programme's final business case in 2020 (**Figure 9**).^{17, 18} While the programme cost more than initially estimated, in our view, the increase was reasonable given the programme's size and complexity; the number of uncertainties and risks that the Bank had to manage, including around elements of technical innovation; and the Bank's approach to managing costs.

- The final business case budget of £375 million included contingency of £40 million (11% of the budget) which was under the 15% to 25% industry standard for projects of this size. The contingency covered estimated cost increases associated with identified risks (resourcing; dependencies on other Bank projects; and additional system requirements). In our view, the Bank could have considered retaining a cost range at this stage or estimating a higher contingency to factor in 'unknown' risks, to better reflect the level of uncertainty.¹⁹
- The business case set out that external 'shocks' (for example, a clash with other major industry change programmes) would require additional funding. It estimated possible costs of up to £50 million, which were not included in the approved budget. The second programme replan was caused by this kind of event (see paragraph 2.5). The Bank estimated this delay cost an additional £22.6 million (Figure 9).
- Budget increases reflected the four replans, with the programme operating within approved costs between replans. The approval of the replan budgets included explicit considerations of value for money (VfM) and identifying potential savings within the programme. As part of its ongoing contract management, the Bank identified some contract refunds and also negotiated with Accenture to cover part of the increase in costs for the fourth replan.
- As the Bank gained certainty around identified risks, it reduced the level of contingency (Figure 9). Contingency (as a proportion of the approved budget) was 11% (£40 million) in 2020, falling to 6% (£25 million) in 2022, and less than 1% (£1.5 million) by the end of 2024. The final cost was within the estimated budget from the time of the third replan.

¹⁷ We take the 2020 final business case budget as the baseline for comparison (rather than earlier budgets), as this reflected refinement of the technical design through the procurement process, appointment of Accenture as the technical delivery partner, and confirmation of the contract specifications and amount.

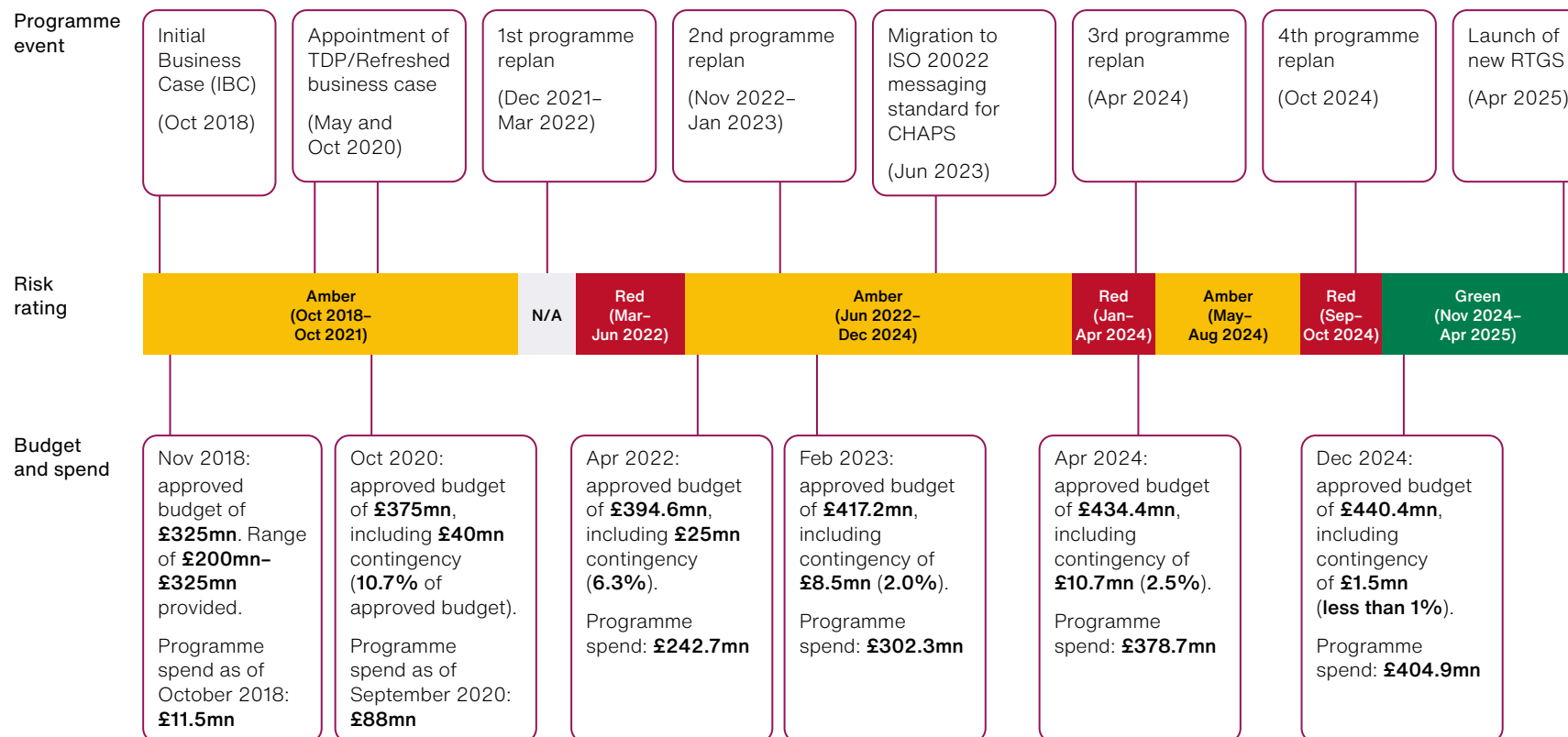
¹⁸ The first replan resulted in a reduction of scope, removing an estimated £25 million of funding for future enhancements to the new system. Taking this into account suggests an overspend of around 23%, compared with 2020 estimates.

¹⁹ Infrastructure Project Authority, *Cost Estimating Guidance, A best practice approach for infrastructure project and programmes*, 2021.

Figure 9

Budget and spend for the Real-Time Gross Settlement system (RTGS) renewal programme, 2018 to 2025

The Bank of England (the Bank) undertook four major replans, which accounted for the increase in programme costs

**Notes**

- The risk ratings presented in the figure are the programme's RAG ('red', 'amber', 'green') ratings. These were assessed quarterly for the RTGS Renewal Committee from October 2018 to March 2022 and for each Renewal Executive Board meeting from June 2022 until the end of the programme.
- The programme's risk status was not assessed between October 2021 and March 2022 while the programme went through the first replan. It was reported as 'red' on 28 March 2022 pending the Court's approval of the replan. The programme's risk status was then assessed as 'amber' in June 2022 by the Renewal Executive Board following the approval of the replan.
- Dates in the Budget and spend boxes refer to the date that the Bank's board of directors (known as the Court) approved the programme budget, with the exception of the first box, where programme spend is provided as of October 2018.
- The ISO 20022 messaging standard is an international standard that facilitates the sending of enhanced payments data. CHAPS is the UK's high-value payments system, operated by the Bank of England.
- Costs are unaudited and based on management information.

Source: National Audit Office analysis of Bank of England documents

Value-for-money (VfM) approach and managing benefits

2.8 The programme's VfM approach aimed to support cost management and benefits realisation. The programme monitored several key performance indicators related to VfM over the course of delivery. Examples included:

- the proportion of internal programme staff who were permanent, which had no significant variations until it decreased from the third quarter of 2024 as the programme approached its end date;²⁰ and
- the ratio of forecast against the approved budget, which remained within the approved budget by the Court in line with each budget reset.

