



ASSESSMENT OF NIE NETWORKS' RP7 IT PROGRAMME

14 NOVEMBER 2023 – VERSION 1.0 FINAL

WRITTEN BY GEMSERV

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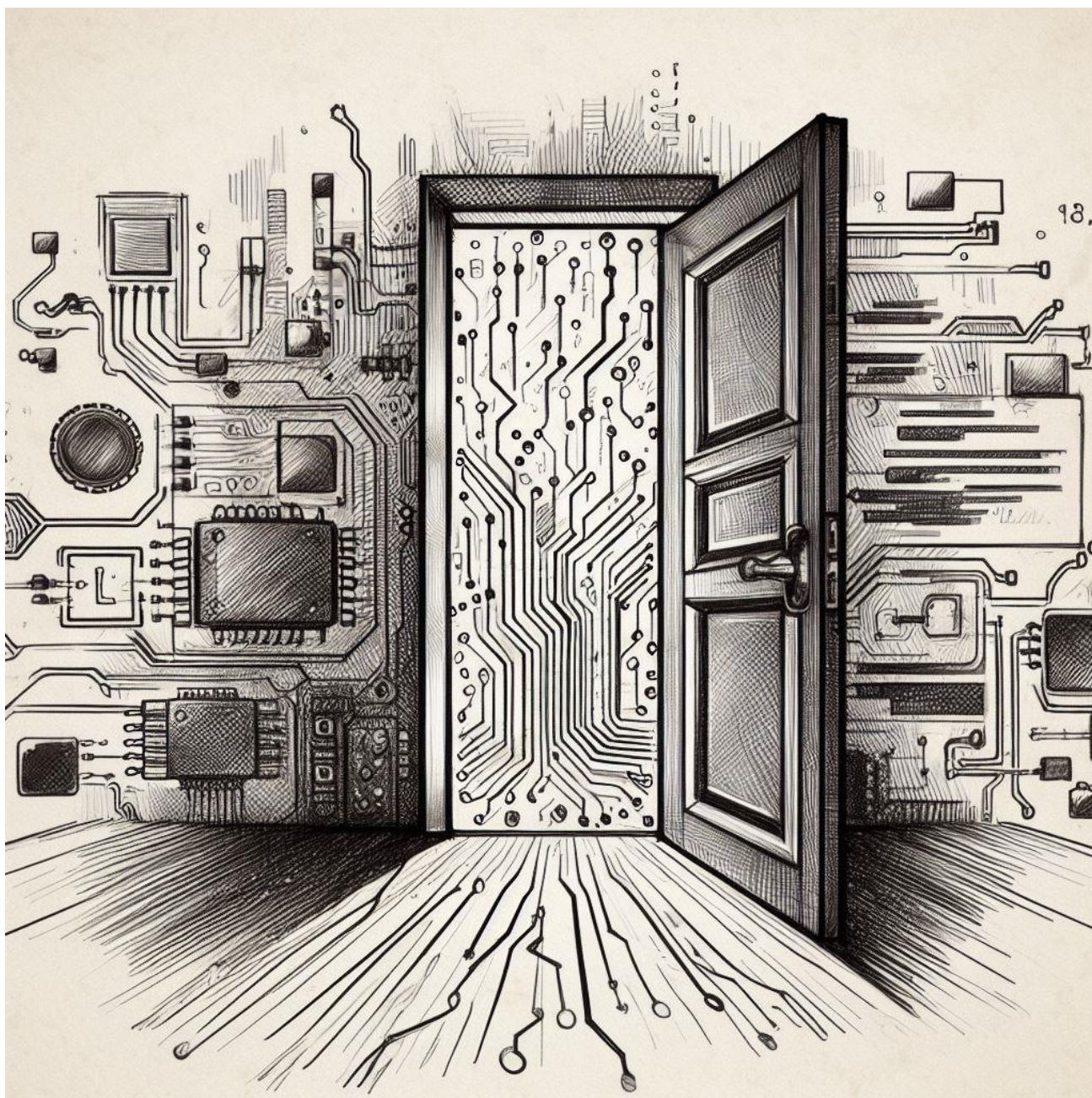
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INTRODUCTION





1 INTRODUCTION TO THE REPORT

1.1 BACKGROUND

1.2 ENGAGEMENT

Gemserv has been engaged by the Northern Ireland Authority for Utility Regulation (NIAUR) to opine on the ‘IT Strategy and Business Cases for 99 IT Projects’ proposed by the Northern Ireland Electricity Network’s (NIE Networks) business plan for the RP7 Price Control. The purpose of the engagement was to advise NIAUR as to whether the NIE Networks’ strategy and IT delivery programme was efficient and offered customers value for money. Should the review findings regard costs as inefficiently planned, we were asked by NIAUR to recommend the level to which NIAUR should disallow them.

NIAUR asked us to be cognisant of the wider context in which NIE Networks are operating. There is a very strong need for IT investments to support the transition to the Distribution System Operator (DSO) and to Net Zero which will have digital capability at its core. To add to this, both NIAUR and Gemserv acknowledge the imperative to replace the ERP systems before they become no longer supported.

We have been provided with artefacts that are relevant to support this assessment, including strategy documents, supporting project and programme documents (authored by NIE Networks’ Advisers) and summary business cases for each project. In addition, we have been given the opportunity to ask NIE Networks specific questions on its submission through a formal process managed by NIAUR; and during two engagement meetings with the company. We refer to the answers to these questions in this report by using the numbered indexing system commencing with the prefix ‘UR’ (e.g. UR0298).

1.3 SCOPE

The table below shows key elements of scope within this report.

Table 1 –Project Elements in and out of scope

Dimension	Item	In/Out of scope
Considerations	Costs outside of NIE Networks’ IT programme	Out of scope
	RP6 extension costs	Partially In Scope
	RP7 costs (OpEx and CapEx)	In Scope
Artefacts	IT Strategy	In Scope
	DSO Strategy, Digitalisation Strategy, Cyber Strategy and RP7 Business Plan	Partially In scope – for information purposes only to provide additional context for programme themes.
	The answers to all questions posed by Gemserv to NIE Networks.	In Scope
	Detailed costing spreadsheets	In Scope
	Project descriptions	In scope







Mid-way through our assessment the NI Department for Energy (DfE) announced that electricity smart metering was to be implemented across Northern Ireland. Despite this, smart metering is outside of the scope of our assessment, and it has not been factored into our findings.

We have sought to assure that NIE Networks IT investments in RP7 are efficient. However, it is important to note that our remit does not include a detailed assurance of the business decisions and priorities put forward by NIE Networks within its RP7 IT submission.

1.4 APPROACH

Before considering recommendations on specific project-focussed disallowances or allowances, we took a broader view of the conditions required for us to make a disallowance. To execute due diligence, we decided to address four key questions before making detailed recommendations to NIAUR which costs should be disallowed. The questions are outlined below along with their rationale.

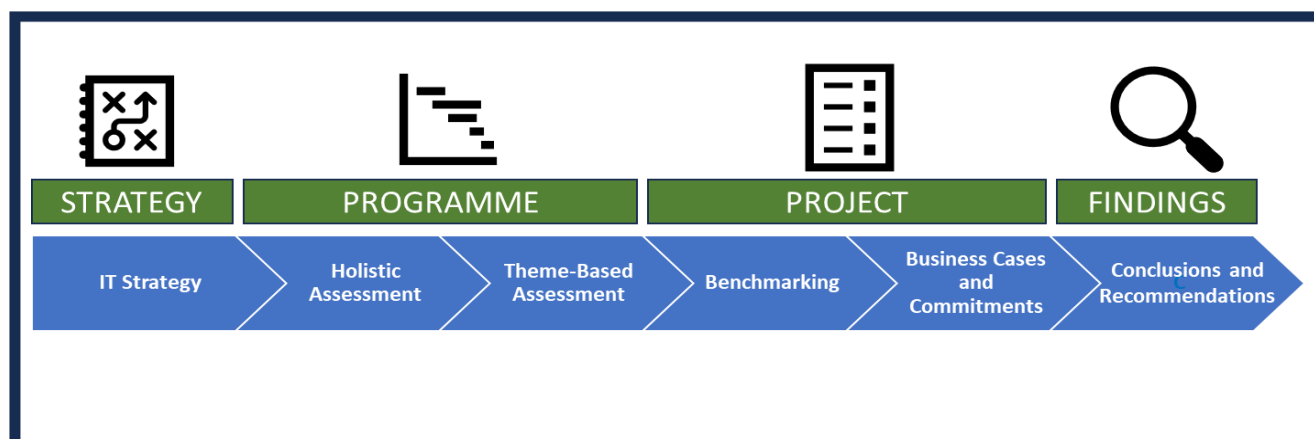
Figure 1 – Key questions

Question			Rationale
	Appropriate Scope	Is the programme scope appropriate to a UK DNO?	We must be reasonably confident that the programme scope is appropriate to a UK DNO in 2023. This recognises the many challenges facing a DNO such as connecting low carbon technologies, digitalising the business whilst maintaining cyber secure and up to date enterprise systems, building DSO capability and planning for Net Zero. It does not include frivolous or speculative investments.
	Delivery Capability	Has NIE Networks the breadth of capability to manage the programme?	We must be reasonably confident that NIE Networks has the inherent set of capabilities to deliver major IT projects.
	Timely Delivery	Can the programme be delivered in RP7?	The premise of NIE Networks' submission is that the programme is deliverable within the six-year window of RP7 and we must be reasonably confident that this is the case.
	Determination of efficient costs	Is there sufficient information to understand the implications of a dermination?	We cannot recommend allowances for efficient costs on a project-by-project basis if we are not reasonably confident on the stability of the costs and that we can also predict the overall impact on the programme and on NIE Networks' customers.

We took a systematic approach and divided the submission into three sections: strategy, programme, and project. The programme section was divided into a holistic view and a theme-based view, and the project section was sub divided to consider 'benchmarking' and 'business cases & commitments' separately. We examined the submission through the prism of answering the four key questions above against each sub-section. Our approach is shown graphically in Figure 1 on the following page.



Figure 2 – Structure of Gemserv’s approach



Further detail of the scope of each section is described below and this forms the structure of our report.

Table 2- Summary of this report’s sections

Approach	Report Section	Report Sub-section	Scope and focus of the sub-section
Top Down	Strategy	IT strategy	The IT Strategy and supporting artefacts examining how they describe the programme, its rationale, and priorities.
Meet in the middle	Programme	Holistic Assessment	The projects are placed within the context of the programme and examined against the programme’s structure, complexity, and governance systems.
		Theme Based Assessment	A more in-depth analysis of the IT Themes which comprise the programme
Bottom-up	Project	Benchmarking	The results of our benchmarking of certain programme operational costs
		Business Cases and Commitments	An analysis of parts of the business case which are included in the project descriptions and how costs map to RP7 commitments
End to end	Findings	Conclusions	We make four conclusions based on our research and explore our recommendation to NIAUR
		Recommendations	

1.5 CHANGE TO THE REPORT SCOPE

As we progressed through our analysis, it became increasingly clear that we would not be able to attain the levels of confidence in the answers to the four key questions proposed in Figure 1. NIE Networks had proposed a complex, but also highly relevant programme that had the potential to deliver significant benefits to customers. However, amongst other factors, there was evidence that several major uncertainties could introduce risk to the programme’s costs and delivery timeframes. Moreover, there was insufficient analysis provided for us to determine the implications of any disallowance to customers.



By agreement with NIAUR, we have therefore focussed our effort on highlighting areas of the report where our confidence was weak. This includes where we believe the greatest risks to customers would arise from the implementation of the RP7 IT programme. We have also suggested further analysis of existing data (augmented with new information from the longer planning period) that would give NIAUR the necessary information to better determine cost allowances in the future.

1.6 RISKS, SUGGESTED IMPROVEMENTS AND ILLUSTRATIVE ANALYSIS

1.6.1 Risks and suggestions for improvement

We are keen that our report is helpful to NIE Networks and NIAUR in furthering the objective of determining efficient costs.

Whilst NIE Networks has provided a substantive and detailed submission there will inevitably be areas of explanation that we would consider incomplete. Consequently, by providing more assurance, NIE Networks may be able to satisfy NIAUR of the quality of the investment proposal. On the other hand, to address some risks may require NIE Networks to make operational decisions and take corrective action. We have therefore identified and catalogued a number of programme risks that are summarised at the end of each Programme sub-section for NIE Networks to consider.

While assessing the submission, the Gemserv team offered a few suggestions for improvement to our peers in NIE Networks, based on our experience as industry professionals and in the spirit of being constructive and helpful. These suggestions are for NIE Networks to consider in the round. However, areas of the submission which we have not commented on, or commented on positively, should not be seen as having zero risk of disallowance in any future regulatory process. We expect NIAUR and its future advisors will take all factors into account at the time of making a determination, including any additional analysis provided by NIE Networks.

1.6.2 Illustrative analysis and assumptions

We have undertaken three areas of quantitative analysis on the submission. The primary purpose of our analysis was to support the points we were making with helpful quantitative evidence. It was also our intention to illustrate, by way of example, the broad scope of synthesis and analysis that we would have expected so that we could proceed to a recommendation for the Determination. Since our analysis has not been used to determine a recommendation on efficient costs it is therefore *illustrative* rather than *deterministic* and includes simplifying assumptions that we contend are not material to the points we are making.

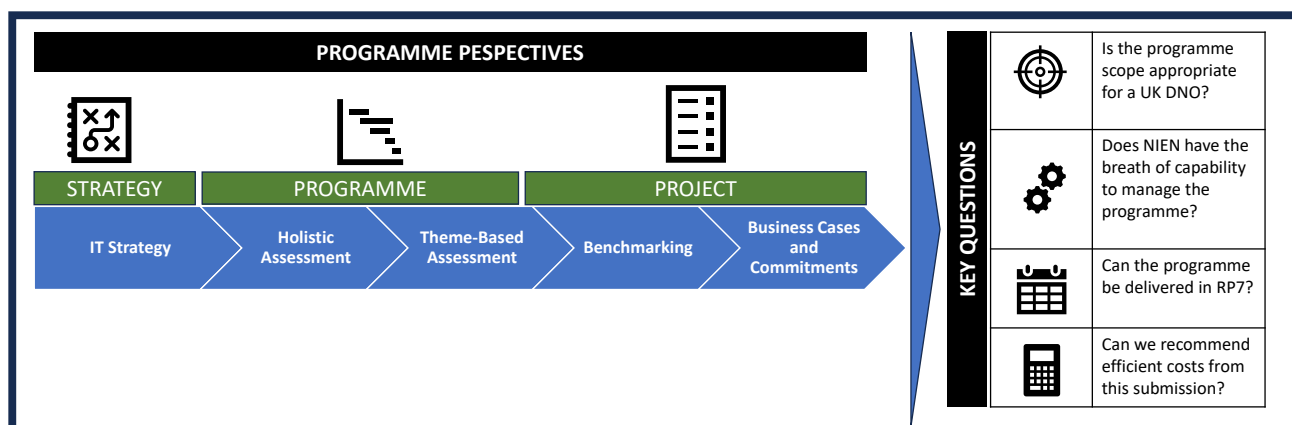
With reference to the above, we note that the RP6 submitted costs were changed during the course of our assessment. We have therefore removed these costs from our illustrative analysis as a simplifying step.



2 EXECUTIVE SUMMARY OF FINDINGS

To address the key questions (see section 1.3) we took three perspectives on the submission, based on the strategy, programme and project level (programme and project are sub-divided into two sub sections each). Figure 3 (below) shows how these sub-sections each help us to address the answers to the four key questions.

Figure 3 - Model showing how the different perspectives on the submission are each used to address the four key questions











As we progressed through the artifacts supporting the analysis, it became increasingly clear that we would not be able to attain the levels of confidence across all the questions we had posed. By agreement with NIAUR, we have therefore focussed our effort on highlighting areas of the report where our confidence was weak. This includes where we believe the greatest risks to customers would arise from the implementation of the RP7 IT programme. Our findings against the key questions are summarised in f



Figure 4, followed by our recommendation.