2.9 The programme incorporated a benefits realisation framework, with trackable benefit measures, refining these in response to internal and external reviews. Examples of measures included providing stakeholders with richer payments data that could improve analysis and reconciliation by the Bank and users; more efficient RTGS operational processes; and maintaining the highest possible level of resilience required by critical national infrastructure (CNI). By the end of the programme, the Bank assessed that 10 of the benefit measures had achieved their target and the remaining 25 were mostly on-track to be realised (against a planned end date of December 2028). Outstanding benefits were transferred to relevant business-as-usual (BAU) teams for delivery.

Managing staffing

2.10 The programme used a planned mix of Bank and external staff, reflecting the need to make use of internal RTGS payments and technical expertise, as well as external capability (**Figure 10** on pages 35 and 36).

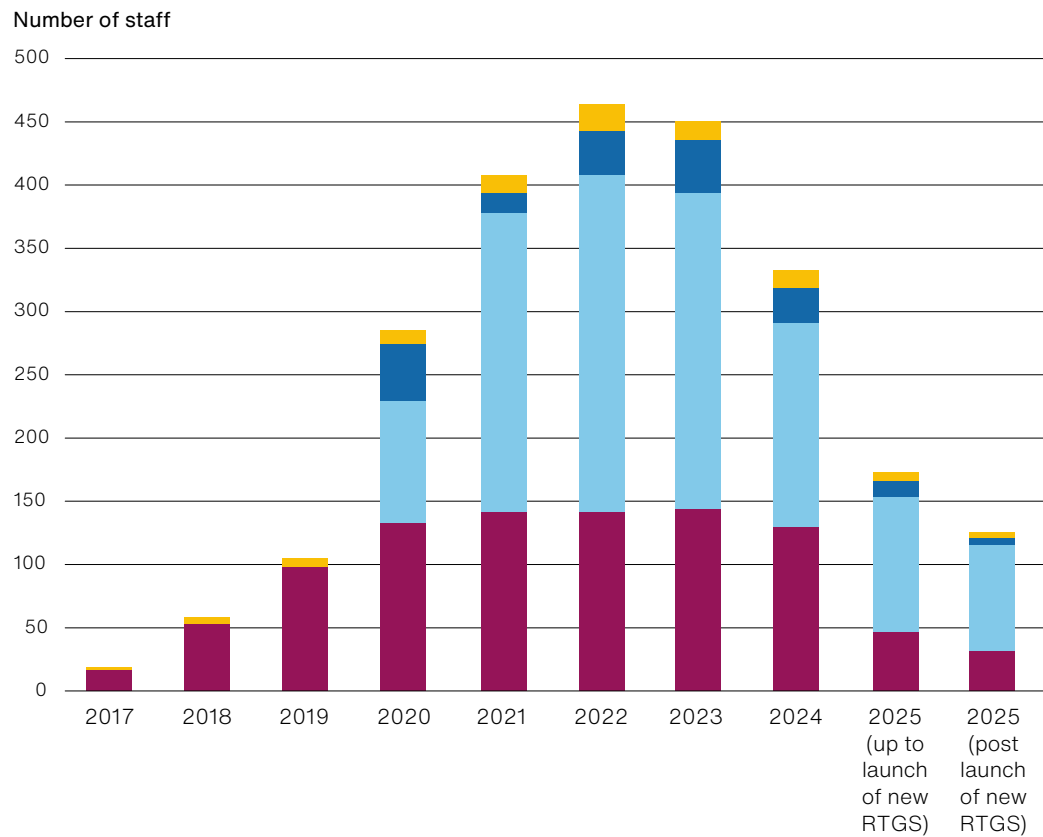
- Bank staff (permanent and fixed term contract) were primarily responsible for the programme during initial planning and design, with a core retained for delivery.
- The technical delivery partner Accenture provided the majority of programme staff during the delivery phase. For example, in 2022 there were 266 Accenture staff compared with 142 Bank staff. PA Consulting also provided specialists (including 45 staff in 2020 and 42 staff in 2023) to support various programme activities such as specifying system requirements and design.
- Programme staffing peaked in 2022 and 2023 with over 450 staff (headcount) preparing for the implementation of the new messaging standard alongside development of the new RTGS. Staffing subsequently reduced, with a shift from permanent staff to shorter-term resourcing.

²⁰ This metric was used to ensure the programme was minimising resourcing costs.

Figure 10

Real-Time Gross Settlement system (RTGS) renewal programme staffing, 2017 to 2025

Programme staffing peaked in 2022 and 2023, with development and implementation of the new messaging standard, alongside creation and testing of the new RTGS



Renewal programme stages:	Planning, analysis and design		Procurement		Delivery				Post-delivery	
	January 2016 to October 2018		October 2018 to June 2020		June 2020 to April 2025				April 2025 to July 2025	
Bank of England staff	17	53	98	133	142	142	144	130	47	32
Accenture	0	0	0	96	236	266	250	161	107	84
PA Consulting	0	0	0	45	16	35	42	28	12	5
Contractors	2	5	7	11	14	21	15	14	7	4
Total	19	58	105	285	408	464	451	333	173	125

Figure 10 *continued*

Real-Time Gross Settlement system (RTGS) renewal programme staffing, 2017 to 2025

Notes

- 1 Programme staffing (average headcount) figures are unaudited and estimated, based on management information.
- 2 The figure excludes staff with a minimal number of hours per week and smaller third-party providers.
- 3 Accenture staffing figures for 2020 have been calculated as a partial average from July to December 2020, since Accenture joined the programme in July 2020.
- 4 Delivery phase activities covered testing and development of the new ISO 20022 messaging standard for CHAPS; and creation, testing and launch of the new RTGS. The ISO 20022 messaging standard is an international standard that facilitates the sending of enhanced payments data. CHAPS is the UK's high-value payments system, operated by the Bank of England.
- 5 2025 is split into two phases: January to April (up to the launch of the new RTGS), and May to July. May to July 2025 figures include Bank staff involved in programme closure activities and Accenture staff supporting 'hypercare' (three-month period of enhanced monitoring and support following launch of the new system) and post-launch system changes. The figure excludes Accenture staff providing services after July 2025 under the renewal programme contract.

Source: National Audit Office analysis of Bank of England and Accenture data

2.11 Resourcing was a major and changing risk that the Bank actively managed throughout the programme. For example, there were early challenges to fill new roles needed for the programme, and repeated issues around securing internal business specialists. The programme operated its own small staffing function, which worked with the wider Bank, for example on external recruitment campaigns. For the transition to BAU, the Bank sought to manage the risk of programme staff (and skills) leaving the organisation by expanding support for staff transfers through, for example, temporary placements and guaranteed first interviews for other roles in the Bank.

2.12 The Bank set a high priority for the renewal programme, recognising the potential for it to affect other areas of the Bank. In some staff interviews, we heard that at times the programme's need for staff impacted on, for example, other Bank technology or change projects. To manage staffing within the Bank's wider project portfolio, the programme regularly managed dependencies and engaged with other projects and programmes, including technical delivery teams. The Bank also responded to the demand for RTGS operations staff to work on the programme, by providing additional funding to expand the BAU team.