Figure 4 - Summary of findings against the four key questions

Question		Level of Confidence	Explanation
Appropriate Scope		Medium to high 	<p>There is a good case for the key elements of the programme - NIE Networks has made a good justification for the submission's core projects such as the ERP replacement; and they reasonably address key themes such as digitalisation, cyber security, and DSO transition.</p> <p>Aligned scope - Strategically, the scope does align with the needs of a DNO in 2023 and is broadly comparable to the projects put forward by GB DNOs as part of the RII0-II price control. NIE Networks has undertaken an options analysis (although we uncovered some weaknesses) for each project to ascertain the best way forward.</p> <p>Significant programme size, but broadly justified - The size of the programme is significant at c. £189M but this figure is broadly understandable due to the significant ERP replacement and building of digital and DSO capabilities. There may be scope for removing weakly justified projects.</p>
Delivery Capability		Medium to high 	<p>Professional submission - NIE Networks has taken a professional approach with an experienced team, Senior and experienced business leaders, have engaged with us and NIAUR. We have met subject matter experts, and we note that a number of the supporting documents have been provided/or supported by credible external advisers and delivery partners. We also understand that the programme has good governance and executive oversight.</p> <p>NIE Networks' submission is substantive, detailed and well-structured - The submission showed a good understanding of ERP implementation, DSO challenges and reasonable cyber security projects and, from a customer basis, sound projects around digital transformation. NIE Networks has also been able to demonstrate knowledge and previous experience of delivering an ERP replacement.</p> <p>Limitations to our analysis moderated our view and we perceive some gaps in strategic planning - Our confidence is moderated because we have not conducted detailed assurance on inherent deliverability capability (as this would have been outside of the scope of our engagement). Moreover, we identified several perceived risks to customer value and there were gaps in strategic planning.</p>
Timely Delivery		Low 	<p>We balanced delivery capability against programme scale and complexity - We have balanced the complexity of the programme together with NIE Networks' historical delivery experience and we have medium to high confidence in the intrinsic delivery capability.</p> <p>We have low confidence that this complex and challenging programme can be delivered (in its entirety) in RP7 - Despite NIE networks' experience of delivering smaller IT programmes, we have low confidence that it can deliver this entire challenging programme within RP7. It is much more likely that the size and complexity of the delivery plan will overwhelm its progress.</p>
Determination of efficient costs		Medium to Low 	<p>We have low confidence that the implications of any disallowance can be fully ascertained - We cannot make a fully informed and effective recommendation for funding (or disallowances) without greater insight into how the IT investments are prioritised, drive quantifiable or measurable benefits; and support the totality of NIE Networks own RP7 commitments. The many dependencies between the projects and themes exacerbate the risk that making determinations of efficient costs at this stage of planning maturity could have unintended consequences.</p>



Our main finding is set out below.

NIE Networks is given an opportunity to further analyse, refine and mature its programme and project plans to increase confidence in timely and within-budget delivery, enabling a bottom-up determination of cost

We believe that sufficient time should be allowed for NIE Networks to ensure a thorough review of the programme's 'uncertainties' and we recommend that this analysis should occur over an approximate period two years, to allow time for the results of further detailed planning (which NIE Networks will be required to do anyway as part of the implementation phase). In this way, any additional information provided to NIAUR at the end of the 'planning period' will reflect a more mature plan.

We thought it helpful to summarise our recommendations of the degree of effort required to increase our level of confidence.

1. **A resubmission is not required** - It is not necessary to substantially redraft the report which broadly makes the case for scope and size of the required investment.
2. **The quality of evidence required can be provided without a major reporting burden** - More certainty of cost and benefit information and more certainty in scheduling should emerge through the detailed planning that would occur anyway in the next phase of the programme. The levels of analysis and synthesis should be reasonable, proportionate and informed by the risk to customers. This intentionally limits the reporting burden on NIE Networks.
3. **More visibility and stewardship of benefits versus the RP7 commitments is required** - There should be more visibility of how the quantum of costs and benefits map to the RP7 commitments. Currently, only the alignment of costs is submitted and there are few quantifiable benefits in the submission.
4. **Prioritisation of projects in the programme is essential** - We would expect projects to be prioritised, informed by a sensible level of analysis around the dependency of a project on others, its benefits to customers (or to the business) and its contribution to the RP7 commitments.
5. **Consideration of the points in this report** - We would expect NIE Networks to review and consider the projects where we have identified a risk to customers or made recommendations. In many cases, we believe additional assurance and or contextualisation would be sufficient to improve confidence significantly.
6. **Ongoing engagement with NIAUR required** – We recommend that in any period of replanning, NIE Networks keeps NIAUR fully apprised of progress and apprised of key decisions being made in order to facilitate timely approval of detailed plans.



STRATEGY

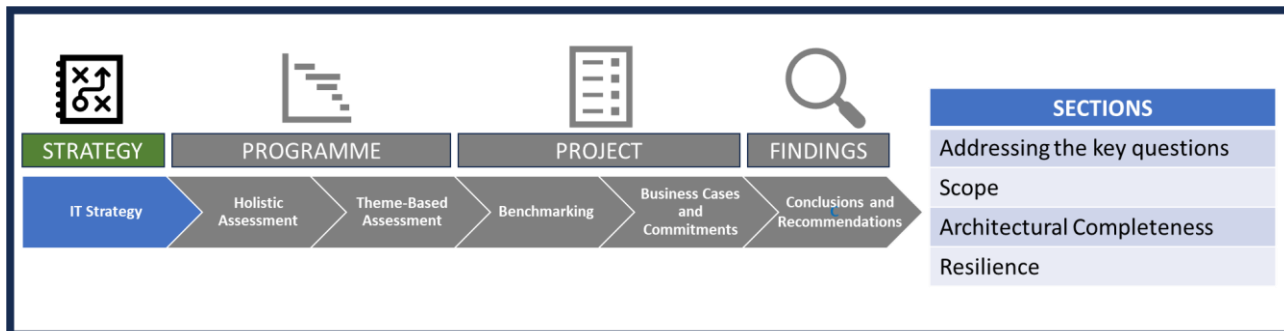




3 STRATEGY - IT STRATEGY

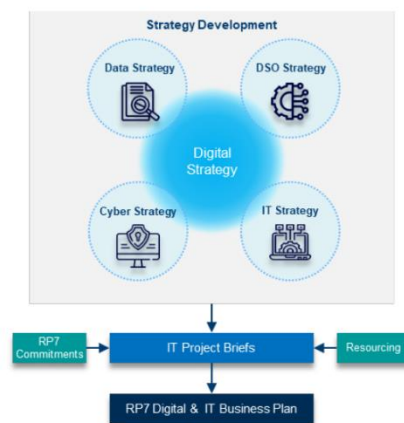
3.1 INTRODUCTION

Figure 5 – IT strategy and corresponding sections



In this section we examine NIE Networks’ IT Strategy. This is the umbrella document that provides structure, approach, and guidance to building digital and other capabilities to the RP7 projects submitted. This document has been reviewed as a stand-alone artefact, but within its functional wider context: as part of a constellation of strategy and business planning documents. This is shown in Figure 6 below¹

Figure 6 – The ‘constellation’ of strategy documents



We assessed the IT Strategy based on its scope, architectural completeness, and resilience. These were chosen as relatively straight-forward and non-proprietary ‘lenses’ that would give a common-sense perspective as to whether the strategy was clear, realistic and to what level it would support our confidence in programme deliverability.

¹ NIE Networks RP7 Digital & IT Business Plan p39 diagram 4.2







In the sections below we expand on each ‘lens’ and apply it to the IT Strategy, drawing on the other supporting Strategy documents in the ‘constellation’, where necessary.

3.2 ADDRESSING THE KEY QUESTIONS

The table below summarises at a high level how the **strategy perspective** has contributed to our assessment of the key questions.

Figure 7 - Addressing the key questions from a strategy perspective.

Question		Description
Appropriate Scope		<ul style="list-style-type: none"> • Good alignment with the requirements of a UK DNO in 2023.
Delivery Capability		<ul style="list-style-type: none"> • Further consideration of issues –There are some evidential gaps in the strategic direction around data sharing and more consideration required of the complexities of a cloud strategy. • No prioritisation of projects – We believe that it is important that the portfolio of projects is prioritised. We accept that the ERP theme would be most likely deemed ‘mandatory’. However, there are other projects which could potentially be postponed if NIE Networks faces unanticipated constraints.
Timely Delivery		<ul style="list-style-type: none"> • Resilience to external policy change – there is an absence of a mechanism to adjust for any plausible future policy changes. • The absence of planned interim architectures/milestones leading to reduced confidence that there are sufficient programme controls in place. • Gaps in capability mapping – the degree to which some capabilities are mapped to the target architecture could be strengthened, particularly business capability.
Determination of efficient costs		<ul style="list-style-type: none"> • N/A

3.3 SCOPE

3.3.1 Assessment criteria for Scope

We assess the **Appropriate Scope** of the IT Strategy using three tests:

- **Scale** – The quantum of investment in relation to history of the organisation and broad apportionment of investment around the technology themes.
- **Alignment** – The degree to which there is alignment to the obligations of a GB/NI distribution utility in 2023.
- **Line of Sight** – The integrity and clarity of the ‘golden thread’ which runs from the strategy into the project briefs and establishes a priority for the projects and themes.
- **Priority** – The degree to which the strategy sets priorities for investment expenditure in relation to the phasing of projects.



3.3.2 Scale

In this section we examine the quantum of investment in relation to history of the organisation and the broad apportionment of investment around the technology themes.

This is a very large and ambitious IT programme. NIE Networks describe it as *transformational* and a *step change in the level of investment required*². By way of illustration, during RP6, NIAUR awarded NIE Networks³ c. £28.4m CapEx and c. £31.6 m Recurring OpEx – a total of c. £60M. In RP7, NIE Networks seeks an equivalent of investment of c. £189M: over 3 times the size of the RP6 investment. The ERP technology theme alone requires c. £75M of RP7 expenditure which is more than the combined RP6 total. The ERP programme dominates investment in this price control and the size of the programme, in investment terms, is unprecedented from the perspective of NIE Networks. The scale of the programme may therefore lead to a higher risk profile, particularly where project interdependencies and uncertainties may influence the planned roadmap.

With this in consideration, the fact that SAP replacement must be conducted in parallel with all the other projects inevitably leads to a required investment at an unprecedented scale from the perspective of the NIE Networks. This fact alone makes us cognisant of the inherent delivery risk and the corresponding potential for customers to lose value. Therefore, we have sought features in the strategy that demonstrate to us that, for example, NIE Networks can share its deep understanding of the different stages in the architectural roadmap, that the themes and projects are prioritised and that NIE Networks can manage external policy changes efficiently.

NIE Networks helpfully compared its level of funding with that of the GB DNOs as part of the RIIO-II price control regulated by Ofgem⁴. NIE Networks compared it with equivalent levels of investment in other DNOs whilst adjusting for some differences between the two jurisdictions. The levels of IT related costs requested are comparable with some of the larger GB DNOs, such as Scottish and Southern Energy Networks (SSEN). We recognise the arguments in favour of this level of funding and, in this section, are not concerned with them. We are only highlighting that the comparator DNOs are substantially bigger than NIE Networks. For example, SSEN has 4000 employees and 3.8M connections. NIE Networks has 1400 employees and less than 1M connections⁵. Arguments can be made that the relative size of an organisation can be beneficial or detrimental to a successful IT programme. However, it our view that larger DNOs will likely be more resilient during implementation as they have more resources to call upon during implementation and have comparatively more experience of delivering major change.

3.3.3 Alignment

We recognise that across the GB DNOs, there is an emphasis on building digital capability, maintaining cyber security, sustainability, and the opportunities inherent as a Distribution System Operator. NIE Networks' IT strategy includes these

² NIE Networks RP7 Digital and IT Business Plan p 79

³ RP6 Final Determination NIAUR

⁴ NIE Networks RP7 Digital & IT Business Plan p82

⁵ <https://www.nienetworks.co.uk/about-us>



as ‘themes’ and is in this respect aligned to the GB DNOs and to themes which are also accepted by Ofgem. We note that NIE Networks make this point⁶ after doing its own comparison analysis of GB DNOs.

The IT Strategy predominantly describes a steady state model, within and against an environment of profound change. Most of the IT projects in this price control period address infrastructure upgrades and/or replacement technologies; with SAP ERP replacement a critical programme theme over the RP7 period. As much of the IT Strategy is focused on upgrades to tools and systems, we consider this as evidence that the IT Strategy aligns with NIE Networks’ obligations as a licensed distribution utility.

3.3.4 Line of sight

Whilst fundamentally the content is sound, some of NIE Networks’ IT objectives lack fidelity. In particular, the business context section is not as aligned to the overall Digital Strategy as strongly as we would expect; it is a mix of some of the themes in the Digital Strategy and some wider issues. In an enterprise level strategy, it would be typical to see an organisation sub-divided into capabilities and the technologies required to support those capabilities would also be identified or grouped. In our view, the strategy documents do not set out the business context in a way that success against an overall plan could be measured.

In its current form, the document makes the statement that the IT Strategy acts as a strategic umbrella, but it is challenging to link the strategy to the business objectives in a quantitative and measurable form.

“The IT Strategy is the strategic umbrella document which is underpinned by the other strategies listed above. [IT, Cloud and Cyber, Digital Strategies] The Digital and IT Business Plan and Roadmap has been developed with these core strategies in mind to ensure we are leveraging the full value of digitalisation whilst assuring the success of our common business objectives. The RP7 Digital and IT Business plan outlines the key programmes of work to be delivered over the RP7 period.”

If we consider the *table,4.1.1 of the Digital Strategy, Pages 17-18 ‘Shaping the future Experience of our customers’*. The strategy outlines both a current and future state. It is our view that the IT Strategy could be made clearer if the high-level benefits of the future state were also described. It would also strengthen the evidence aligning the benefits of building the capabilities to the commensurate technology choices and implementation projects. This would inform the overall associated cost benefit analysis.

This would be an improvement that is consistent with the review from a bottom-up project level, where a weak or broken Line of Sight or “golden thread” to tangible benefits misses out on articulating the material value to consumers. The impact of this weakness is perhaps less material within the context of many technology projects proposed within this RP7 price control (because a large portion of projects replace or upgrade existing technology), but it is an important recommendation for those projects building new capability (such as elements of the DSO and Digital Transformation themes) and for NIE Networks to consider for future submissions.

⁶ NIE Networks RP7 Digital and IT Business Plan p 45



The IT Strategy alone was unable to present a clear view of the programme's critical path during the RP7 period. There would be significant value in a structured portfolio presentation that shows this over time alongside the architecture roadmap.

3.3.5 Priority

We have not seen clear evidence of NIE Networks prioritising *between* its IT investment choices nor its IT investments being prioritised *relative to* other investments.

Within the 99 IT projects, we acknowledge that those within the ERP theme that deliver SAP replacement are likely to be deemed mandatory. However, many other projects are likely to be significantly less important in comparison and, in our view, should be prioritised relative to each other. We note that, for some of the IT Themes, a simple Pareto analysis reveals that the investment is concentrated in comparatively few projects. For example, in the DSO Transition theme, c. 50% of the investment is in two out of eighteen projects, with c. 80% of the investment in only six of the eighteen projects. It would be reasonable to assume that, on the average, larger projects are more 'important' than smaller ones as size of benefit is likely to be positively correlated with size of investment. Conversely however, a small project may in fact be in the critical path to larger projects or provide very large benefit despite its relatively small size. This reinforces our view of the importance of prioritisation across the portfolio. In addition, having fewer projects (or a pool that are lower priority) may simplify the programme considerably.

NIE Networks could chose an appropriate methodology to prioritise projects, which would help ensure that finite resources are not exceeded. Some UK DNOs, such as UKPN⁷, have described their methodology, and this may be helpful for NIE Network when it develops its own methodology in the future.

3.4 ARCHITECTURAL COMPLETENESS

3.4.1 Definition and criteria

We assess completeness by examining if key elements of the enterprise architecture are clearly articulated and understood. In this section we highlight where the descriptions of the architectural components can be strengthened.

- **Capability** – the degree to which capabilities are mapped to the target architecture.
- **Interim Architecture** – how the absence of interim architectures leads to risk.
- **Data** – the specific issues around data privacy
- **Platform (cloud)** – the strategy of moving to the cloud.

⁷ RIIO-ED2 Business Plan 2023 – 2028 Appendix 17a Digitalisation Strategy



3.4.2 Capability

Whilst there are multiple ways of defining capability, in an IT context, if we apply a TOGAF (The Open Group Architecture Framework) explanation, we expect a response that aligns to the following:

“A business focused outcome that is delivered by the completion of one or more work packages. Using capability-based planning approach, change activities can be sequenced and grouped in order to provide continuous and incremental business value.”⁸

NIE Networks has mapped skills and resource capabilities to a significant level of detail which is evidenced in UR0298. However, to strengthen the analysis further, it is our view that the business architecture should also be mapped to the functional needs of the organisation and to a similar level of detail. For example, following the TOGAF methodology, the IT Strategy should identify, categorise, and decompose the business capabilities to identify what needs to be done by the business in support of its overall vision and ultimately bring value to customers and internal stakeholders. In its current format, capabilities are given limited consideration and appear later in the IT Strategy document, [Ref: 4.14 page 36]. The absence of comprehensive capability mapping means there is a ‘less clear’ picture of the organisation, its functions and systems. We recommend that this section be brought forward and expanded – elucidating how the business challenges impact the organisational capabilities and therefore impact in turn on the application architecture [Ref 4.24, page 38]. By providing this additional evidence, it would bring to life how the individual projects in the programme support the business and how, at a business architecture level, they are tied together.

3.4.3 Interim Architectures

As a consequence of the IT Strategy setting out the target architecture, we would expect a clearer set of interim objectives and/or architectures to which the strategy would align and deliver against over the course of the RP7 period. NIE Networks has confirmed that it intends to develop and implement the architecture roadmap aligned to TOGAF *vis a vie*.

[QR UR0298] – “To ensure that all of the programmes of work are implemented in the most coherent and cost-effective way there will be a requirement to engage an experienced consultant to assist NIE Networks to undertake an initial review of the high-level target state position and develop a detailed architecture roadmap for the implementation of the services.”

We consider this to be a sound approach in preparation for delivery. However, we would have expected one of the strategy artefacts to contain high-level **interim** architecture plans. Given the extensive co-dependency between projects, including interim architectures, this would increase our confidence in the viability of the programme and its delivery.

3.4.4 Data

In the description of the Open Data theme, NIE Networks works on the assumption that all data is 'open'. We note that this use of data must be aligned to GDPR and the regulations surrounding ‘Personally Identifiable Information (PII)’. It follows that NIE Networks should ensure that it considers tools for identifying PII within (for example) data sets, data

⁸ *The TOGAF Standard – Version 9.2, (2018)*, The Open Group, Page 301



classes and governance. We would have expected some strategic direction on the use of open data standards for data sharing.

3.4.5 Platform (Cloud)

We note that some of the RP7 projects will move from on-premises applications to Cloud. The move to Cloud-based applications entails a big shift in the way applications and services are designed, built and run. This requires significant effort and changes to staff technical skills.

We noted that NIE Networks considers that the transition will require the IT team to “*develop new skills to manage a hybrid environment*”. However, this effort should not be underestimated. A skills capability matrix alongside a resource development and a resource planning matrix would have helped build confidence that such operational capability requirements are managed effectively over the implementation or integrations periods.

3.5 RESILIENCE

3.5.1 Introduction

In this section we assess if the strategy is resilient to plausible policy and other changes in the external environment, with specific reference to two examples.

- **Smart Metering and wider policy changes** – resilience to the introduction of electricity smart metering in Northern Ireland and other policy changes.
- **The evolution of DSO** – the evolution of best practice within this emerging technology and the distribution of responsibility between the TSO and DSO.

3.5.2 Smart metering and wider policy changes

NIE Networks excluded SMART from its RP7 submission (as formally agreed with NIAUR). We can confirm that prior planning for smart metering has not factored into our analysis of the submission. However, once the decision to proceed with smart metering had been made, NIE Networks acknowledged in response to a query that the proposed IT programme would be significantly affected.

Given, at the time of submission, the reasonably high likelihood of a policy change and its significant impact, it feels remis not to incorporate some element of resilience to other potential policy impacts into one the strategy artefacts. By this, we do not mean submitting a complex ‘parallel plan’, rather a general mechanism by which consequential changes to the programme caused by policy change could be assessed. For example, it might have been prudent to allow the Digital Strategy and IT Strategy to manage the critical step of impact assessment and governance of future policy changes – identifying how NIE Networks’ might approach an impact assessment (for example a re-assessment of skills). We consider that it would be important for such a mechanism to be able to draw upon information regarding the priority of the projects or themes.

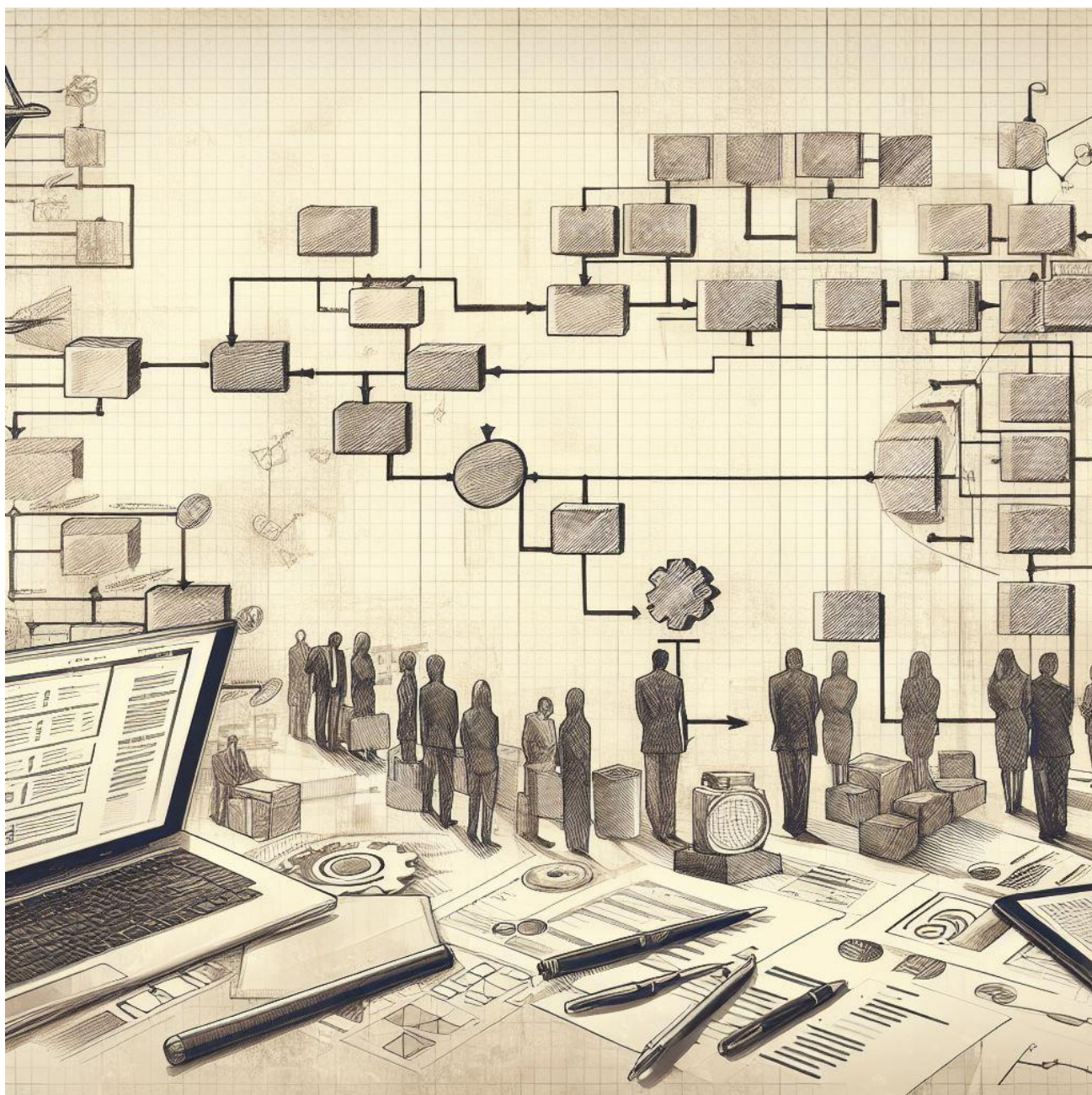


3.5.3 DSO evolution

There are other areas of the programme which may be impacted by uncertainties in the policy environment, such as the required DSO capability. The transitional approach to DSO will require some fundamental and wide-scale changes to operations, systems, and data. Consequently, we consider that the DSO Strategy could have included an assessment of external factors that could change the speed and direction of development. Arguably, the DSO strategy could also have been bolder in its technology objectives.



PROGRAMME

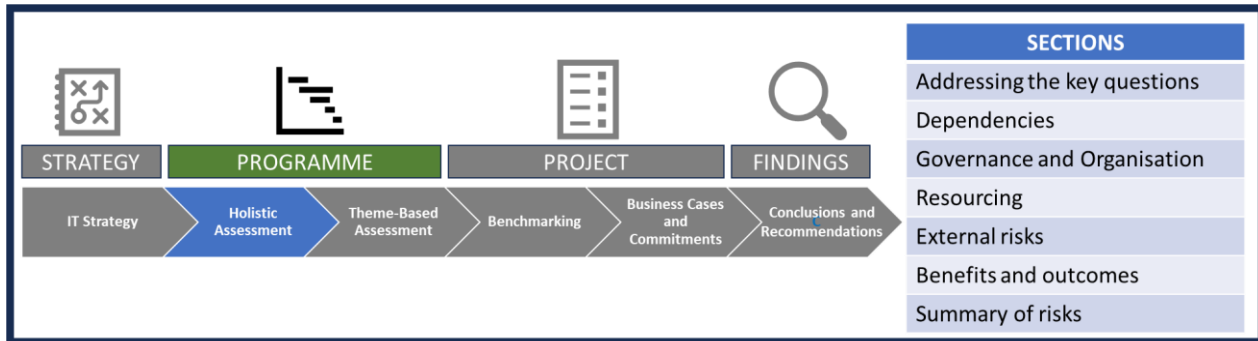




4 PROGRAMME - HOLISTIC ASSESSMENT

4.1 INTRODUCTION

Figure 8 – Programme holistic assessment and corresponding sections



In this section we examine the factors at the overall programme level. They include the governance and organisation of the programme, the dependencies between projects, how the programme is resourced, how external risks are managed, and the benefits and outcomes from a programme perspective.

4.2 ADDRESSING THE KEY QUESTIONS

The table below summarises at a high level how the holistic programme perspective has contributed to our assessment of the key questions.

Figure 9 - Addressing the key questions from a holistic programme perspective.

Question		Description
Appropriate Scope		<ul style="list-style-type: none"> N/A
Delivery Capability		<ul style="list-style-type: none"> Multiple SI procurements may lose value over a single source decision - Given the major focus on the SAP S/4 HANA programme and the direct connection to, and dependencies with, many other projects, any additional SI procurements will probably deliver little value over using a single SI for SAP and connected projects. Risks - We identified several risks to customer value
Timely Delivery		<ul style="list-style-type: none"> The management of external risks has not been considered - From a programme perspective we note that there is no consideration of the impact of external risks.. The programme will require many resources from multiple organisations over many months and years and must be carefully managed - to complete the programme, including backfilling programme-seconded resources, NIE Networks' staff (and third-party resources) may naturally move to different roles outside of the organisation requiring ongoing, carefully managed, and controlled resource management. Complex and interdependent programme - Our illustrative dependency analysis confirms how complex and interdependent the projects in the programme are.
Determination of efficient costs		<ul style="list-style-type: none"> The complex programme underlies the importance of benefits tracking so that benefits are not lost - Several projects do not have clear outcomes or benefits against them and there is a risk that as changes occur the value that these projects would have delivered may not be tracked or lost.



4.3 DEPENDENCIES

4.3.1 Introduction

The programme comprises a busy and ambitious portfolio of projects. The ERP theme, measured as c 40% of the total investment, is a significant part of the programme⁹. However, it is the dependency of the projects within the ERP theme on each other and, in turn, their dependency with other portfolio projects that speaks to the overall degree of dependency and complexity within the programme. In this section we describe the analysis of dependency information provided by NIE Networks.

4.3.2 Analysis

To understand the reliance to SAP, we examined the dependencies between projects. The matrix has a horizontal and vertical axis which both comprise the list of 99 projects separated into their respective themes. Each cell in the table therefore shows the dependency between two respective projects in the programme by way of a coloured square. The key to the colours is described in Figure 11.

Figure 10 – Extract from NIE Networks Project Dependency Matrix

		#####															#####			
		Digital Transformation																		
ID		AM13	CON03	CUS03	DIG01	DIG02	DIG03	DIG05	DIG06	DIG07	DIG08	DIG09	DIG10	FIN06	HR01	HS02	HS03	MOP09		
Digital Transformation	AM13										3									
	CON03										3									
	CUS03										3									
	DIG01																			
	DIG02																			
	DIG03																			
	DIG05																			
	DIG06																			
	DIG07																			
	DIG08																			
	DIG09																			
	DIG10																			
	FIN06																			
	HR01																			
	HS02																			
HS03																				
MOP09																				
	AM14																			
	CUS08																			
	CON03																			

Figure 11 – Colour coding key used in the NIE Networks Dependency Matrix.




Key to the Map	
	Indicates a dependency or scheduling considerations between 2 projects - within a Programme Theme. The Comment feature is used to describe the relationship.
	Indicates a dependency or scheduling considerations between 2 projects - between Programme Themes. The Comment feature is used to describe the relationship.
	Indicates projects which have no significant dependencies or scheduling considerations
	Indicates multi-year projects which will need to be scheduled on an annual basis to accommodate detailed schedules of other projects.
	Indicates project dependency with itself and is ignored
	Ignored

⁹ ERP theme measured as a fraction of RP7 CapEx and OpEx and RP6 extension CapEx.






Gemserv looked at whether the information in the Project Dependency Matrix could be simplified to better convey the dependencies. In doing this analysis we ignored dependencies associated to projects that must be scheduled on an annual basis (purple-coloured squares) because this was too complex to model. The outcome of this simplification and consolidation analysis is shown in Figure 12 below.

Figure 12 – Consolidated Dependency Matrix

	Digital Transformation	DSO Transition	ERP	Open Data	Secure and Stable	Sustainability
Digital Transformation	12%	6%	 56%	16%	18%	0%
DSO Transition	6%	33%	11%	32%	3%	0%
ERP	 53%	50%	 100%	26%	24%	0%
Open Data	18%	50%	11%	53%	15%	50%
Secure & Stable	35%	28%	22%	26%	6%	100%
Sustainability	0%	0%	0%	5%	6%	0%

The Consolidated Dependency Matrix shows the extent of the dependencies between projects within a theme and between projects that are in different themes. In the interaction between any two themes a single project in one theme can be dependent on several projects in the other theme and vice versa. This can be understood by reference to the green and red arrows above which show different values (53% and 56% respectively). This reflects the asymmetric respective dependencies between (for example) projects in the Digital Transformation Theme and the ERP Theme. The yellow arrow points to an example of self-dependency (in the ERP theme).

Figure 13 - Dependency insights

Arrow	Theme Dependency	Projects Affected	Description
	ERP self-dependency	ERP projects	All ERP projects are dependent on another ERP project
	Digital Transformation and ERP	Digital Transformation projects	53% of Digital Transformation projects are impacted by the relationship between Digital Transformation and ERP,
		ERP projects	56% of Digital Transformation projects are impacted by the relationship between Digital Transformation and ERP,

Using this supporting analysis, we have inferred that:

- **There is a significant interdependency between projects within some of the themes** – In particular, the projects contained respectively within ERP, Open Data and DSO transition exhibit a significant dependency between them. This is likely to raise scheduling challenges within these themes.
- **There is a significant interdependency between ERP projects and projects within other themes** – All of the ERP projects interact with digital transformation and DSO transition projects and about one quarter interact with Open data and secure and stable IT systems themes.



- **There is a significant interdependency between the themes within the programme** – notwithstanding ERP, there is a significant dependency between projects within the other themes. In other words, even if ERP were to be removed, there would still be significant interdependency between the remaining projects.

4.3.2.1 Risk PRH1 - The risk of unintended consequences arising from complex programme dependencies occurring without tools such as prioritisation matrices to inform corrective action.

Given the complexity of the IT delivery, there is a high likelihood that the programme schedule will inevitably face several challenges over its multi-year duration.

The clear interdependencies within the programme mean that that there are many projects that depend on the progress of projects in the ERP theme. Consequently, there is a greater risk of programme slippage due to conflicts and inconsistencies.

The IT Strategy alone was unable to present a clear method to prioritise projects alongside their associated themes and we have limited insight into the planning stage gates, critical path and what or how decisions might be made should these conflicts arise.

4.4 GOVERNANCE & ORGANISATION

Ultimately, NIE Networks has recognised that it will require a market-leading Systems Integration organisation to undertake the major SAP S/4 HANA implementation. There are a range of recognised experienced SAP Partner System Integrator (SI) organisations that would be qualified to support NIE Networks to undertake this work. NIE Networks has also identified other projects, several with direct integration with the SAP platform (such as DIG01 Customer Engagement Platform), which will also require System Integrator support. NIE Networks has indicated that this will be subject to a competitive procurement.

We have identified two risks associated with the procurement and management of multiple SIs:

4.4.1.1 Risk PHR2 - The risk of incurring unnecessary procurement costs and poor value SI support

Given the major focus on the SAP S/4 HANA programme and the direct connection to, and dependencies with, many other projects, we perceived these additional procurement exercises to deliver little value over using a single SI for SAP and connected projects. This is because;

- **There are weak incentives to collaborate** - There is a risk that multiple Systems Integrators may not collaborate well on such a major programme as they pass the blame to another party for any problems or delays and compete for additional revenues available as the programme evolves; and
- **There is the potential for duplication of effort and a likelihood that unnecessary procurement costs will be incurred** - There is duplication of SI management overhead both on behalf of NIE Networks and the multiple SIs as well as the cost and effort associated with managing a potentially complex procurement of multiple SIs.



4.4.1.2 Risk PHR3 - The risk of mis-apportionment of costs between areas of the business

UR138 highlights which business is paying for the project costs and where these costs are split. However, it is unclear how the IT costs will be approved, managed and controlled, particularly if there are potential change requests to the 99 projects

4.5 RESOURCING

The projects will require many NIE Networks' staff from across its business who may need to be released from their operational responsibilities, necessitating the backfilling and streamlining of many of these roles. UR0298 states the level of business resources required by the programme. It is our view that these represent a relative high percentage of the business that could impact BAU operations and/or Programme delivery, e.g., over 12 resources from Finance are required in 2027/28 most of which need to be backfilled.

4.5.1.1 Risk PRH4 - There is a resourcing risk around recruitment, backfill and attrition of staff (Operation)

This risk pertains to staff operating in a project rather than a line role and the requirement to integrate these staff back into the business after the programme is complete. Additionally, the programme will require many resources from multiple organisations over many months and years to complete the programme, including backfilling programme-seconded resources. There is an attrition risk in that NIE Networks' staff (and third-party resources) may naturally move to different roles outside of the organisation and the associated need for on-going, carefully managed and controlled resource management.

4.6 EXTERNAL RISKS

4.6.1.1 Risk PRH5 - There is a risk that the programme is vulnerable to the impact of reasonably foreseeable external impacts

We recognise that NIE Networks has completed impact assessments to identify risks. However, we note that external policy risks on the programme were not included. The potential for external risks to impact such a large and complex programme during the many years of its operation are significant. NIE Networks should thoroughly assess these potential external risks and consider how such risks can be managed. We have also considered this topic at a strategy level.