Leadership, culture and ways of working

2.13 The Bank told us that building the right culture was an important enabler for programme delivery. As part of the first replan, the Bank decided to free up some of the senior owner's time to ensure they had sufficient capacity to prioritise the programme. Our interviews with programme staff highlighted a positive leadership and culture, with strong business leadership, and individuals taking ownership and accountability for the programme. We heard that the RTGS Renewal Committee (RRC) and REB were supportive and willing to act on specialist advice when major replans were required.

2.14 The Bank told us it actively considered staff wellbeing. For example, the programme introduced pulse surveys in 2022 with questions about culture and wellbeing, and used wellbeing forums to support staff.

2.15 To encourage a 'no surprises' culture and support open communication, staff were encouraged to raise concerns and escalate issues when needed through a variety of channels, consistent with National Audit Office good practice.²¹ Initiatives included:

- a behaviour manifesto, setting out expectations;
- setting up a transparency channel, through which staff could anonymously share feedback or concerns, which was owned by two heads of division who were a step removed from the core programme; and
- various staff groups and events that provided opportunities to raise issues, including weekly programme director drop-ins, a managers' forum, and all-staff 'townhall' events.

2.16 To support collaborative working between payments and technical specialists, the Bank created joint teams with operational, policy and technical staff. The programme had lead service owners from both the business and technology side, who worked together to engage and align with the wider Bank and ensure that the programme met both business and technical needs. An external review in 2021 found that business and technical operations teams were working well together. Our interviews with programme staff confirmed this, noting the early and sustained involvement of specialists in the programme.

²¹ Comptroller and Auditor General, *Good practice guide: Whistleblowing in the civil service*, National Audit Office, February 2024.

Managing the technical delivery partnership model

2.17 Our previous work has identified three key lessons for government when engaging commercial partners around: exploring requirements at an early stage; adopting a flexible contracting process; and establishing a collaborative partnership.²² The Bank's approach to its partnership model with Accenture was able to address these, as set out in paragraph 1.9 and below.

Contracting arrangements

2.18 The Bank's fixed design and choice of procurement process enabled it to sign a contract with Accenture, the bulk of which was for a fixed price and timescale.²³ The contract specified roles, responsibilities and deliverables for each party, and key dependencies.

2.19 Any change to the contract required the Bank and Accenture to negotiate and agree a formal contract change notice. The programme had a structured process to manage change. A Change Board reviewed all requests and could approve non-material changes, with escalation to the Programme Board, the REB/RRC, governors and the Court as appropriate.²⁴ Senior Bank staff handled larger contract negotiations, to minimise any impact on programme working relations.

2.20 The Bank told us that the contract was effective in avoiding unplanned cost increases. There were a high number (47) of contract change notices, equivalent to a net increase of £45 million including VAT (47% of the original fixed price).²⁵ We heard from interviews with Accenture that the process required for each adjustment could be time-consuming. The Bank sought to manage the impact of making contract changes by processing smaller requests together. Of the 47 change notices, it assessed that 25 were low impact in terms of administrative effort, 14 medium and eight high.

Encouraging collaborative working

2.21 The Bank recognised that maintaining a partnering relationship with Accenture was critical for the success of the programme. The Bank built this relationship in a number of ways.

- The contract included a 'Joint Charter on Cooperative Behaviour', outlining ways of working between the Bank and Accenture.
- For key programme roles, there were representatives from both the Bank and Accenture. For example, the Bank's Technical Delivery owner was accountable for the delivery of the technical components of the solution and for the fulfilment of technical assurance activities working with Accenture's technical and delivery director.

²² Comptroller and Auditor General, *The challenges in implementing digital change*, Session 2021-22, HC 575, National Audit Office, July 2021.

²³ In addition to the core responsibilities, the contract allowed for the Bank to request additional services.

²⁴ The Change Board included the programme director, and technology, business and Accenture representatives

²⁵ This was equivalent to £38 million excluding VAT. The net increase included negotiated refunds of around £0.4 million.

- To include it in decision-making, Accenture was formally represented in governance up to the Programme Board, and also able to attend REB meetings. In its experience, it was unusual for suppliers to be involved in meetings at this level.
- Our interviews with programme staff also noted the importance of ensuring the right culture was in place, with initiatives to foster an open culture and collaboration (as set out in paragraph 2.15) covering Accenture and Bank staff.
- An internal lessons learned review in 2023 highlighted the importance of early assessment of supplier capabilities and designing technical assurance around their delivery, and aligning Bank and supplier delivery responsibilities with their respective strengths.

2.22 An external review of the programme in 2021 found that Accenture was working effectively and collaboratively. Interviews with Bank and Accenture staff confirmed the development of a constructive and close working relationship, with commitment on both sides to the partnership approach.

Managing technology implementation

2.23 As set out in paragraph 1.14, the Bank made an early decision to move to a more modern technology approach for the new system. In common with many UK banking and payment systems, the previous RTGS used mainframe technology.²⁶ The Bank told us that, while the technology was reliable, it was dependent on specialist hardware and increasingly scarce skills to support mainframe technologies, therefore making it difficult to adapt the system.

2.24 The Bank used the opportunity of the renewal programme to move the system to a more modern 'cloud-native' approach: the system is internally hosted but makes use of cloud-based technologies.²⁷ The Bank noted that this made the RTGS easier to update, as it allows for individual elements to be replaced more easily and without disrupting day-to-day business. It also allows off-the-shelf products to be used in combination with components, like the core RTGS engine, which are specially constructed.

2.25 The Bank believes it is one of the first central banks to build its RTGS using this approach. Introducing a new technology design meant the Bank had to manage an increased risk to technical delivery, particularly the level of 'unknown' risks. It put in place several mitigations.

- To support technical innovation in the new core engine and integration of system components, the programme incorporated external assurance, alongside internal assurance and testing. This gave additional, independent assurance on areas such as the technical design and architecture, technical implementation, operational readiness of the system, user testing and cyber security.

²⁶ See footnote 7 for definition.