4.7 BENEFITS & OUTCOMES

The programme needs to have clear, traceable outcomes and benefits to be delivered so this can transcend ongoing changes. Whilst benefits are considered in detail later in this report, the two risks that emerge from this section are given below.

4.7.1.1 Risk PRH6 - The risk of losing benefit trackability in a landscape of internal organisational changes.

A large programme spanning several years must inevitably navigate organisational change. For example, there are likely to be changes in management structures and leadership. Several projects do not have clear outcomes or benefits against them. Our view is that there is a risk that as such changes occur over time, the understanding of the value that some



projects bring may erode. It is important, therefore, that projects are tracked in terms of their value and benefits they bring to customers and to the organisation. Benefits are also discussed at a project level within Chapter 7.

4.7.1.2 Risk PRH7 - The risk of delays to benefit realisation.

NIE Networks has not identified the benefits of all the projects within the programme. Whilst some of these projects are essential for Business as Usual (BAU) activities, several will provide other benefits. In the response UR0096, which relates to 'AM01 – Portfolio Update' and UR0100 relating to 'AM12 – Visual Data Management#', we asked if these projects could be delivered earlier to provide earlier benefits. NIE Networks stated that this was not possible as the schedule had been set for the whole RP7 programme and there was not the flexibility to accommodate this.

4.8 SUMMARY OF RISKS FOR PROGRAMME - HOLISTIC

Through numerous project interdependencies, this is a relatively inflexible programme that has not sufficiently considered the impact of risks such as external policy change, resourcing and multiple SI procurements and requires more robust benefit descriptions and tracking.

Table 3 - Programme (holistic) risks

No	Project / Question Ref	Headline
PRHR1	General	The risk of unintended consequences arising from complex programme dependencies occurring without tools such as prioritisation matrices to inform corrective action.
PRHR2	General Implementation	The risk of incurring unnecessary procurement costs and poor value SI support.
PRHR3	UR138 Operation	The risk of mis-apportionment of costs between areas of the business.
PRHR4	General	There is a resourcing risk around recruitment, backfill and attrition of staff
PRHR5	General	There is a risk that the programme is vulnerable to the impact of reasonably foreseeable external impacts
PRH6	General	The risk of losing benefit trackability in a landscape of internal organisational changes
PRH7	AM12 / AM01 UR0096 / UR0100	The risk of delays to benefit realisation



5 PROGRAMME: THEME-BASED ASSESSMENT

5.1 INTRODUCTION



Table 4 - IT Programme Themes

NIE Networks' IT Programme Themes	
1	Digital Transformation
2	DSO transition
3	Enterprise and Resource Planning
4	Open Data
5	Secure and Stable IT environment
5	Sustainability

The NIE Networks programme is divided into six themes.

In this section, we describe the scope and strategy context for each theme. We then provide a commentary describing the key risks to customers associated with the projects in each theme.

5.2 ADDRESSING THE KEY QUESTIONS

The table below summarises at a high level how the programme theme perspective has contributed to our assessment of the key questions.

Figure 14 - Addressing the key questions from a programme theme perspective.

Question		Description
Appropriate Scope		<ul style="list-style-type: none"> Projects do fall in scope of what we would expect from a DSO - they are also consistent with overall DSO Strategy.
Delivery Capability		<ul style="list-style-type: none"> Reasonable cyber security investments - We have undertaken a high-level assessment of cyber security consistent with our scope to understand if the associated costs are reasonable. From the useful information in the submission provided by NIE Networks, we believe that the IT investments that specifically relate to Cyber Security are reasonable. In Digital Transformation, customer projects are broadly aligned to customer benefit - although we see no imperative to necessarily undertake these at the same time as core projects.
Timely Delivery		<ul style="list-style-type: none"> DSO is not a mature function - The DSO Strategy and the scope of the DSO Transition projects have been defined at the very early stages of the industry movement to DSO principles and network flexibility.

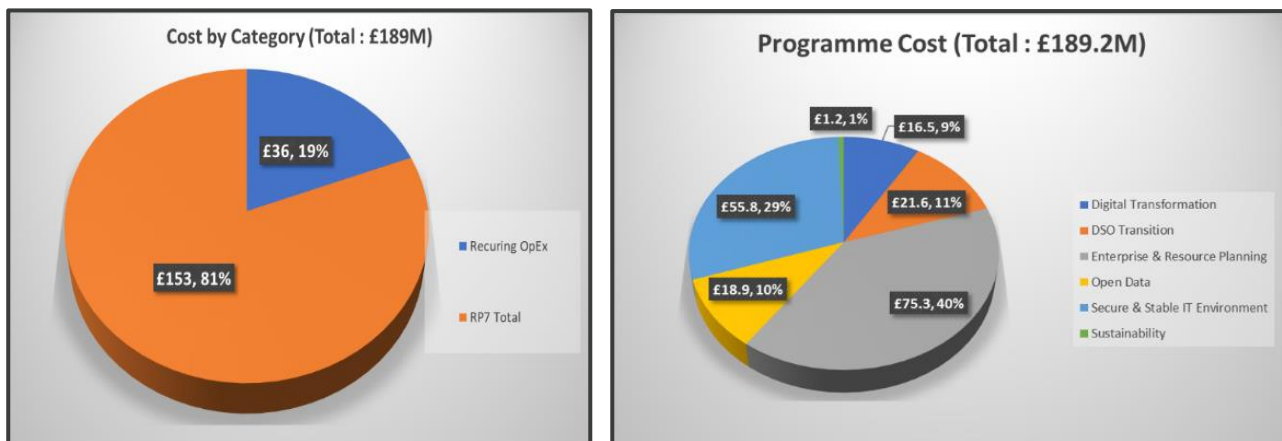


Question		Description
		<ul style="list-style-type: none"> • Risk of stranded investment in respect of the DSO - NIE Networks appears to recognise the potential for unanticipated developments in the DSO space. We highlight the key scheduling and investment risks associated with smart metering and other potential developments. • Risk of delay in the ERP theme is significant – There is a risk that the end-to-end design and the high-level of interdependencies will cause delays. However, the case for SAP replacement is robust. • Uncertainty in costs - NIE Networks raised concerns about the certainty of some ERP costs and asked for several price control reopeners. We understand from NIE Networks that the scope of these costs is limited to one SAP project, but nevertheless, this does not drive confidence in this aspect of the programme planning.
Determination of efficient costs		<ul style="list-style-type: none"> • The complex programme underlies the importance of benefits tracking- Several projects do not have clear outcomes or benefits recorded against them and there is a risk that as changes occur the value that these projects would have delivered may not be tracked or return of investment lost. • The submission would benefit from more detail and clarity around NIE Networks’ corporate approach to cyber security - we have made a few suggestions in the report for NIE Networks to consider in any future resubmission. • Risk of stranded investment in sustainability projects - Whilst the scope of the investments is reasonable, there is a risk of proposed solutions being replaced by other industry developments. • Benefits not clear in several areas - There is a risk of not achieving clear value for customers in respect of the sustainability projects; we would welcome greater clarity on data integration middleware benefits and conflicting programme governance processes. In respect of digital transformation, we identified more risk in the business and employees’ related projects than the customer related projects.

5.3 PROGRAMME LEVEL SUMMARY

The total cost of the programme is c. £189M, comprising c.80% RP7 Costs and c. 20% Recurring OpEx. Of this investment, the largest theme is the ERP and the replacement of SAP, which is close to 40% of the total programme expenditure, with the next largest category (c. 30%) being the Secure and Stable IT Environment (which includes cyber security). Together, these two themes make up c. 70% of the total programme expenditure.

Figure 15 - Cost breakdown analysis for the programme



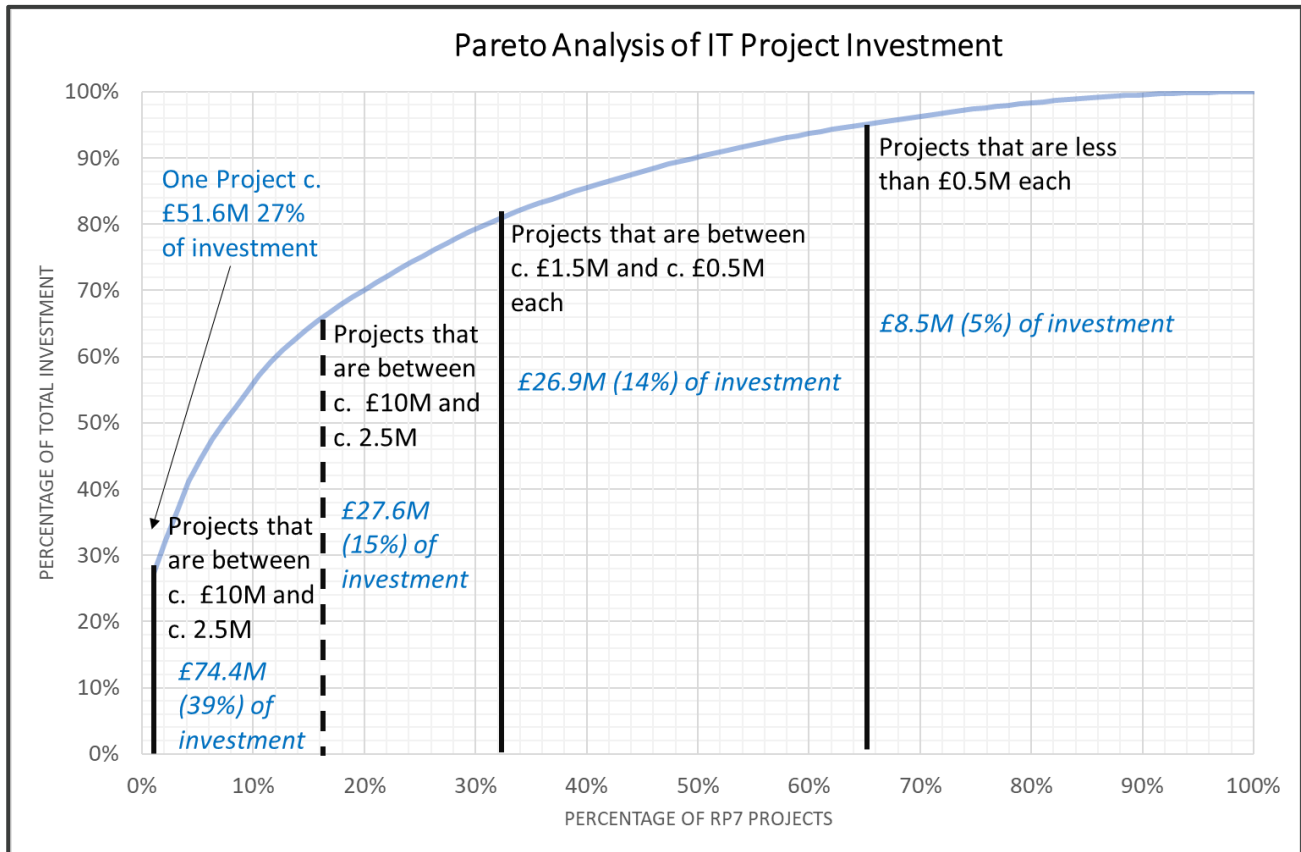
We completed a simple Pareto analysis of all projects (Figure 16) with RP7 expenditure. This reveals the spread of project investment across the portfolio cost envelope. For clarity and simplicity, we chose to use only the RP7 OpEx and CapEx



figures and ignore recurring OpEx and RP6 costs. This is because we are just attempting to illustrate a principle and not recommend an allowance.

- 50% of the total expenditure is less than 10% of all projects.
- 80% of total expenditure accounts for less than one third of the projects.
- This means that about two thirds of the projects account for 20% of the expenditure.

Figure 16 - Pareto Analysis of All RP7 Projects



5.3.1 Commentary

Alongside the dependency analysis, the Pareto analysis paints a picture of a highly complex programme of interdependent projects. If we assume that the degree of customer benefit (or avoided disbenefit for replacement programmes) correlates with size of investment, then it follows that benefit may be focussed in a relatively small part of the programme portfolio. The inference we draw from this is that it is important to protect the critical path of delivery and a prioritisation methodology would assist with important decisions that may need to be taken to simplify the portfolio at key decision points in delivery, avoiding delays to core programme progress and in turn to protect the core benefit realisation and return of investment.



5.4 DIGITAL TRANSFORMATION

5.4.1 Scope

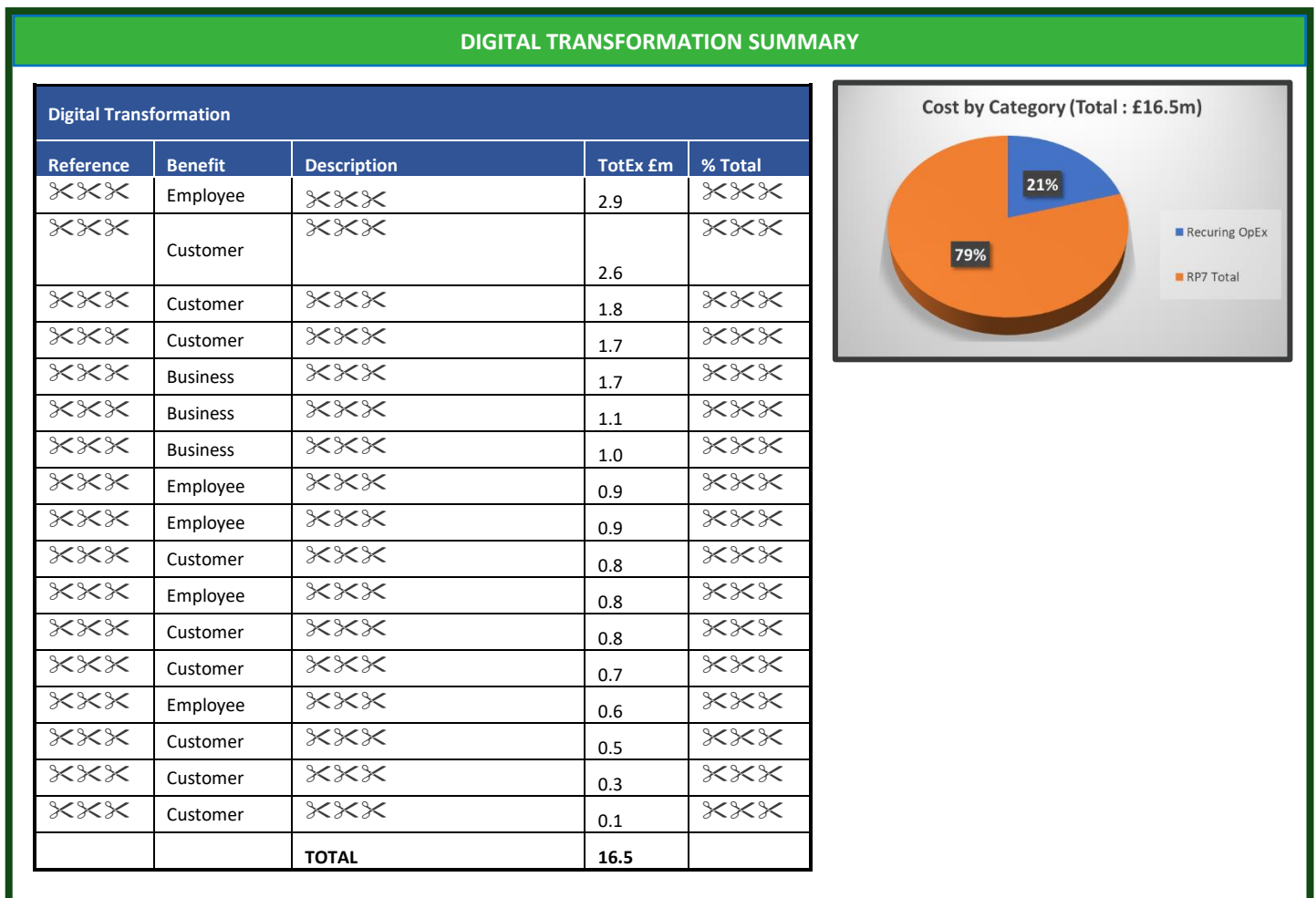
The projects categorized as part of the Digital Transformation Theme are required to enable the Digital Strategy in the RP7 period. These comprise the projects identified as 'DIG' plus eight other additional projects, as identified in the following table.

The projects within this theme appear to fall into one of 3 types:

1. **Customer** - Improving the Digital experience for customer (48% of total expenditure).
2. **Employees** - Improving the Digital experience for employees (33% of total expenditure).
3. **Business** - Improving Digital operations of the business (18% of total expenditure).

There are 17 projects in Digital Transformation with RP7 costs of circa £16.5m. Of this expenditure, about 47% is aligned to just four projects.

Figure 17 - Digital Transformation Summary





5.4.2 Strategy Context

The NIE Networks Digital Strategy states that:

Our vision is to embrace digitalisation and build a workforce that is empowered to deliver a sustainable energy system, a market-leading customer experience and engagement across all stakeholders

To achieve this, NIE Networks intend to use digital tools and techniques to ‘provide a seamless service experience’, ‘market-wide collaboration’, and are ‘modernising and improving internal processes’ to quote a few relevant examples.

5.4.3 Commentary

We have divided our commentary into three areas that align with the beneficiaries.

5.4.3.1 Digital experience for **customers**

The projects of this type include:

- CON03 Online Quotes for Small Connections Jobs
- DIG01 Customer Engagement Platform
- DIG05 Automated Messaging
- DIG06 Customer Contact Enhancements
- DIG07 Customer Self-serve portal
- DIG10 Vulnerable Customer
- HS02 Public Awareness VR Technology
- HS03 Public Safety on-line interactions
- MOP09 Tariff Reform

Broadly, all the projects listed that are aimed to improve the digital experience for customers are soundly based with clear benefits to customers. Several projects, such as ‘HS02 Public Awareness - VR Technology’ and ‘HS03 Public Safety on-line interactions’ have the potential to alter customers’ perception of NIE Networks in a positive way for modest cost. However, we see no imperative to undertake these at the same time as core projects where there is a compelling business imperative.

We understand from NIE Networks’ response (UR0115) that DIG01 Customer Engagement Platform (£X X X) is required because the new S/4 HANA platform (FIN01) does not provide ‘the same functionality to facilitate the current customer interaction process’. It follows that DIG01 is therefore integral to the Enterprise and Resource Planning work.

Further to this, we understand that ‘DIG07 Customer self-serve portal’ (£X X X) will allow customers to access to a range of services. It is recommended that this solution is tailored for the volumes of customers and the functions they access. For example, queries for Wayleaves information may have different volumes, frequencies, and types of requests than for queries for outage information.



5.4.4 Risks – Digital Transformation

5.4.4.1 Risk PRTR01 - There is a stranded investment risk for projects borne by the connections business (operation)

Some of the cost of the projects to improve the Digital experience for customers will be borne by the Connections business, e.g., CON03 Online Quotes for Small Connections Jobs (£<<<<). The Connections business should consider the cost, timing and longevity of these solutions given the large-scale changes of back-end systems such as the replacement of JMS with SAP S/4 HANA (FIN05) such that stranded investment can be avoided.

5.4.4.2 Digital experience for employees

The projects of this type include:

- CUS03 Project Management System
- DIG02 Digital Dashboards and Smart Reporting
- DIG09 Hybrid Workplace
- FIN06 Timesheet Reporting for indirects
- HR01 Mobile Timesheets Upgrade / Live Q Enhancements

Generally, the projects for the improvement of the digital experience for employees is a continuation of initiatives already started.

As NIE Networks verbally confirmed, the detailed business cases have not yet been developed at the individual project basis. We have therefore used the project briefs and other relevant information available to inform our review.

- CUS03 Project Management System, DIG02 Digital Dashboards and Smart Reporting, HR01 Mobile Timesheets upgrade and FIN06 Timesheet Reporting provide evidence of efficiency and / or quality of process improvements.
- We were unable to identify the efficiency and or process improvements in NIE Networks' query responses UR0121 and UR0153 regarding DIG09 Hybrid Workplace (£<<<<). Given the volume of work required in RP7 we suggest that the merits of this project need to be assessed through a clear cost benefit lens.

5.4.4.3 Risk PRTR02 - There is a risk that the highest cost project in this theme (DIG09) will not provide commensurate benefits.

When undertaking changes (including digital changes) to employee processes, or ways of working, we expect to see benefits in respect of improved efficiency and/or an improved quality measure that strengthens the business case. Clearly, moving to a digital process that did not deliver benefit or left NIE Networks in a worse position would not be in the best interests of customers.



5.4.4.4 Digital operations of the **business**

The projects of this type include:

- AM13 Electronic AMI Process
- DIG03 Process Automation
- DIG08 Digital Services Product Improvement

Projects not targeted at Customers or Employees involve general improvements to business operations.

5.4.4.5 **Risk PRTR03 - Risk of return of investment not being tracked or recognised through insufficiently evidenced business case (justification)**

AM13 Electronic AMI Process appears to have a clear justification of turning a paper-based process into a Digital Process. However.

- **DIG03 is 'undefined'** - From NIE Network's response UR0117, the scope of DIG03 Process Automation (£$\times\times\times$) the benefits have not been defined. In RP7, most of the IT enabled business processes will be enhanced or replaced with new and or upgraded solutions. This process improvement approach (outlined in DIG03) can be undertaken within several of the other RP7 IT projects. It is unlikely that key resources would be diverted to an alternative initiative, rather than focussing them on the core projects. This could result in duplication of effort and dilution of key skills.
- **DIG08 is 'undefined'** - From NIE Networks' response UR0152, the scope of DIG08 Digital Services Product Improvement (£$\times\times\times$) is 'not yet defined'. In RP7 NIE Networks is undertaking several major IT projects, and this Digital Services Product Improvement (outlined in DIG08) could be applied to several of them. We would recommend that NIE Networks reviews where RP7 projects could be combined with the method proposed in this project.

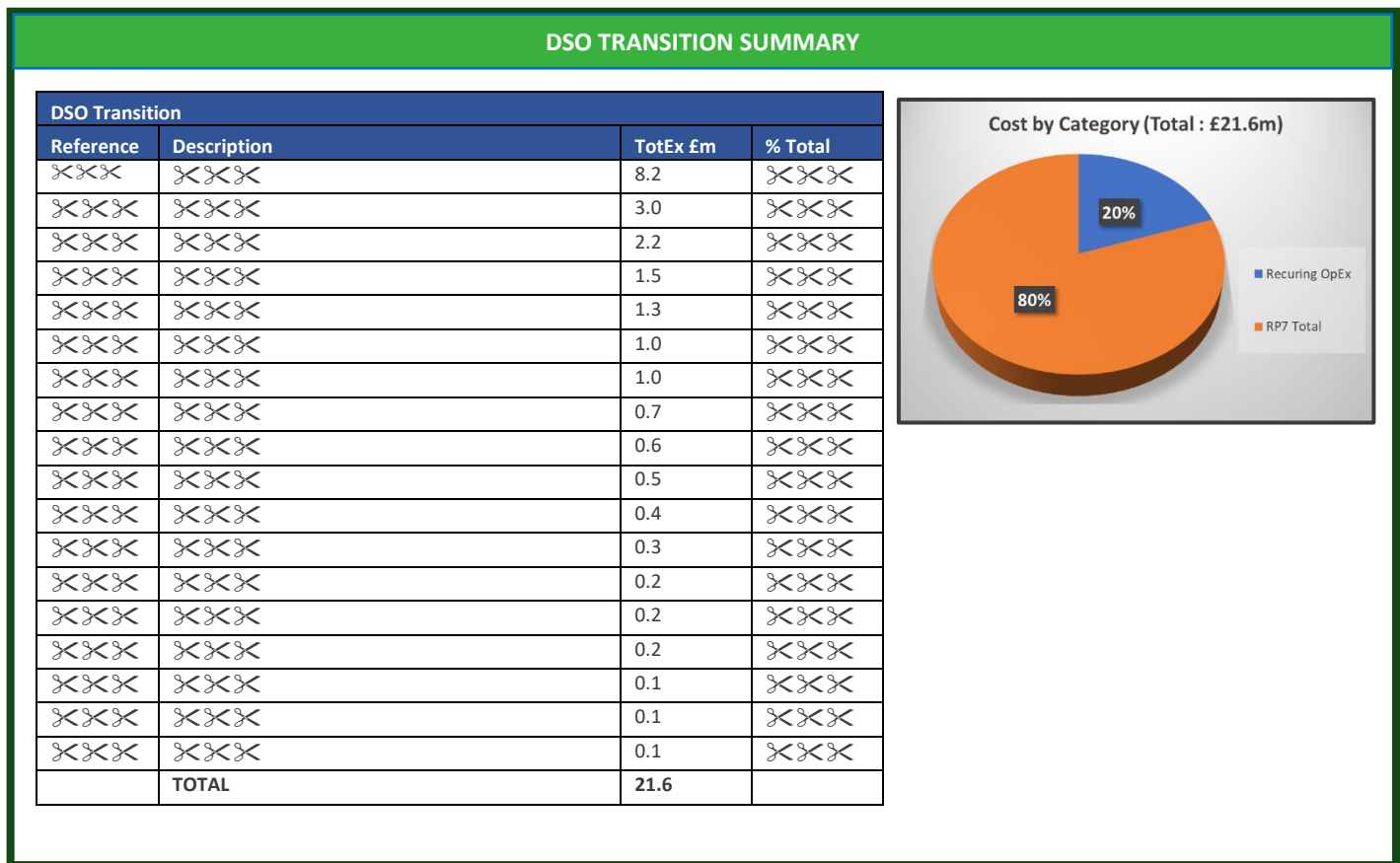


5.5 DSO TRANSITION

5.5.1 Scope

The projects categorized as DSO Transition are required to support and enable the DSO Strategy in the RP7 period. These comprise the projects beginning reference 'DSO' plus AM14 OTN Operational Support System (OTN), CUS08 Advanced Drone Survey Technology and NOP03 NMS Developments (as set-out in the table below). We can see that of the 18 projects, c. 50% of the expenditure is on just two projects with 6 projects contributing to c. 80% of the total.

Figure 18 - DSO Transition summary



The DSO Strategy also identifies other projects which are required to enable the DSO Transition such as DAT13 Data Management Platform and DAT14 Cloud Analytics Platform, which are part of the Open Data Theme.

5.5.2 DSO Strategy Context

NIE Networks has provided a mapping from DSO strategy deliverables to the IT projects, underlining the fact that not all the DSO strategy will be delivered by means of IT projects within RP7. NIE Networks also describes its intent to align with the TSO. From an IT perspective, this would be essential for efficient IT investment across both networks.



The IT projects identified within the RP7 period are broadly consistent with our high-level knowledge and understanding of the envisaged operation of a DSO and they appear to be consistent with overall DSO Strategy. For example, there is some obvious direct linkage, such as DSO12 HV Monitoring System linked to initiative DSO 1.4 Enhanced high-voltage (HV) monitoring.

The DSO Strategy and the scope of the DSO Transition projects have been defined at the very early stages of the industry movement to DSO principles and network flexibility. NIE Networks appears to recognise the potential for unanticipated developments in the DSO space, as set out below [Ref: NIE Networks RP7 DSO Strategy 2025 - 2031].

'We have put together this plan in response to our stakeholders' needs. While it makes sense today, it will be kept under review with adapted throughout this decade continuing to develop DSO in an iterative manner based on what our stakeholders tell us and what we learn. We will work with the UR to ensure that the price control has sufficient flexibility to respond to customers' needs and capture the benefits from technologies or other developments that are not yet known.'

5.5.3 Risks for Programme – Theme Based

Considering the emerging market and policy environment surrounding the future DSO, we highlight the key scheduling and investment risks associated with smart metering and other potential developments.

Managing risks associated to the implementation of smart metering:

5.5.3.1 Risk PRTR04 - The risk of significant disruption to the programme by smart metering, which supports the need to re-plan.

The DSO Strategy and the scope and timing of the 'DSO' projects was developed before the decision was made to introduce Smart Metering into the Northern Ireland electricity market. In response to *URQ0007 Smart Metering Impact on RP7 Digital & IT Programme* NIE Networks stated that enabling projects DAT13 Data Management Platform and DAT14 Cloud Analytics Platform would be '*very significantly*' affected by Smart Metering.

5.5.3.2 Risk PRTR05 - The risk of re-work falling beyond the RP7 period.

The DAT13 DAT14 projects are scheduled for early implementation in the price review period. Given the length of time for smart metering to complete its design phase, it is likely that these projects as initially scoped will be completed before then. It follows that the impact of smart metering will be future rework that is likely to be necessary beyond the RP7 period. The response to URQ0007 also states that DSO16 Enduring Flexibility Management System is also '*very significantly*' impacted by Smart Metering. However, this commences and completes much later in the RP7 period creating a risk that this major project may in and of itself be delayed and not completed in RP7.



5.5.3.3 Risk PRTR06 - The risk of nugatory investment (for example on LV monitoring)

The UK Government Department for Business and Industrial Strategy “Smart Meter Roll-out Cost Benefit Analysis (2019)” Page 54 identifies that Smart Meters will improve the monitoring of the LV network. This function is likely to overlap in some way with DSO11 LV Monitoring System. However, this LV Monitoring system project is complete in Year 4 and the Smart Metering roll-out in Northern Ireland will likely still be in the formative stages. It follows that this LV Monitoring project will be implemented before mass rollout and before the potential LV monitoring capability of *Smart Metering* will be available.

Risks associated to the resilience to other future developments:

5.5.3.4 Risk PRTR07 - Risk of unclear objectives leading to the potential for scope creep.

Some of the projects such as DSO02 Digital Twin (pilot) have, in our view, objectives that are not clear. There is therefore a risk that further unspecified activities could be in scope which could commence in RP7 but are not explicitly stated in the submission.

5.5.3.5 Risk PRTR08 - The risk of that the programme will not be resilient to future innovation.

We see two risks around additional funding required for the programme, and slippage of the programme schedule.

- **More funding** - The IT Projects do not appear to allow for: (i) the potential future innovations that may occur during the RP7 period; and (ii) the technical complexity of the DSO Operation. For example, we could not see sufficient evidence of the capability to potentially control high numbers of end-user energy devices. Overall, especially excluding *DSO16 Enduring Flexibility Management System*, the percentage spend on DSO projects is very small compared to the overall IT spend in RP7. There is therefore a risk that additional funding may be required to initiate further DSO tasks in the RP7 period as the role and operation of a DSO develops.
- **Programme slippage** - DSO16 Flexibility Services Enduring Solution (£3<3<3<) is by far the largest project and comprises c. 35% of the overall expenditure for DSO transformation. It does not complete until Year 5 and is planned to start around 18 months after the Flexible Power Platform DS03 is implemented. This does not appear to provide sufficient time to understand the full requirements for this new system nor for market developments and potential new or emerging solutions to appear from the GB market or elsewhere. We consider that there is a high risk that the start of this major project will be delayed and consequently not be fully completed within the RP7 period.

5.5.3.6 Risk PRTR09 - The risk that there is an implicit commitment to an operating mode which may have to evolve.

The DSO Transition approach includes storing all data relating to DSO Operations in the NIE Networks’ Data Lakehouse, along with data from other areas of the NIE Networks business. A key objective of storing all this data together is to enable enhanced data analytics for both HV and LV networks and to improve planning and operational forecasting. Given



the formative stages of the DSO capability, it is a consideration that Integrating all DSO data into the NIE Networks Data Lakehouse may complicate the process of changing to a different business model in the future.

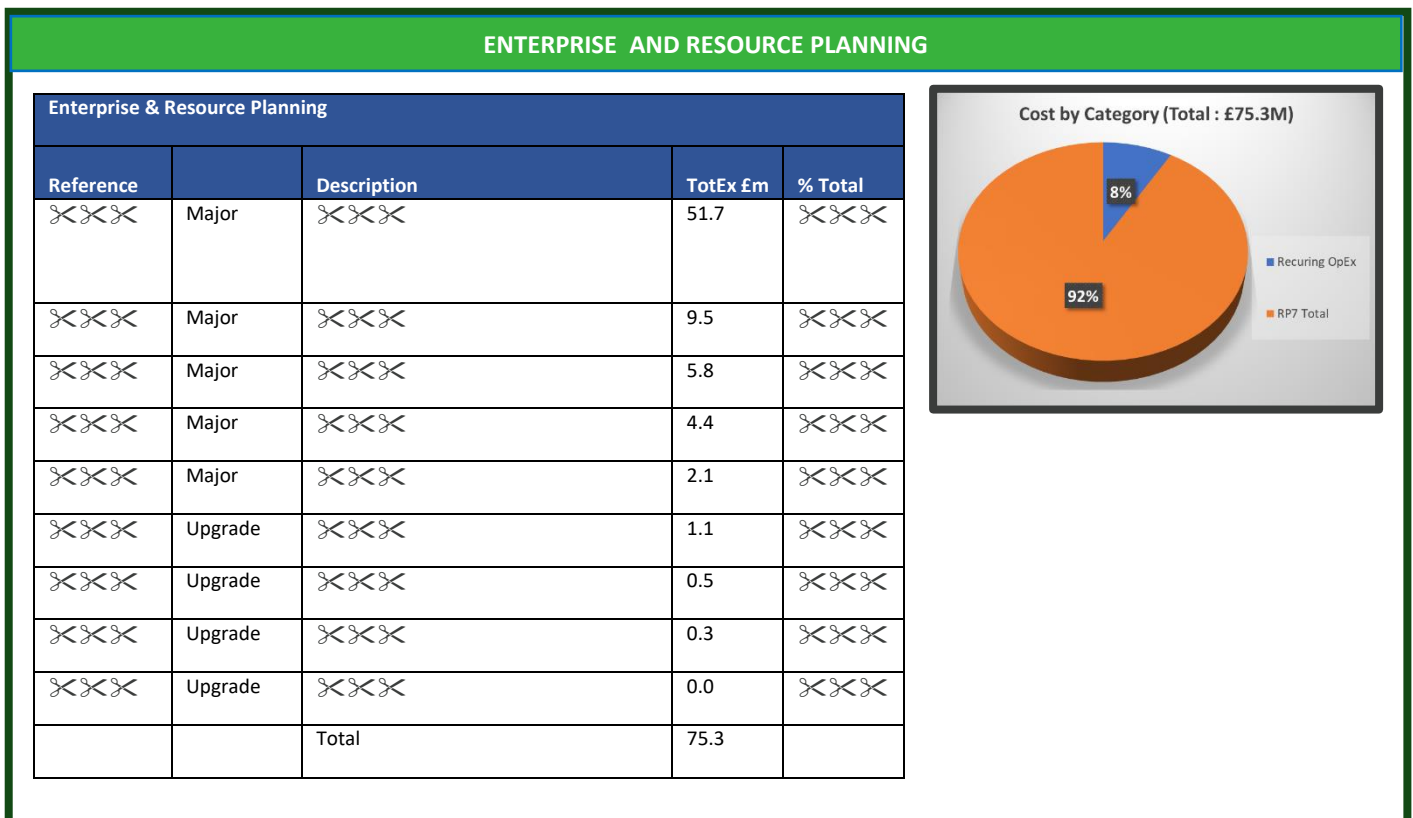
5.6 ENTERPRISE AND RESOURCE PLANNING

5.6.1 Scope

The projects categorised as Enterprise and Resource Planning (ERP) are either major application implementation projects or application upgrades / continuous improvement projects required to keep existing applications operating throughout the RP7 period as the major applications are implemented.