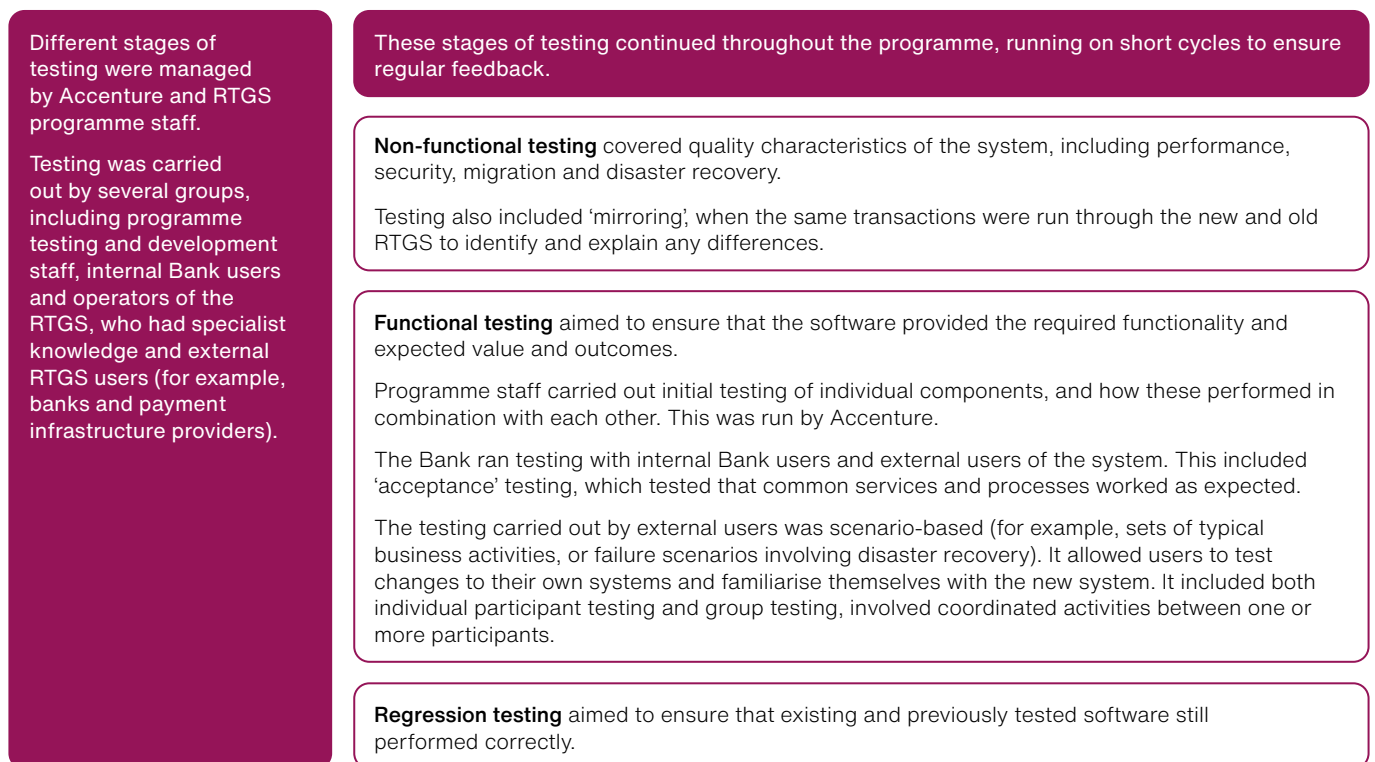
²⁷ Cloud-native approaches are based on linking together different applications, which may be hosted in different locations.

- The programme set up standard processes for user testing, involving programme development and testing teams, business users within the Bank, and external users of the RTGS, like banks and financial services providers (**Figure 11**). The Bank told us it was able to use a much higher level of automation in testing than for other programmes.
- Delivery was planned as a sequence of 'transition states', with each stage providing new functionalities, and capable of stand-alone operation if later stages were delayed or did not take place.²⁸
- The contract with Accenture included a three-month period of enhanced monitoring and support ('hypercare') following the launch.

Figure 11

Testing processes used in the Real-Time Gross Settlement system (RTGS) renewal programme

The programme set up standard processes for user testing, carried out by programme staff, business users within the Bank, and external users of the RTGS



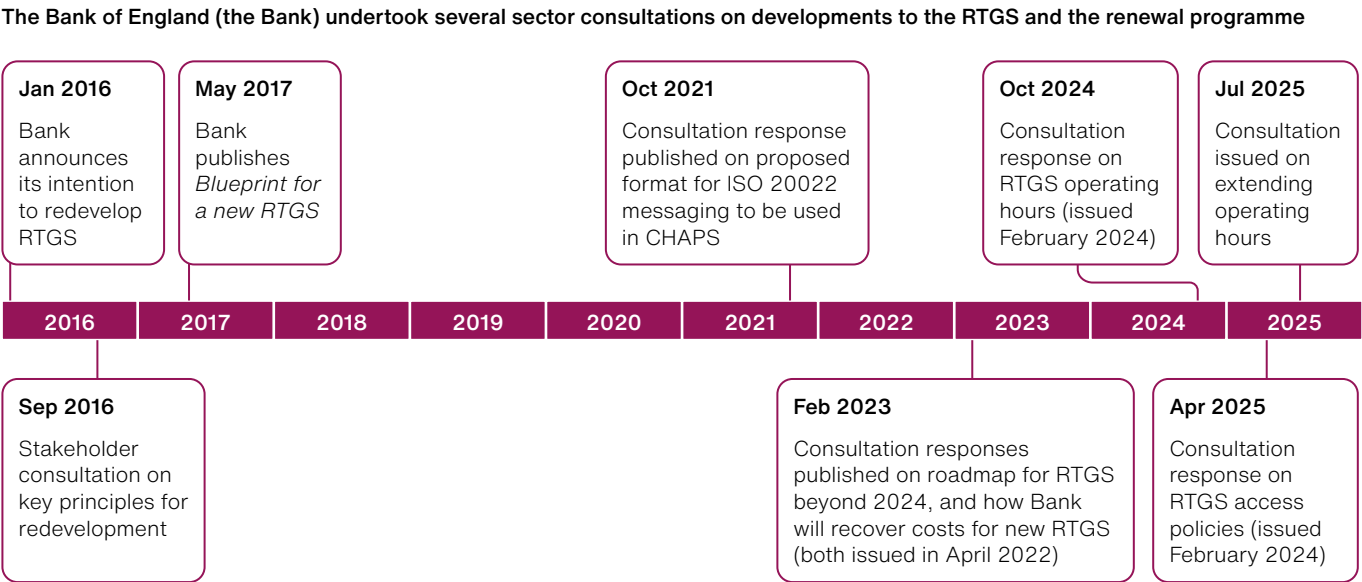
Source: National Audit Office summary of Bank of England documentation

28 Transition state 1 involved foundation projects and enablers, making changes to systems supporting the RTGS (for example, a new engagement platform to manage communication with users). Transition state 2 covered implementation of the new messaging standard, and updates to the core infrastructure. Transition state 3 covered the launch of the new RTGS. A planned transition state 4 covering future system enhancements was removed from the programme's scope in 2021-22, to be considered as a set of post-launch improvements.

Stakeholder engagement

2.26 The Bank undertook a range of stakeholder engagement as part of the renewal programme. It used a variety of channels to update the financial sector on the programme and get feedback. This included industry consultations and events, focused feedback groups, subject-specific working groups and newsletters (**Figure 12**).

Figure 12
Stakeholder consultations for the Real-Time Gross Settlement system (RTGS) renewal programme, 2016 to 2025



Note

1 The ISO 20022 messaging standard is an international standard that facilitates the sending of enhanced payments data. CHAPS is the UK’s high-value payments system, operated by the Bank.

2.27 In addition to wider consultation, programme staff engaged directly with RTGS users to prepare them for the implementation of the new messaging standard in June 2023, and the launch of the new RTGS in April 2025. The Bank told us that the update to the messaging standard (affecting the 38 direct CHAPS participants) involved more technical and operational change for users than the launch of the new system.

- **User testing:** This was an important part of the programme's overall testing strategy (Figure 11), with participants self-reporting their progress and providing feedback to the Bank. It also allowed end-users to test changes needed to their own systems and get familiar with new interfaces.
- **Dress rehearsals:** RTGS users were included in the Bank's dress rehearsal events ahead of the main launch dates. These tested the functionality, processes and contingency plans for the launches, allowing participants to gain familiarity with the process and address any potential risks.
- **Industry readiness:** The Bank regularly monitored and assessed industry readiness, an important criterion for the programme proceeding with any go-live decisions. It engaged with stakeholders in several ways to assess readiness, including user testing, feedback and reporting; commissioning external assurance for larger CHAPS participants (for the new messaging standard); and requiring senior management attestations about readiness.

2.28 In our stakeholder interviews, all of them cited positive features of the programme's approach to engagement, consistently describing it as open, collaborative, responsive, and setting clear expectations.²⁹ Stakeholders mentioned, for example, the variety of communication channels used and the dedicated programme liaison points who supported them. They reported that user testing and dress rehearsals were well organised, with good communication. Overall, most were positive about how the Bank had updated them on changes to the timeline and launch dates.

2.29 Stakeholders noted some areas of improvement, often related to the preparations and launch of the new RTGS, for example that:

- Bank communications were not geared towards all users, with too much focus on bigger banks;
- the Bank should have provided earlier notification about timeline changes, particularly the final change in the RTGS launch date; and
- more upfront information on how timeline changes affected users would have been useful, with the Bank not always appreciating the impact of changes on all users.

²⁹ Our 11 stakeholder interviews included nine interviews with RTGS users and two interviews with industry bodies representing members who were RTGS users.

Decommissioning of the old system

2.30 One of the readiness criteria for the launch of the new system was confirmation of decommissioning plans for the old RTGS. This included the physical removal and destruction of computers, networks and data disks. Decommissioning was made more straightforward because the switchover between systems meant that no old code, applications or data logs were required. The Bank also had experience of elements of the decommissioning process when it refreshed the RTGS hardware in 2017.³⁰

2.31 Decommissioning began in May 2025, and the Bank told us it was largely complete by September 2025. Remaining activities included amendments to the monitoring system, and exiting contracts related to the old system which were retained beyond the launch in case they were needed to provide continuity of service.

2.32 The Bank could not estimate internal decommissioning costs as they were covered by BAU technical support, rather than the programme. It estimated up to £15,000 of external costs, for example, for disc shredding.

³⁰ Hardware includes computers, disks and other physical equipment.

Part Three

Managing future risks and developments

3.1 Part Three covers the Bank of England's (the Bank) plans for maintenance and operation of the new Real-Time Gross Settlement system (RTGS) and future enhancements to the system, and wider lessons for the Bank from the RTGS renewal programme (the programme).

Maintaining and operating the new RTGS

3.2 The Bank is responsible for operating, maintaining and updating the new RTGS. It developed a new target operating model with input from programme, business area and technical staff, which was phased in from June 2023.³¹ The new model brings together payments and technical staff into teams supporting different functions (for example, monitoring and settling accounts), alongside standing teams with responsibility for system oversight and managing change.

Transition from the programme to business-as-usual

3.3 To support the transition to business-as-usual (BAU), knowledge transfer was an important element in the programme and incorporated in the Accenture contract. The Bank strengthened transfer processes around documentation and training in response to a 2024 internal audit. The transition approach included:

- identifying documentation, processes and training required for running the system and handing this over to relevant BAU teams;
- in addition to deploying payments and technical specialists from the Bank on the programme, setting up a programme of intensive training on the system for existing staff ahead of launch dates and training routes for new recruits; and
- re-assigning any unresolved risks and benefits that required further tracking to BAU owners.

³¹ A target operating model describes how an organisation intends to operate at some point in the future. The model can cover the areas of services, technology, people, organisation and process underpinned and supported by governance, suppliers, partners and customers. It focuses on key elements that are changing, but it should also show how the change will affect other parts of the organisation and partner organisations.

Managing change and upgrades

3.4 In contrast to the old RTGS, where upgrades had to be planned on average three or four times a year, the new RTGS is more flexible and can be upgraded more frequently. The Bank told us it had made over 1,200 system changes in the two years up to July 2025. The Bank established a new, more structured change management process for the new RTGS. This includes the introduction of a RTGS Change and Planning Office (RCPO), with overall governance of all RTGS change, and responsibility for coordinating and facilitating strategic change. It oversees upgrades required to maintain the system and future enhancements to increase system functionality.

3.5 While it is not possible to completely rule out significant issues or outages affecting complex systems like the RTGS, issues are more likely when the system attempts something for the first time. As of September 2025, the new system has gone through its full cycle of routine system activities and completed a first planned upgrade in August 2025 without issue (**Figure 13** on pages 46 and 47). Other planned events for 2025 included further ISO 20022 messaging-related changes in November as part of a global programme and the first post-launch use of onboarding procedures for new RTGS users in October.³² The first CHAPS direct participant is scheduled to be onboarded in February 2026.

3.6 In our stakeholder interviews, some users had concerns about managing this higher volume of anticipated change, and the cost and resource implications for users, as well as the clarity of current change plans and timelines, and what is required of users.

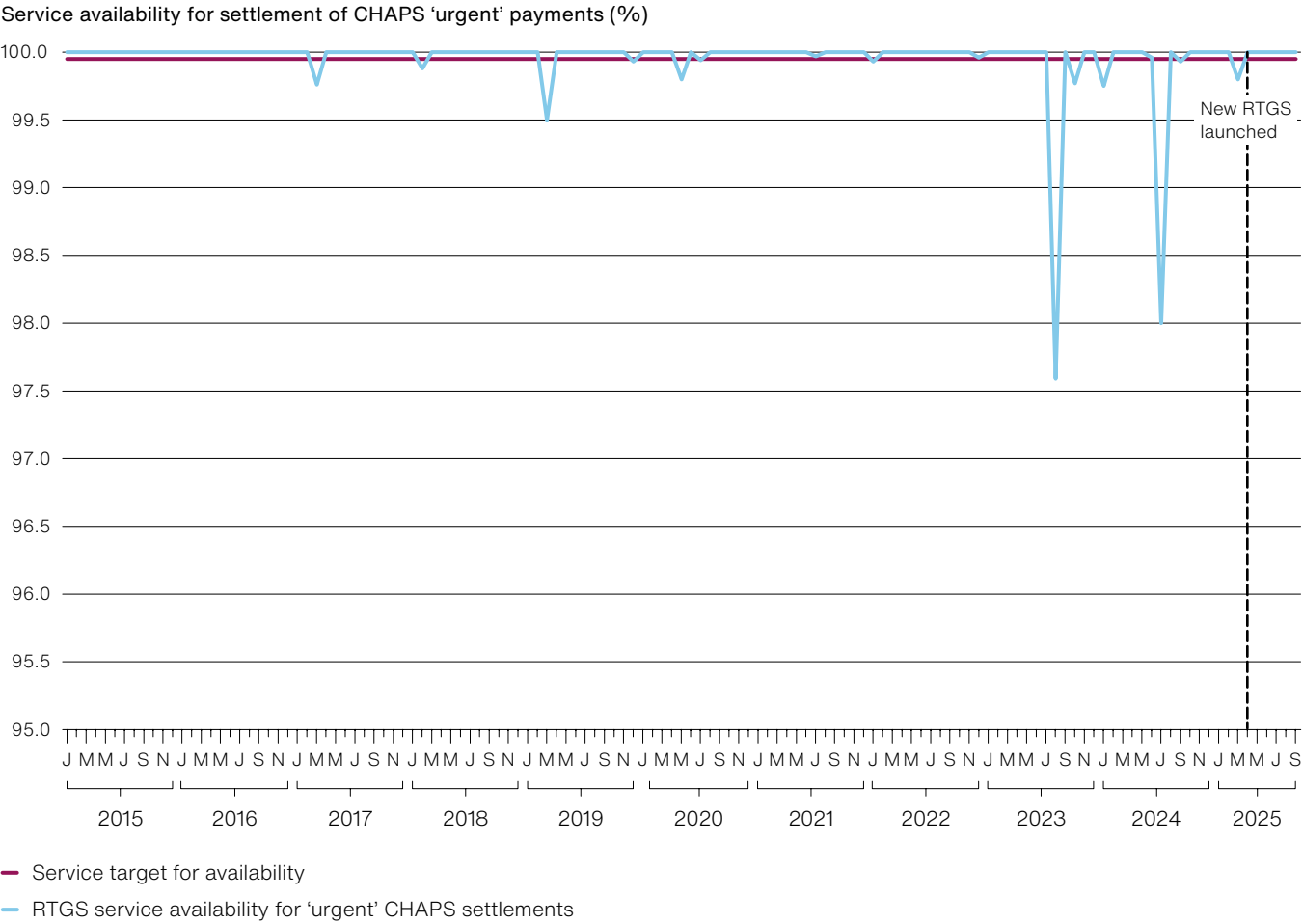
3.7 The Bank has acknowledged a wider organisational issue with technology obsolescence affecting its IT, which will take some years to resolve. To manage potential obsolescence affecting the RTGS, the RCPO maintains a schedule to ensure that the core primary components of the system are up to date. Critical RTGS processes run separately from the Bank's wider technical services. Some non-critical RTGS services remain dependent on wider services, with alternative plans in place if these are unavailable. The Bank's management of obsolescence affecting RTGS therefore includes some applications that the system shares with the wider Bank.