The list of projects within the Enterprise and Resource Planning Theme are in the table below. These are categorised as: Major - Projects that are major application implementations and Upgrade - Projects which are application upgrades and continuous improvements.

Figure 19 – Enterprise and Resource Planning Summary



Project FIN01 makes up XXXX% of the c. £75m investment for this theme, with the next two highest value major projects making this up to 90% of the total cost, all three of which are referenced with the prefix 'FIN'. In comparison, the sum of all the upgrade projects is small in comparison to the total at around £2m (~2.4%).



5.6.2 Strategy Context

The three 'FIN' projects all involve the implementation of modules of the SAP S/4 HANA solution. Together they account for c. £67M of estimated expenditure on SAP projects. They require specialist SAP expertise and implementation will result in the increase the overall SAP footprint within NIE Networks. We understand the requirement to move to the S/4 HANA platform as explained in the EY paper "ERP Solution Assessment Paper v1.0 31.01.23.pdf" as the current SAP IS-U and ECC platforms will eventually no longer be supported.

5.6.3 Risks – Enterprise and Resource Planning

Major application implementations

5.6.3.1 Risk PRTR10 - Risk of delays due to frequent funding reassessments

We recognise that in such a large and complex programme there are many unknowns that will be worked through as the programme progresses. NIE Networks indicated that there may be as many as five points in the implementation schedule where they would have the potential to request additional funding for the SAP related programme, with several of these at the end of the detailed design of each project. Whilst acknowledging the high level of uncertainty at this stage in programme planning, five additional funding discussions would appear excessive with an associated high risk of programme delay.

We would recommend that NIE Networks complete a reassessment of the end-to-end detailed design phase involving the SAP modules and the projects integrating with it. This detailed planning would mitigate the need for multiple funding discussions.

5.6.3.2 Risk PRTR11 Risk of sub-optimal solutions by not integrated the planning and execution of detailed design

We are of the view that the detailed design of the new end-to-end S/4 HANA solution and other major integration solutions, such as DIG01 Customer Engagement Platform, should be integrated and completed together to avoid the risk of sub-optimal end-to-end business processes. At the end of the detailed design process, NIE Networks should have a better understanding of the best implementation approach and the likely costs of these major applications.

5.6.3.3 Risk PRTR12 - Risk of dependencies driving implementation outside of the RP7 period

The application solution for CUS02 Stock Management System is not defined, however, it is expected to integrate with SAP S/4 HANA. The application solution for CUS04 Work Management System is due to be implemented by September 2030 and UR0108 indicates that the S/4 HANA scheduling interface will be linked to the new CUS04 Work Management Solution and CUS04 will also be integrated with CUS02 Stock Management System. Given these projects are later in the RP7 period and the integration and dependencies between them and SAP S/4 HANA, there is a high risk that they will not be completed within the RP7 period.



5.6.3.4 Risk PRTR13 - The risk of nugatory work

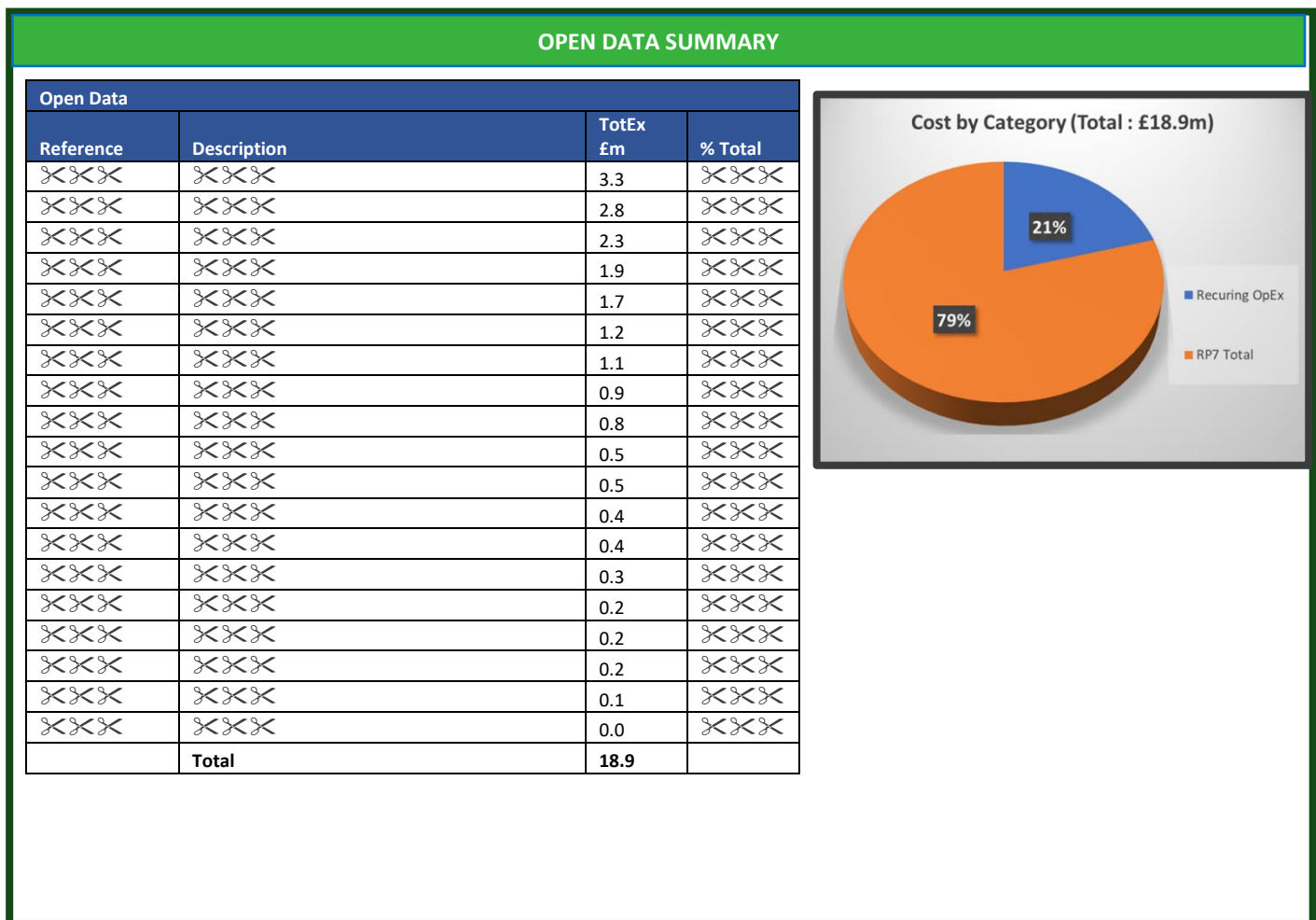
The scope and timing of the upgrade projects has been developed based upon knowledge of operating these applications in RP6. The proposed costs are similarly based upon these experiences. These projects are essential to keeping the existing applications current and secure, however, all development on these applications should be minimised as they are being replaced. Moreover, additional capabilities that are introduced because of these upgrades should be included in the scope and business case of the replacement projects.

5.7 OPEN DATA

5.7.1 Scope

The projects characterised as Open Data include most of the Data related project starting ‘DAT’ – DAT05 One Maximo Upgrade to DAT16 LV Connected Model. Several Asset Management projects are also categorised as Open Data; AM08 Land and Property Management System Upgrade to AM12 Visual Data Management Tool plus AM15 Land & Property Management Systems Implementation. MOP10 Portal Unmetered Inventory, HS01 Contractor Portal and HS04 Safety Data Analysis and Reporting are also included with the Open Data Category. The full list is shown in the table below.

Figure 20 - Open data summary





Out of the 19 projects which comprise this theme, c. 50% of the c. £19m total expenditure is allocated to just 4 projects, with c. 80% of the expenditure covering 8 projects, so there is a large group of comparatively small projects making up the total expenditure.

5.7.2 Strategy Context

As part of the NIE Networks Data Strategy (Version 2.1 dated 27/3/2023), it is stated that Open Data and good data quality and being a data driven organisation will deliver economic benefits to customers. “The Catapult Energy Systems EDTF report described 5 recommendations to modernise UK energy systems” with recommendation 2 being “that energy system data to be ‘presumed open’ and this to be encouraged through regulation and legislative means as appropriate” and many of the projects included with the Open Data category will enable this.

5.7.3 Risks – Open Data

We fully recognise the business logic of network utilities making better use of data, which is a common theme worldwide as new use cases and applications are developed. Against this developing area, our review of this programme theme identified two areas of risk for customers. The first is within open data platforms and the second concerns NIE Networks’ proposed property management systems.

5.7.3.1 Open data platforms

We understand and agree that DAT13 Data Management Platform and DAT14 Cloud Analytics Platform are essential projects for storing and maintaining data. They will enable many parts of NIE Networks’ future operations including those supported by data analytics.

5.7.3.2 Risk PRTR14 - The risk of loss of customer value in open data portals by not taking an iterative approach to scope and functionality (Implementation)

The Open Data category includes the DAT15 Open Data Portal and other portals such as MOP10 Portal Unmetered Inventory and HS01 Contractor Portal. We consider that portals are a good way to give third parties and other parts of NIE Networks’ access to data. However, Industry and others are maturing their approach so we expect that new use cases will emerge, and their commensurate benefits will evolve over the RP7 period. We therefore consider that there is a risk that these platforms as currently envisaged will either offer ‘too much’ or ‘too little’ access to data with both scenarios potentially leading to value loss for customers. We recommend that an iterative approach be taken for such projects where access to an amount of data is made available and then the benefit of this approach is assessed before making additional data available.

5.7.3.3 Risk PRTR15 - Risk of confusion and rework with small data quality projects (Implementation)

Given the volume of systems being implemented we believe Data Quality should be included within these system implementations and upgrades and there is a high risk of duplication and confusion by adding a separate initiative DAT10 Small Data Quality Projects.



5.7.3.4 Property Management Systems

5.7.3.5 Risk PRTR16 - There is a risk that the investment in property management systems may not result in best value for customers.

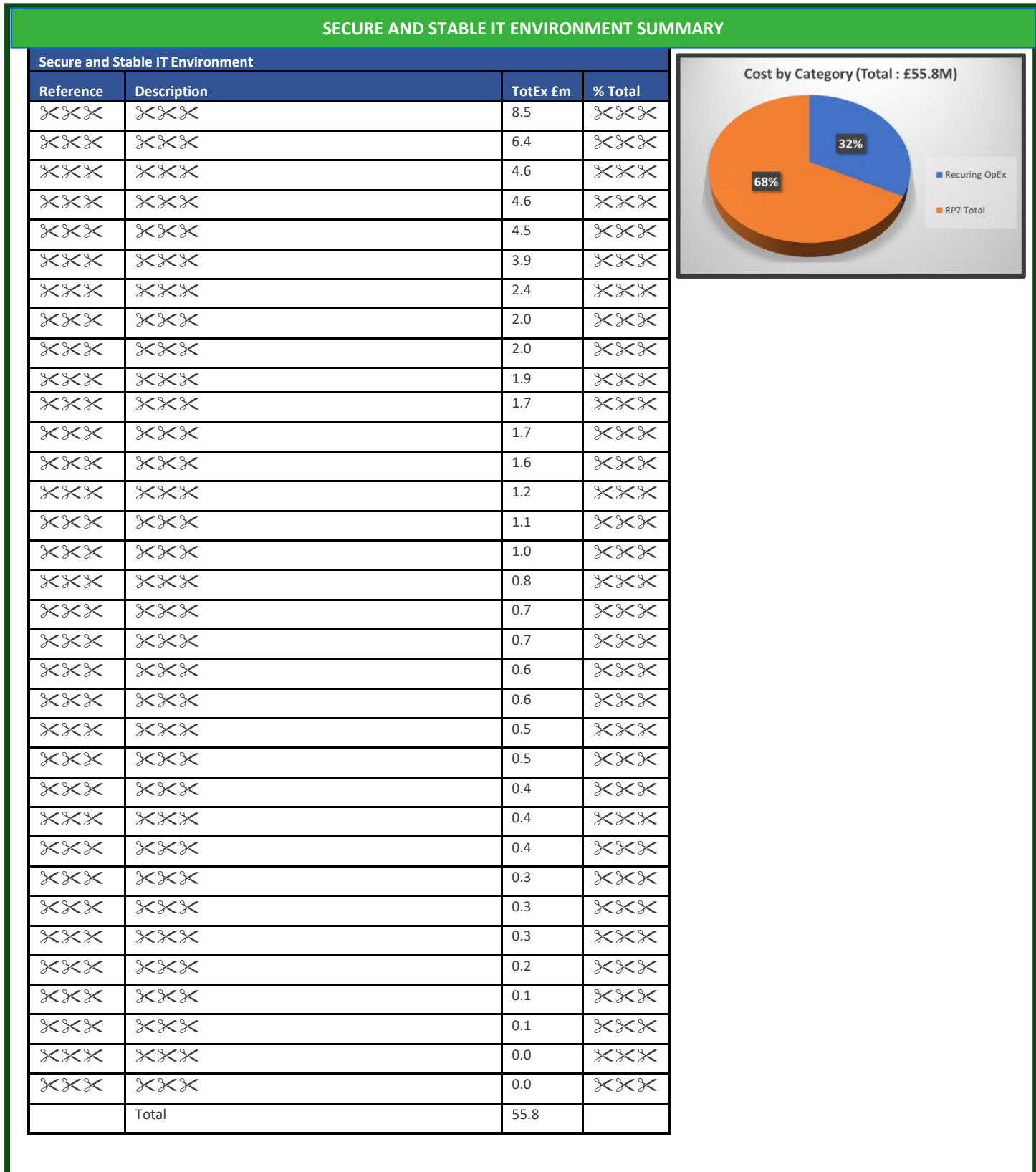
Together, AM08 Land & Property Management System Enhancements and AM15 Land & Property Management System are costed at £300,000, which represents a significant investment in this capability. Based upon information we received in query UR0098, there are estimated to be 20,250 queries to manage in RP7. This means that the cost of the AM08 solution alone would be over £100 per query which will not provide good value for customers. We recommend an iterative approach be taken for such projects, which would more likely lead to an efficient and cost-effective solution.



5.8 SECURE AND STABLE IT ENVIRONMENT

5.8.1 Scope

Figure 21 – Secure and Stable IT Environment Summary





There are 34 IT projects in this theme. 5 Projects comprise 50% of expenditure and 13 projects comprise c. 80% of the expenditure. This means that there is a substantive ‘tail’ of 22 relatively low-cost projects within the theme.

We recognise that the purpose of the RP7 submission was primarily for NIE Networks to evidence intended investment in IT systems, rather than facilitate assurance of new or existing cyber controls. Likewise, our remit was not to assure the Cyber Security Strategy or controls but principally to comment on whether the proposed expenditure would be efficiently incurred. Our review has therefore been limited to:

- CYB01
- CYB03

These focus on commitments NC004.6.1 and NC004.6.2. The projects are intended to update existing infrastructure, provide more effective cyber security resilience, mainly by upgrading extant systems or migrating to new ones, and to improve incident management, protective monitoring and disaster recovery/business continuity capability by way of an enhanced Managed Cyber Security service.

5.8.2 Strategy context

NIE Networks’ Cyber Security Strategy forms part of NIE Networks’ overall Digital Strategy, which includes the following documents:

- Cyber Strategy
- Data Strategy
- DSO Strategy
- IT Strategy

The central aim of the Government Cyber Security Strategy¹⁰ is.

“for government’s critical functions to be significantly hardened to cyber-attack by 2025, with all government organisations across the whole public sector being resilient to known vulnerabilities and attack methods no later than 2030”.

The Executive Summary in NIE Networks’ Cyber Security Strategy sets cyber security at the centre of the business and commits to providing a resilient cyber security control environment. With cyber threats evolving at an accelerated pace, it promotes a proactive approach to cyber security, supported by a defined governance structure. The precise relationship between the various strategy documents is not explained, although the IT Strategy document does state that the Cyber Security Strategy is regularly reviewed.

¹⁰ <https://www.gov.uk/government/publications/government-cyber-security-strategy-2022-to-2030/government-cyber-security-strategy-2022-to-2030-html>



Mandatory compliance with Network & Information Systems (NIS) regulations is a key driver behind the Cyber Security Strategy, as there is no requirement for NIE Networks to be certified or independently assured against any recognised security standards. The strategy states that NIE Network is aligned to ISO27001, ISO27035 and ISO31000 and National Institute of Standards and Technology Cyber Security Framework (NIST CSF). Whilst ISO31000 addresses general risk, information security practices are addressed in the 27000 series. Our view is that the cyber strategy would be enhanced by providing additional context around information security risk decision-making, compliance expectations, risk tolerance and risk treatment as per: *ISO/IEC 27005:2022 Information security, cybersecurity and privacy protection – Guidance on managing information security risks*.

The UK Cyber Assessment Framework (CAF) requirements are also considered mandatory for Critical National Infrastructure (CNI) providers. Whilst adherence to relevant standards is consistent with meeting NIS and CAF requirements, our view is that the strategy would be improved if it included more detail around the scope and applicability of the ISO27001 and NIST security controls, and how these are used to manage cyber risk effectively. For example, selecting a framework will enable NIE Networks to adopt and demonstrate a consistent approach, using standardised processes, with comprehensive coverage ensuring legal and other obligations are met, where compliance with standards is measured, risks evaluated, and regular reports are produced for key stakeholders.

Within the cyber strategy, governance diagrams and accompanying narrative were inconsistent, and it was unclear how the strategy works in practice. Although NIE Networks provided an update¹¹, the strategy is not clear as to whether the cyber security function is empowered to engage the Executive independently and without undue influence from other areas of the business, e.g., IT. The cyber strategy would therefore be improved by updating the governance diagrams and narrative, and the inclusion of independent reporting lines and escalation routes.

The Cyber Security Strategy appears to have been created largely as part of the RP7 submission, rather than as the roadmap that the submission delivers against. We queried the lack of document history and asked when it was last reviewed, to which NIE Networks responded¹² (UR0426), “*Our Cyber Strategy was formally reviewed and updated during 2022 as part of the preparation for the RP7 submission*”.

5.8.3 Commentary

5.8.3.1 Current security processes

Although the submission and strategy documents are high-level, we identified several good security practices that help identify gaps, protect data and enable continuous improvement: processes include internal and external audit regimes; risk management principles and governance structures; technical measures include protective monitoring; security patching and penetration testing; personnel controls include security awareness training. This is not an exhaustive list, but it demonstrates that NIE Networks is aware of its cyber security responsibilities. In our limited assessment, we also identified an example of where NIE Networks’ cyber security implementation does not appear to be fully aligned with its stated strategic principles (for example, see project AMO5, below).

¹¹ via UR-0393

¹² UR-0426



5.8.3.2 Alignment with strategy

CYB01 focusses largely on replacing existing end-of-life systems. Changes are implemented primarily as a compliance enabler, rather than as part of a proactive approach to embrace modern technologies and ways of working. We believe the submission would be significantly improved if NIE Networks demonstrated a more proactive approach to security, in line with their Cyber Strategy, rather than focussing on replacing end-of-life products. This would be consistent with developing and maintaining a strong foundation of organisational cyber security resilience, organising and structuring its cyber defences to manage unknown and more sophisticated threats when they arise.

In addition to the twenty-one projects which were identified as being fundamental to, or supporting of, the cyber security commitments, the following projects, where core functionality is the main driver, but where there is a cyber security aspect, were noted¹³

- AM05 Transformer Oil Monitoring Upgrade
- DAT02 One Maximo
- DAT03 ArcGIS Software Upgrade
- DAT05 One Maximo System Upgrades
- DSO14 PI Historian Updates
- FIN04 SAP BW / BOBI & Qlik migration
- INF02 SharePoint Online Migration
- INF07 Office Productivity Application Upgrade
- PRG01 Programme Delivery
- TEL06 New Craigavon Office IT Provision

The AM05 Transformer Oil Monitoring Upgrade project describes the following security risk:

“This machine operates without failover, automatic backups or security patching. This poses a significant risk from a cyber security perspective.”

This machine referred to is a Windows Server 2008, which went out of support in January 2020. The reasons for running an out-of-date and insecure server are not documented, but the practice appears at odds with a commitment to be proactive and cyber resilient.

CYB03 outlines NIE Network’s proposal to acquire the services of a suitable Managed Serviced Provider (MSP). Pooling and sharing resources are fundamental business concepts which will enable NIE Networks to benefit from the MSP’s advanced cyber security toolsets and techniques, together with specialised cyber security knowledge and experience. Our view is that this proposal will enable NIE Networks to achieve a more robust and cost-effective cyber security capability.

¹³ (UR-0394) :



NIE Networks should ensure that the MSP is aware of any relevant service level requirements for which they will be responsible. These should be discrete and measurable, and the process of continually monitoring service level agreements with the MSP should be used to inform the third-party risk management process.

5.8.4 Risks beyond Security

Integration Middleware

5.8.4.1 Risk PRTR17 - Risk of confusion and duplication with use of multiple data integration approaches

INF03 Integration Middleware – it is unclear why this is required in addition to what is already being provided through either integration with SAP or the cloud services platform. The outcomes or benefits provided by the standalone platform outlined in the project brief or UR0132 are unclear. It is also unclear in the future application architecture, where the additional cost and complexity of a middleware application would be justified.

Programme Delivery:

5.8.4.2 Risk PRTR18 - Risk of conflicting governance and operational processes with a major SAP implementation methodology and approach conflicting with other internal governance approaches.

The SAP implementation will utilise standard programme management, templates and processes via SAP and is a tried and tested methodology. NIE Networks has put forward an extended project management team to supplement this, leading to a risk of conflicting governance and operational processes with a major SAP implementation methodology. This may also conflict with other internal governance boards and reporting cycles.

5.8.5 Conclusions

From the useful information in the submission provided by NIE Networks, we believe that the IT investments that specifically relate to Cyber Security are reasonable. We also recognise that it is challenging to understand, from a Cyber Security perspective, how much detail to include to support a review of efficiently incurred cyber-IT costs. We have therefore included guidance for NIE Networks to consider refining the submission to support the proposed investments with a high degree of confidence.

In particular, the submission would benefit from more detail and clarity around NIE Networks' corporate approach to cyber security.

- We recommend that the Cyber Security Strategy is reviewed against current NIE Networks' objectives and commitments, and that review history and a document security classification should be included in future versions to provide stakeholders with confidence that the document is current and being maintained.
- We further recommend that all projects should be reviewed from a Cyber Security Strategy perspective, to provide sufficient detail and context, and more clearly demonstrate adherence with corporate strategy. Any exceptions to this approach should be clearly identified and explained.



- In addition, and to evidence compliance, we recommend, wherever possible, that NIE Networks follows supplier best security practice and applies regular security patches in line with manufacturer recommendations. This would enable NIE Networks to demonstrate a better alignment with its cyber security strategy and provide confidence to stakeholders that its data is protected in line with good security practices.
- NIE Networks should satisfy itself, to the extent required, that the MSP adheres to relevant NCSC secure system administration guidance and cloud security principal 12¹⁴.
- We recommend that NIE Networks re-assess its use of the non-SAP PMO function and also the use of middleware due the high risk of inefficient operations.

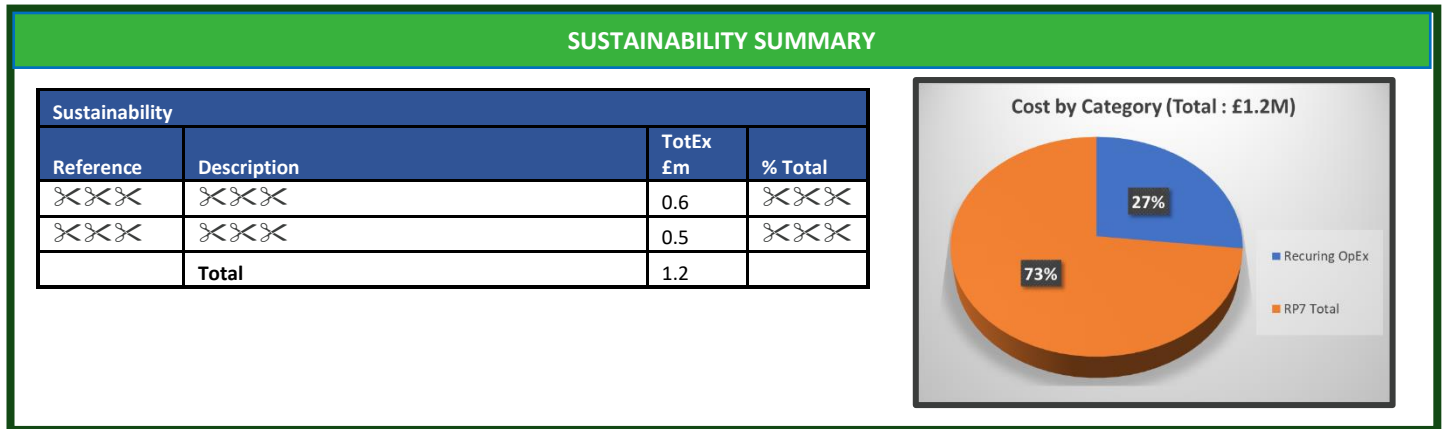
¹⁴ <https://www.ncsc.gov.uk/collection/cloud/the-cloud-security-principles>



5.9 SUSTAINABILITY

There are two projects in the sustainability theme with a combined investment total of £1.2M and comprising two projects of approximately equal size.

Figure 22 – Sustainability summary



5.9.1 Strategy Context

The two sustainability projects are described in the Digital and IT Business Plan. This makes the point that DSO projects also contribute to sustainability commitments as well as placing the theme within the Net Zero context.

5.9.2 Risks - Sustainability

5.9.2.1 Risk PRTR19 - SUS03 There is an apparent risk that the procured solutions will be made redundant by a potential solution that is to be developed by the ENA.

There are only two projects categorised as Sustainability, SUS01 Embodied Carbon Footprint Tool and SUS03 Natural Capital Tool. Both projects appear necessary to keep NIE Networks and the Northern Ireland Regulatory environment consistent with sustainability initiatives in GB. We note that the decision options around SUS03 have been reviewed by an independent consultant and NIE Networks discuss the relative merits of certain off the shelf solutions. However, the text in the project description for SUS03 led us to question the length of the useful working life of a procured solution (such as TESSA) when a (presumably) superior ENA solution is made available.

“It is expected that 2 tools could be required to deliver on the objectives set out above (i.e., a combination of both the National Grid tool and TESSA tool), however it is possible that through the ENA, a single tool could be developed over the coming years. NIE Networks should also consider how this assessment tool would integrate with ESRI.”



5.10 SUMMARY OF RISKS - PROGRAMME

We have summarised the risks below.

Table 5 Programme (theme) risks

No	Project / Question Ref	Headline
PRTR01	-	There is a stranded investment risk for projects borne by the connections business (operation)
PRTR02	DIG09	There is a risk that the highest cost project in this theme (DIG09) will not provide commensurate benefits.
PRTR03	AM13	Risk of return of investment not being tracked or recognised through insufficiently evidenced business case (justification)
PRTR04	URQ0007	The risk of significant disruption to the programme by smart metering, which supports the need to re-plan
PRTR05	URQ0007	The risk of re-work falling beyond the RP7 period.
PRTR06	-	The risk of nugatory investment (for example on LV monitoring)
PRTR07	DSO02	Risk of unclear objectives leading to the potential for scope creep
PRTR08	DSO16	The risk of that the programme will not be resilient to future innovation
PRTR09	-	The risk that there is an implicit commitment to an operating mode which may have to evolve.
PRTR10	-	Risk of delays due to frequent funding reassessments
PRTR11	DIG01	Risk of sub-optimal solutions by not integrated the planning and execution of detailed design (implementation)
PRTR12	CUS02 CUS04	Risk of dependencies driving implementation outside of RP7 period
PRTR13	DAT05 – DAT16	The risk of nugatory work (operational)
PRTR14	DAT15 MOP10 HS01	The risk of loss of customer value in open data portals by not taking an iterative approach to scope and functionality (Implementation)
PRTR15	DAT10	Risk of confusion and rework with small data quality projects (Implementation)
PRTR16	AM08 AM15	There is a risk that the 'lumpy' investment in property management systems may not result in best value for customers
PRTR17	INF03	Risk of confusion and duplication with use of multiple data integration approaches
PRTR18	-	Risk of conflicting governance and operational processes with a major SAP implementation methodology and approach conflicting with other internal governance approaches.
PRTR19	SUS01	Risk PRTR19 - SUS03 There is an apparent risk that the procured solutions will be made redundant by a potential solution that is to be developed by the ENA



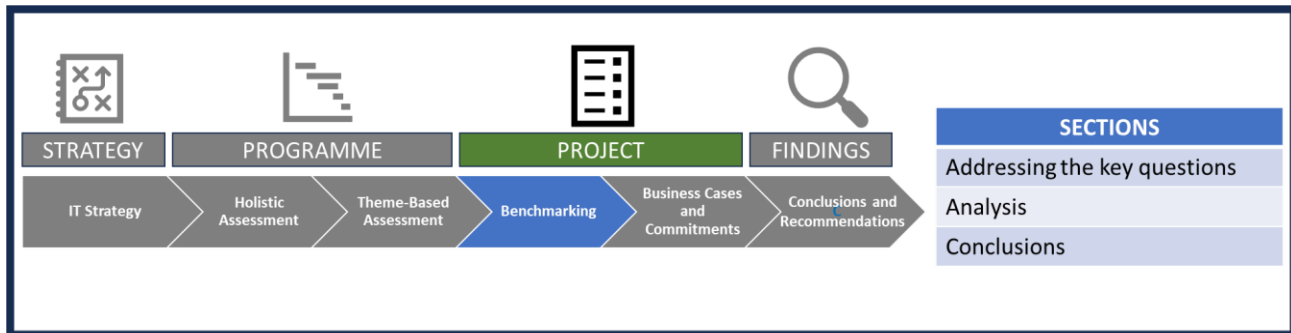
PROJECT





6 PROJECT - BENCHMARKING

6.1 INTRODUCTION



Benchmarking is a useful tool to test whether certain operational costs submitted by NIE Networks are efficient. However, it should be used with caution due to the complexities of making useful cost comparisons. For this reason, we intentionally decided not to benchmark the business backfill costs or software licence costs due to the inherent complexity of doing so. Moreover, we recognise that it is unnecessary to benchmark those costs that will be market tested as part of NIE Networks' procurement activities, which include:

- Managed Service Provider (MSP) Day Rates
- System Integration costs in the programme concerned with SAP replacement and comprising projects in the ERP theme.

6.2 ADDRESSING THE KEY QUESTIONS

The table below summarises at a high level how the programme theme perspective has contributed to our assessment of the key questions.

Figure 23 - Addressing the key questions from a project benchmarking perspective.

Question	Description
Appropriate Scope	<ul style="list-style-type: none"> • N/a
Delivery Capability	<ul style="list-style-type: none"> • N/a
Timely Delivery	<ul style="list-style-type: none"> • N/a
Determination of efficient costs	<ul style="list-style-type: none"> • Competitive procurement is welcomed -- It is also our opinion that given that many of the rates and cost elements provided will be subject to competitive procurement that further benchmarking of SI rates would provide little further insights. The outcome of the benchmarking exercise would support a determination of costs. • We considered the positioning of the NIE Networks rates (compared to others we considered) to be fair and we have determined that no adjustments or additional challenges are necessary at this stage.



6.3 ANALYSIS

6.3.1 Project selection

The two selection criteria we used are.

- **Systems integrator day rate costs** (of which are not subject to an external tender process) for small to medium projects. They are a large component of third-party costs for the programme, which are currently uncertain.
- **Exclude resources from software vendors** - excluding comparing rates for those projects where the resources would typically come from the software vendor. This is because they are often established when the original software is procured rather than be easily available on the open market. We selected projects in which resources could likely be provided by multiple companies.

The two projects we selected are.

- **External website upgrade** - As part of the question-and-answer process with NIE Networks we sought clarification of the SI rates for (i) COM01 (External Website Upgrade), which were provided in response UR0104. It was considered that such a project of value £~~222~~ would involve SI resources that would be generally available in the open market and was of a sufficient size.
- **Inventory Automation** - For (ii) CUS02 (Inventory Automation, specifically, SAP resources) the rates were provided by NIE Networks as part of their submission in "IT Appendix A6 Detailed Costings" in the hidden table "ERP_SI_MSP" a project of value £~~222~~ which would again involve SI resources that would be generally available in the open market and of a sufficient size; and also the types or resources that may be involved in several other projects which are SAP based;

6.3.2 Approach

In each case, published rates for similar roles (where available) were used to compare to roles/rates found on the UK Government Digital Marketplace online portal. Rates across two comparable grades were used from the portal to take account of the same or similar roles operating at more than one grade / seniority / SFIA experience. This leads to a low rate and a high rate for each role identified ("Grade A" (low) and "Grade B (high)", respectively). In addition, across the data collated and analysed, the outcome is presented as an Average, Maximum and Minimum value across the set of rates for each role. In respect of COM01, this was across 7 data sets; and in respect of CUS02, this was across 3 data sets.

6.3.3 Assessment of rates

6.3.3.1 External Website

The NIE Networks' rates provided within the response UR0104 are towards the lower end of the benchmarked rates and may provide reasonable value-for-money. A future competitive procurement activity, coupled with more detailed specifications of the services and the deliverables to be delivered, will further demonstrate value for money for such services.