3.8 The Bank told us that the new operating model and BAU funding factors in the provision of continuous improvement ('evergreening'). This requires an increase in resourcing, for example, technology support, compared with the previous system. The Bank must now manage around 50 external suppliers of products that support RTGS operations. It also manages BAU funding and capital spend separately to funding for planned future enhancements, which would need separate approval.

³² In addition, by the end of 2025, Accenture will make changes related to deferred defects and enhancements in the system, which were not critical to the April 2025 launch. These are included in the routine planned upgrades.

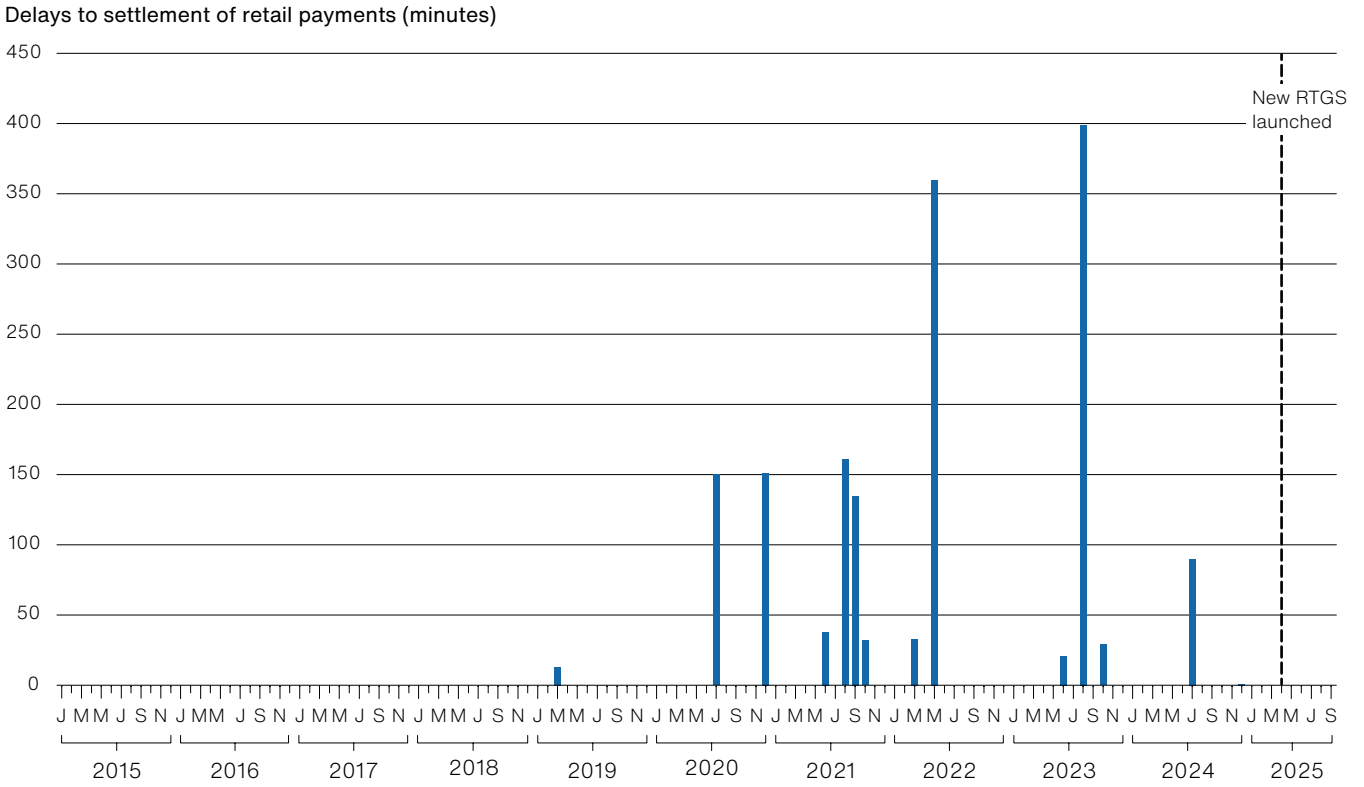
Figure 13
Monthly performance of the Real-Time Gross Settlement system (RTGS), selected metrics, 2015 to 2025

As of September 2025, the new system has gone through its full cycle of routine system activities and completed a first planned upgrade in August 2025 without issue



- Notes**
- 1 The RTGS provides settlement services (finalises transactions) for the UK's sterling payment systems, including CHAPS (the UK's high-value payment system), and retail payment systems.
 - 2 Not all performance metrics are shown. The first metric shows availability for settlement of 'urgent' payments in CHAPS (immediate settlement, with a target availability of 99.95%). Retail payment systems settle obligations at set points during the day, with the second metric recording any delays to settlement.

Source: National Audit Office analysis of published Bank of England statistics



3.9 While the Bank has procedures in place to keep primary components of the RTGS up to date, it has not yet modelled the point at which major system elements, like the core settlement engine or the messaging gateway which allows interactions with RTGS users, may need replacement. It noted that the modular design of the system should mean that each component can deal with changes elsewhere in the system, with the core engine expected to be the one lasting the longest.

Future enhancements to the RTGS

3.10 At the launch of the new system in April 2025, the Bank had delivered against the five priorities (resilience, access, interoperability, functionality and end-to-end risk management) set out in the 2017 Blueprint (**Figure 14** on pages 50 and 51). As intended, the new system also had capacity for improved functionality in the future. In our interviews, stakeholders were generally happy with the new system, commenting particularly on the introduction of the new messaging standard and getting a more resilient and stable system.

3.11 In February 2023, following industry feedback and consultation, the Bank published its Future Roadmap, setting out three priority areas for further work after the launch. The Bank is using a 'co-creation' approach with the financial sector to understand needs and to shape the design of future enhancements. This includes thematic engagement groups for each priority area, and wider industry discussions and engagement. The Bank highlighted that it has some complex logistical and sequencing challenges to address as it brings in future enhancements, in addition to still needing to identify technical solutions for some areas.

- **Extended operating hours:** As of 2025, the UK RTGS had shorter settlement hours than systems in many other countries.³³ Industry feedback noted that longer hours could help with payments across different time zones (as it increases the overlap with other countries' business hours), with a preference for optional participation, as not all participants have the capability to operate longer hours. In 2025, the Bank published a consultation inviting views on extending RTGS and CHAPS settlement hours.³⁴ The Bank proposed a phased implementation from 2027, with an aim of near 24/7 availability by around 2030.
- **Synchronisation:** This functionality would allow payment systems to coordinate the movement of funds in the RTGS with the exchange of assets on other systems, for example to facilitate a chain of house purchases across several buyers and sellers. The Bank is planning for a phased approach, initially providing a test environment for prospective synchronisation operators to demonstrate potential services and how they would interact with the RTGS. This is due to launch in 2026.

³³ As at 2025, the RTGS opened for settlement services between 6am and 6pm on business days, with a contingency settlement window to 8pm to be used when required. Operating hours, which include provision of some additional services, run from around 5.15am to 7pm on business days.

³⁴ The consultation invited views on an initial extension of early morning opening and availability during some bank holiday weekends.

- **Resilient channels:** The Blueprint included aims to provide the capacity for the system to use alternative messaging channels, which would reduce dependency on the current single provider, Swift.³⁵ Originally, the renewal programme included plans to establish an alternative network and supporting contingency, but this was removed from scope during the first replan.³⁶ The Bank told us that it is progressing with work on additional channels, but its initial technical approach for delivering an alternative network is no longer feasible. It is now considering alternative approaches, with any implementation unlikely before 2027. Separately, the Bank also wanted to improve the contingency solution in place for the RTGS (known as MIRS), to allow for faster restoration of service in the case of disruption. It is still considering what features and functionality this needs to have, and how best to sequence and manage interactions between changes to contingency solutions and messaging networks.

3.12 Another Blueprint aim was to widen access to the RTGS for new types of providers. The April launch put in place some technical enablers to support this (Figure 14), and the Bank has also made other changes, for example launching a new type of omnibus account.³⁷ The Bank told us it will be better able to judge the impact of measures to reduce the time taken and costs new users incur to join the system (for example, making it more flexible how users connect with the system) from the second half of 2026. In our stakeholder interviews, we heard some concerns that there are still potential barriers and disincentives (including costs of onboarding and services, and time for onboarding) and that broader policy changes might still be needed. Some stakeholders noted the importance of providing an additional network to Swift, to support the system's resilience by reducing dependency on Swift, with some linking this to reduced costs and broader access.

³⁵ Swift is a global messaging network used by financial institutions to securely exchange payment instructions. It plays a central role in the RTGS by transmitting messages between banks and other end users.

³⁶ Contingency solutions are backup systems or processes designed to keep the RTGS system running or restore it in case of disruption. They ensure continuity of service and minimise incidents or technical failures.

³⁷ Omnibus accounts can be held by regulated payment system operators, who can hold other bodies' funds to fund settlement on their behalf, thus providing indirect access to more users. As of 2025, there was one omnibus account holder.

Figure 14

Progress against enhancements set out in the Bank of England's (the Bank's) 2017 Blueprint for a new Real-Time Gross Settlement system (RTGS) service for the UK

With the launch of the new system in April 2025, the Bank delivered against the five priorities set out in the 2017 Blueprint

Key features of RTGS	Proposed enhancements in the Blueprint	Progress in implementation	
		Implemented by April 2025	Notes on implementation to date and future plans
Higher resilience: Strengthen resilience of RTGS and flexibility to respond to emerging threats.	Further strengthened resilience framework.	✓	RTGS has delivered a new and more resilient core settlement engine.
	Enhanced contingency messaging channel and channel-agnostic design.	*	Further implementation is part of the Bank's future roadmap. RTGS incorporates a channel-agnostic design, but at launch had not established a messaging channel. The Bank is considering options and implementation approaches with no confirmed date for implementation.
Broader access: Facilitate greater direct access to central bank money settlement for financial institutions and infrastructures.	Non-bank Payment Service Providers (NBPS) eligible for RTGS settlement accounts (subject to appropriate safeguards).	✓	The first NBPS was onboarded in 2018. While broader access has been enabled, there is no confirmation regarding NBPSs eligibility for safeguarding accounts. Under current policy, NBPSs can use their accounts for settlement only.
	Streamlined testing, connectivity and onboarding requirements.	✓	RTGS has streamlined and automated the onboarding process for participants, with first users going through the process in Autumn 2025.
	Cost of access reduced by streamlined connectivity and contingency requirements.	*	Alongside a general increase in user fees for RTGS to cover the costs of the renewal programme (see paragraph 1.11), in 2025 the Bank introduced some variable fees which will lower costs for smaller users. It is also putting in place measures which aim to reduce the time taken and costs new users incur to join the RTGS. The Bank says it will be better able to judge the impact of these measures from the second half of 2026, once more new participants have joined the system.
	Third-party aggregators able to provide technical connectivity for institutions seeking direct access to CHAPS.	✓	Through a policy and assurance change, at least four direct participants use aggregators to connect to CHAPS.
	Institutions of systemic importance required to access CHAPS directly.	*	Direct discussions with institutions of systemic importance have begun, following consultation in 2024, although the number of CHAPS members has increased since 2017, including institutions that may have met the criteria for systemic importance.

Figure 14 *continued*

Progress against enhancements set out in the Bank of England's (the Bank's) 2017 Blueprint for a new Real-Time Gross Settlement system (RTGS) service for the UK

Key features of RTGS	Proposed enhancements in the Blueprint	Progress in implementation	
		Implemented by April 2025	Notes on implementation to date and future plans
Wider interoperability: Promote harmonisation and convergence with critical domestic and international payment systems.	ISO 20022 messaging.	✓	ISO 20022 messaging implemented for CHAPS in 2023.
	Facilitate introduction of cross-border and cross-ledger synchronisation module at a later stage.	✓	Further implementation is part of the Bank's future roadmap. As of October 2025, the Bank has introduced a new environment that allows synchronisation operators to interact with the new synchronisation capability and determine what can be offered to RTGS users.
	Promote alternative processing arrangements for time-critical retail payments.	✓	Following consultations, the Bank has paused any actions to develop CHAPS as a retail alternative.
Improved user functionality: Support emerging user needs in a changing payment environment.	Near 24x7 technological capability and able to be upgraded to full 24x7.	✓	Further implementation is part of the Bank's future roadmap. In 2025, the Bank published a consultation on extending RTGS and CHAPS settlement hours. It proposed a phased implementation from 2027, with an aim of near 24/7 settlement availability by 2030.
	Application Programming Interface (API) for richer access to payment and liquidity data.	✓	RTGS offers a range of APIs for CHAPS DPs and other account holders, offering improved access to payment and liquidity data.
	Functionality to facilitate tracking RTGS payments.	✓	The Bank has added a Global Payment Innovation (GPI) tracker field into CHAPS payments to facilitate tracking RTGS payments.
	Forward-dated and timed payment submission.	✓	The system can now accept CHAPS payments up to 10 days in advance.
	Analyse if further functionality needed to facilitate global liquidity management.	✓	The Bank has considered two options to facilitate global liquidity management. These remain under consideration following an industry consultation.
Strengthened end-to-end risk management: Strengthen capacity to respond to evolving system-wide risks.	Direct delivery of the high-value payment system to enable end-to-end risk management.	✓	The Bank brought management of CHAPS in-house in 2017.

Notes

- 1 The ISO 20022 messaging standard is an international standard that facilitates the sending of enhanced payments data.
- 2 CHAPS is the UK's high-value payments system, operated by the Bank.
- 3 Synchronisation is a functionality that allows the movement of funds in the RTGS to be coordinated with the exchange of assets in other systems.
- 4 In the third column, the asterisk symbol (*) indicates that there has been some progress on a feature, but that it has not yet been fully implemented.

Source: National Audit Office analysis of Bank of England documentation

3.13 Many of the stakeholders we talked to identified a potential rise in the use of digital currencies as a key development affecting payments, although there were mixed views about the pace of change and how it might impact the RTGS. In 2025, the government has committed to developing digital assets. However, several policy questions will not be concluded until at least 2026, including whether the Bank and the government will decide to proceed with developing a central bank digital currency (a 'digital pound').³⁸ The Bank's position is that the new RTGS has been designed to provide final settlement to a variety of payment systems and could be adapted to new settlement models. It notes that providers offering digital currency settlement could access the RTGS in different ways, for example through omnibus accounts, synchronisation or APIs.³⁹ It has established how a digital pound could integrate with the RTGS, largely using existing RTGS functionality with some minimal change required. We identified stakeholder concerns that the Bank must ensure that the RTGS infrastructure is aligned with future policies around digital currencies and trends in the use of digital assets.

Wider lessons for the Bank of England

3.14 The Bank has ambitions to modernise its ways of working and operations, including in its central banking operations and broader areas such as technology and data. It identified 19 high-level lessons from the programme that could be applied more widely to managing change projects in the Bank. These included learnings around appropriate sponsorship, governance and accountability; the importance of early planning and ongoing review, for example, in resourcing; contract specifications and management; the effective use of agile principles; and stakeholder engagement. Programme staff have shared lessons learned with central teams and other project teams, the Court, and through a Bank-wide seminar, and provided additional support and review to other Bank projects.

³⁸ Other areas to be resolved include the implementation of the National Payments Vision, which affects retail payment systems, the development of a digital gilt instrument, and the regulation of stablecoin in the UK.

³⁹ APIs (Application Programming Interfaces) are a set of commands, functions, protocols and objects that programmers can use to create software or interact with external systems. More advanced APIs can be designed to build specific technological and business capabilities, across multiple systems and architectures. They are an accessible way to extract and share data within and across organisations.

3.15 Although the programme was unique in terms of its size and technical complexity, in our view, there are several elements of the programme that the Bank could apply more widely in its management of digital and business transformation projects. Positive elements which supported delivery include:

- establishing clear and effective governance, accountability and programme management arrangements, and adapting them as necessary;
- how the programme encouraged an open culture and collaborative working and leadership (between business area and technology staff, and the contractor), including the role of digital specialists in decision-making;
- fixing designs and specifications before awarding contracts, to support detailed planning and costing;
- early assessment of skilled resources needed, with active management of staffing mix;
- thorough testing, incorporating greater automation; and
- use of Target Operating Models.

Appendix One

Our audit approach

Our scope

- 1** This report examines whether the Bank of England (the Bank) managed the Real-Time Gross Settlement System (RTGS) renewal programme (the programme) effectively and efficiently to achieve a new system resilient to future developments and risks, and whether it has identified wider learning from the programme.
- 2** We did not undertake a detailed technical assessment of the new (or old) RTGS, although we did examine the programme's approach to gaining assurance over the technical design and implementation and, at a high-level, its approach to cyber security and resilience. We have not evaluated the role and ongoing operation of the RTGS and CHAPS.
- 3** We reached our conclusions following analysis of evidence collected primarily between May and September 2025.

Our evidence base

Interviews

- 4** We carried out 15 semi-structured interviews with a range of Bank staff to understand all aspects of the development, management and operation of the renewal programme, the lessons learned, and future risks and developments for the RTGS. Interviewees included senior stakeholders such as the Chair of the Court, Non-Executive Directors, Deputy Governors, the senior owner and technical director of the programme and members of the Programme Board.⁴⁰ We also spoke to programme staff responsible for procurement, technical development, assurance and testing, stakeholder engagement, internal audit, future enhancements, project management, and finance. We carried out some interviews with Bank staff outside the programme to understand the Bank's broader digital transformation.

⁴⁰ The Court is the Board of Directors of the Bank of England.

5 We carried out nine interviews with banks, payment service providers and other financial service providers who are users of the RTGS, to understand their experiences of RTGS operations and renewal, and to explore future risks and developments that might affect the RTGS and payment transactions more broadly. We spoke to representatives from Barclays, BNP Paribas, ClearBank, Fidelity, Modulr Finance, NatWest, Pay.UK, Visa and Wise. We also interviewed UK Finance and the Payments Association as industry representative bodies. Additionally, we spoke to three academics with expertise in financial and payment systems relevant to the UK context: Professor Daniel Broby, from the Asian Institute of Management, Professor Markos Zachariadis, from the University of Manchester, and Professor Muhammad Ali Nasir from Leeds University Business School.

6 We spoke to representatives of the European Central Bank, US Federal Reserve and Bank of Canada and Payments Canada, to understand other central banks' experiences in running and updating settlement systems. We also reviewed publicly available documentation and reports.

7 We carried out three interviews with representatives of Accenture and Swift, to understand their experiences of working on the programme, and future risks and developments for the RTGS.

Document review

8 We reviewed a large volume of internal documentation provided by the Bank, primarily from the renewal programme but also from wider Bank functions to understand all aspects of the development, management and operation of the RTGS programme. This review supported our assessment of lessons learned and helped identify future risks and developments for the RTGS system. The documentation covered a broad range of topics.

- **Programme governance and decision-making:** This included organisational structures, discussion papers and minutes from senior management and the Court, and records of decisions taken. We also reviewed papers and minutes from programme boards and forums, including the RTGS Renewal Programme Board, Renewal Executive Board, RTGS Renewal Committee, and relevant technical boards and working groups.
- **Programme planning and delivery:** This included business cases, programme replans, documentation around the costs and benefits of the programme, staffing over the lifetime of the programme, and procurement and contracting records for external suppliers. We also reviewed technical documentation relating to the system's architecture, development and implementation.
- **Stakeholder engagement and system readiness:** This included materials on user testing, industry engagement and communications with RTGS participants and external partners.

- **Risk management and assurance:** This included the programme's overall approach to risk, risk logs, dashboards and monitoring summaries, as well as internal audit reports and external assurance reviews, including technical assurance.
- **Programme evaluation and future planning:** This included lessons learned, programme closure materials and future plans post-renewal.

Analysis of data

9 We analysed programme cost and resourcing data provided by the Bank, alongside system performance data pre- and post-renewal as published on the Bank's website.

Use of National Audit Office frameworks and reports

10 We drew primarily on the National Audit Office (NAO) FACT framework, which supports the evaluation of digital transformation programmes, to help structure our assessment and shape key questions for the study. We also drew on other NAO frameworks and guidance as relevant to support our assessments. We reviewed previous NAO reports on digital transformation and large-scale public sector programmes to identify common problems, challenges and risks, and to inform our understanding of good practice. These reports provided relevant examples and context that supported our analysis and presentation of judgements in the report.

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National Audit Office

Design and Production by NAO Communications Team
DP Ref: 014943-001

£10.00

ISBN: 978-1-78604-649-9