Table 6-COM001 (External Website Upgrade)

Role Title	NIE Networks Rate	Analysis						
		Grade	Grade A (low)			Grade B (high)		
			Average	Max.	Min.	Average	Max.	Min.
SI Project Manager	£950	5 / 6	£941	£1,396	£750	£1,152	£1,684	£900
SI UX/Design SME	£625	4 / 5	£870	£1,208	£720	£979	£1,396	£800
SI Business Analyst	£625	3 / 4	£823	£1,208	£640	£946	£1,396	£720
SI Developer (onshore)	£625	3 / 4	£789	£988	£640	£899	£1,208	£720
Quality Assurance	£625	4 / 5	£815	£1,208	£600	£1,011	£1,396	£850

Inventory information

The NIE Networks' rates provided within IT Appendix A6 – Detailed Costings, are generally higher than the lower grade rates (Grade A (low)) and lower than the higher-grade rates (Grade B (high)), falling somewhere mid-range of the benchmarked rates. There may be opportunities to achieve greater value-for-money, especially in undertaking a future competitive procurement activity, coupled with more detailed specifications of the services and the deliverables to be delivered.

Table 7- CUS02 (Inventory Automation, specifically, SAP resources)

ROLE TITLE	NIE Networks' Rate	Analysis						
		Grade	Grade A (low)			Grade B (high)		
			Average	Max.	Min.	Average	Max.	Min.
SAP Solution Architect	£1,100	5 / 7	£997	£1,167	£825	£1,797	£2,583	£1,332
SAP Senior Functional Consultant	£1,144	5 / 7	£907	£1,064	£825	£1,445	£1,682	£1,179
SAP Developer (onshore)	£965	5 / 6	£879	£1,080	£732	£1,075	£1,200	£832

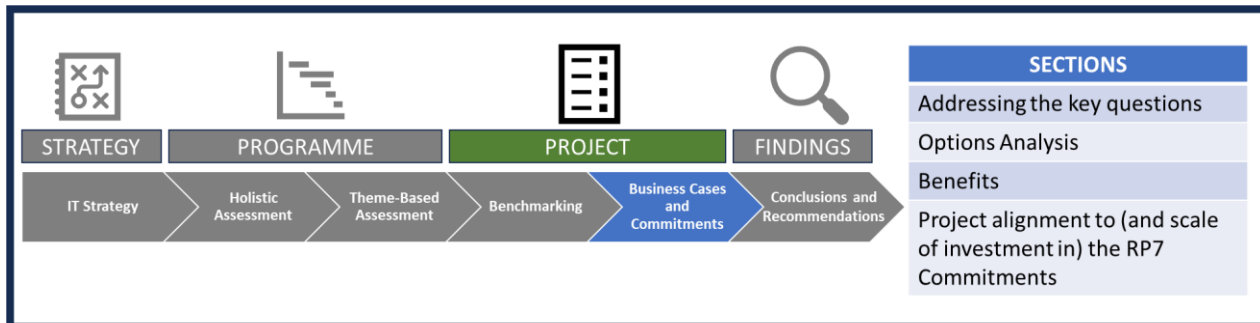
6.4 CONCLUSIONS

After we had completed this limited benchmarking activity we considered the positioning of the NIE Networks rates (compared to others we considered) to be fair. Moreover, we have determined that no adjustments or additional challenges are necessary at this stage. It is also our opinion, given many of the rates and cost elements provided will be subject to competitive procurement, that further benchmarking of SI rates would provide little further insight.



7 BUSINESS CASES

7.1 INTRODUCTION



In this section we examine the NIE Networks' summary of the business case within the project briefs. Each project brief comprises several sections, but we have chosen to highlight the report findings to the following.

- Options analysis
- Treatment of benefits
- Alignment to RP7 benefits

We understand that the full and detailed business case behind each project is in development.


7.2 ADDRESSING THE KEY QUESTIONS

The table below summarises at a high level how the business case perspective has contributed to our assessment of the key questions.

Figure 24 - Addressing the key questions from a project business case and commitments perspective.

Question	Description
Appropriate Scope	<ul style="list-style-type: none"> • Options analysis complete for each project - Whilst we felt that there were some weaknesses in the options analysis, we note that NIE Networks did consider different options for each project. • Weaknesses in the options analysis - the case supporting the chosen option sometimes lacked balance. We found the descriptions detailing the choice of favoured approach to be generally 'unequivocally' beneficial and therefore lacked the balance one might expect for a decision process. This reduced our confidence that the 'pros and cons' of the favoured option had been fully analysed. We would also have expected more 'non-IT' solutions to be considered
Delivery Capability	<ul style="list-style-type: none"> • Outcomes not just outputs - The IT projects are not just concerned with the delivery of technical capability (output), but also delivering on the RP7 commitments (outcome). Our view is that the mapping to commitments of benefits and investments must be more complete in order for us to be more confident in their delivery.
Timely Delivery	<ul style="list-style-type: none"> • n/a



Question		Description
Determination of efficient costs		<ul style="list-style-type: none"> • There is a greater role for the description of quantitative and financial benefits in the submission - We do not think it proportionate to base each investment decision solely on forecast financial benefits. However, it our view that more can be done to transform measurable benefits (such as speeding up a process) into clear metrics – and for some of these to be turned into financial indicators. • Describing ranges of benefit would have been appropriate and proportionate in effort- Recognising that broader quantitative benefit ranges (based on high-level assumptions) are appropriate in earlier and less detailed planning phases and the effort to describe them proportionate to the cost. • Incomplete picture of mapping of projects to commitments leads us to have less confidence in the stewardship of investment against the RP7 commitments - Our inspection demonstrated that all projects align to some extent to a commitment but that some commitments are unserved by IT projects. As we do not have a full picture of how commitments are mapped to all investment costs and benefits across the entirety of the price control, we are unable to comment on the completeness of the exercise. • The extent to which a commitment is supported by IT Projects is unclear - We question the degree to which some IT projects align with their respective commitments when some commitments are only served by supporting relationships with projects. • Realisation and tracking of benefits may be at risk – in the absence of quantified benefits or assigned strategic priorities to meeting the commitments, it adds to our view that the realisation (or measurement of) of customer benefits across a broad range of categories may be at risk. • We would welcome assurance that the full range of commitments get adequate management attention - If NIE Networks focus its attention and effort on the higher cost projects by the same “80/20” logic, 80% of the commitments receive 20% of the resources / management attention.

7.3 OPTIONS ANALYSIS

7.3.1 Introduction

It is common for an investment case to consider a range of options, and then to create a balanced argument to support a chosen way forward. A clear and balanced Options Analysis is an important part of gaining confidence in the investment decisions. This is because it is a vehicle for providing a clear rationale for change. Moreover, it demonstrates that good, viable alternatives to the favoured option have been considered. The analysis within each project submission follows this convention. In particular, the reader is presented with the following choices.

- **Do nothing** – the rationale for change.
- **Favoured option** - the option chosen to progress.
- **Alternative options** – those options which are not advantageous compared with the chosen option.

In addition, NIE Networks has detailed a risk analysis and a summary rational which outlines the reason for choosing the favoured option.



7.3.2 Assessment of options analysis

We have reviewed each feature of the options analysis (Table 5) and aligned this to the expectations that may be used to support an Investment Board's decision making.

Table 8 - Table showing critique of NIE Networks' options analysis.

Feature	Our expectations	Our summary findings
Do nothing	Forms a compelling basis for change because the option of 'doing nothing' clearly provides significant risk or cost.	Mostly compelling across the portfolio
The favoured option	Should include compelling benefits and rationale, whilst also including potential disadvantages.	The favoured option is largely compelling across the portfolio, but the case is weakened by the chosen option displaying few, if any disbenefits over the rejected alternatives. Instead, each point in the Option description is generally another compelling reason in favour of the option.
Alternative options	These should be realistic alternatives to the chosen course of action. They should include both advantages where they exist as well as disadvantages.	The rejected alternatives have very few, if any, benefits of proceeding with them, leading often to the inference that they are not realistic options anyway.
Risk and mitigation analysis	This should be the risk of doing nothing and the mitigations that can be expected from the favoured option. It should also include the risks with undertaking the favoured option.	The risk analysis is solely concerned with the risks of 'doing nothing' rather than the risk of proceeding with the favoured option (or an alternative option) and therefore contributes to the rationale for change.
Decision rationale	This should play back the business logic and invoke strategy where necessary to make a case for the favoured option.	A conclusion statement which does not 'show the working' for the decision made

7.3.3 Conclusions

We then summarise our findings against each feature drawing our conclusions from what we have generally found across the portfolio. There are exceptions to each of the categories, but broadly we perceive the following trends.

- **The arguments in favour of change are broadly sound**- In general, we found many of the business cases form a compelling reason for change and are informed by the 'do nothing' narrative and the risk analysis.
- **The case supporting the chosen option sometimes lacked balance with a notable exception** - We found the descriptions detailing the choice of favoured approach to be generally 'unequivocally' beneficial and therefore lacked the balance one might expect for a decision process. This reduced our confidence that the 'pros and cons' of the favoured option had been fully analysed. There are however notable exceptions, for example NIE Networks' consideration of its preferred ERP solution. NIE Networks explored the process of choosing Oracle or continuing with SAP. This was at a juncture in the IT lifecycle cycle when it is appropriate to step back and consider the strategy in detail – given the required long-term commitment to a particular vendor. The analysis provided in favour of SAP was broad and compelling (although we note that it was compiled by an expert in SAP)



- **We would have expected more ‘non-IT’ solutions to be considered** - In many instances there may be no realistic alternative to deploying a preferred IT solution. However, in a crowded programme of IT change, we expected more consideration of non-IT alternatives even though such options may ultimately be rejected.
- **We would have expected there to be less of a clear distinction between the favoured and rejected options** - In a mature IT market which often sees significant innovation, we would expect there to be more IT alternatives to NIE Networks’ chosen IT option which would contribute towards a more nuanced ‘pros and cons’ analysis against each option (including key risks and associated mitigations).
- **We would have expected a more closely argued decision rationale**- We would have expected the that the text summarising the chosen option would weigh up the ‘pros and cons’ between the favoured option and even invoke strategy arguments to decide between the trade-offs between the options. Instead, this text was often just a summary statement ‘deeming’ the favoured option as chosen.

7.4 BENEFITS

7.4.1 Introduction

The realisation of benefits and identification of the benefit owner are key to any business case. Within each project summary there is a section dedicated to describing the benefits of proceeding with the favoured option. In this section we describe our assessment of the treatment of benefits across the portfolio and how that supports each investment.

7.4.2 Assessment of Benefits

To better structure our assessment, we used the following definitions of benefits.

Table 9 - definition of benefits

OBSERVABLE	MEASURABLE	QUANTIFIABLE	FINANCIAL
intangible, qualitative benefits that are reliant on subjective judgement to assess them.	These either are, or have the potential to be, measured objectively. However, they are not sufficiently understood to forecast a benefit as a result of the investment.	There is sufficient evidence to forecast the change as a result of the investment	The predicted financial value as a result of the investment

Across the portfolio of projects, most of the benefits outlined match the definition of either observable or measurable. However, for ‘measurable’ or qualitative benefits (such as faster completion of a process) there are few well-defined performance metrics.

We have seen little evidence of NIE Networks basing its investment decisions on forecasted quantitative or financial benefits. During our discussions on this subject, NIE Networks indicated that it planned to quantify benefits in later versions of the business cases. We understand that some projects may require detailed planning (perhaps in the



procurement phase) to understand detailed quantifiable benefits. However, it is reasonable that a range of quantitative benefits could be described in the planning stages based on reasonable high-level assumptions. These could be refined as planning matures. Of course, for all ‘stand-alone’ projects, the effort to quantify their benefits should largely be proportional to the cost of the project.

7.4.3 Conclusions

We do not think it proportionate to base each decision solely on a forecast of financial benefits, However, it our view that more can be done to transform measurable benefits (such as speeding up a process) into clear metrics – and for some of these to be turned into financial indicators. The lack of quantifiable metrics, against which success can be measured, supplements our overarching view that NIE Networks need more time to develop a detailed programme plan. Identifying ranges of quantifiable benefits, based on high-level assumptions, (that should exceed the project cost) is an acceptable approach during the time period before detailed planning and procurement takes place.

7.5 PROJECT ALIGNMENT (AND SCALE OF INVESTMENT) TO THE RP7 COMMITMENTS

7.5.1 Introduction

In effect, the RP7 commitments describe the outputs, outcomes and benefits from IT investments made across the price control. They are described more fully in the IT Business Plan. NIE Networks mapped the IT Projects to the commitments and provided to us a matrix in Excel which linked each IT project to the commitments that it supported. It would be logical to assume that other investments, such as network CapEx and resource costs also feed into these commitments, but these lie outside of our scope.

The matrix aligns well, but not perfectly (due to summarising information in places), with the commitments described in the business plan. There are over 70 commitments in total which are separated in the matrix into 16 themes. An extract of this matrix is shown below in Figure 25.

Figure 25 – Extract from the Commitments / Theme Dependency Matrix

ID	Project Title	2.2 Network Performance & Resilience							3.1 Sustainability & Environmental Aims					
		2.2.1	2.2.2	2.2.3	2.2.4	2.2.5	2.2.6	2.2.7	3.1.1	3.1.2	3.1.3	3.1.4	3.1.5	
Digital Transformation														
Open Data														
AM04	ADST CNAIM Version Updates	F	S	S										
AM08	Land and Property Management System Upgrade	S	S							F				
AM10	Asset Data Management & Analytics	F	S											
AM11	Cable/plant partial discharge monitoring system	F	S											
AM12	Visual Data Management Tool	F	S	F						F				
AM15	Land and Property Management System Implementation	S	S							F				
CUS10	Terrestrial Lidar Scanner													
DAT05	One Maximo System Upgrades	F												
DAT06	Data Management Maturity Progression													
DAT07	NMS Integration and Gtech Consolidation													
DAT09	Asset Data Systems Integration													
DAT10	Asset Systems Data Quality Projects													
DAT13	Data Management Platform													
DAT14	Cloud Analytics Platform													
DAT15	Open Data Portal													
DAT16	LV Data Model						S							
HS01	Contractor Portal													
HS04	Safety Data Analysis and Reporting													
MOP10	Unmetered online inventory portal													

The features of the dependency matrix are shown below.



- **Row** - Each row is associated with one of the 99 projects (in this extract the projects within the Open Data Theme are shown).
- **Columns** - Each column is associated with a Commitment (in this case the commitments in 2.2 and 3.1 are shown).
- **Red cell** - corresponds to a FUNDAMENTAL relationship between the project and the commitment.
- **Purple Cells** – corresponds to a SUPPORTING relationship between the project and the commitment.

To add additional context, the commitments associated with 2.2 (corresponding to the columns in Figure 25 are shown below).

Table 10 – RP7 Commitments Numbered 2.1 - to 2.9

NC001.2	Enhancing Customer Service
NC001.2.1	Improving Communication Channels - introduce new multi-channel communications for our Contact Centre
NC001.2.2	Improving Communication Channels - provide a digital Self-Serve platform, ensuring that if customers need to speak to someone they can
NC001.2.3	Improving Communication Channels - develop our website to provide more information on how customers can become prosumers
NC001.2.4	Improving Communication Channels - expand social media availability including live chat
NC001.2.5	Improving Communication Channels - provide public briefings and advice to support customers and communities regarding the Energy Transition
NC001.2.6	Trusted advisor for customers in supporting decarbonisation
NC001.2.7	Improving our Response to Customers - enhance speed of response and resolution for customer contacts
NC001.2.8	Improving our Response to Customers - accessible services via digital solutions to enhance customer experience
NC001.2.9	Using Customer Feedback to develop commitments that mean the most to our customers

In this section we look at two aspects of how the IT Projects align with the commitments

- **Alignment** - Degree of IT Project alignment with, and mapping to, the RP7 commitments.
- **Investment** - Estimating expenditure against the RP7 Commitments.

7.5.2 Assessment of project alignment

A simple inspection of the matrix indicates several features relating to how IT projects map to the RP7 commitments.

1. **Projects map to more than one commitment** - A project can map both fundamentally and supportively to more than one commitment.
2. **There are a number of 'orphaned' commitments which are not mapped to any project**- There are some commitments without an IT project mapped to them. We have assumed that such commitments are served by investments that are within the RP7 price control, but which lie outside of our scope of IT investments. However, NIAUR reports that it has not received an equivalent matrix for these investments.
3. **Some commitments are only 'supported' by IT investments** - There are some commitments that have no *fundamental* linkage to any IT project and are instead underpinned by one or more *supporting* IT projects. It is unclear to us, whether supporting IT projects on their own are sufficient to deliver such commitments or whether there are investments in other parts of the price control which service them instead.



7.5.3 Conclusion in respect of alignment

Our inspection demonstrated that all projects align to a commitment, and in one sense that points to the completeness of the RP7 'project-to-commitment mapping. We would question the degree to which some IT projects align with their respective commitments when, for some commitments are only aligned to supporting relationships with projects. It would have been helpful for NIEN to provide to UR a complete mapping of all investments to each of the commitments. This would enable NIAUR to test whether all the commitments are serviced, and if so, which investments are responsible.

7.5.4 Assessment of project investment stewardship

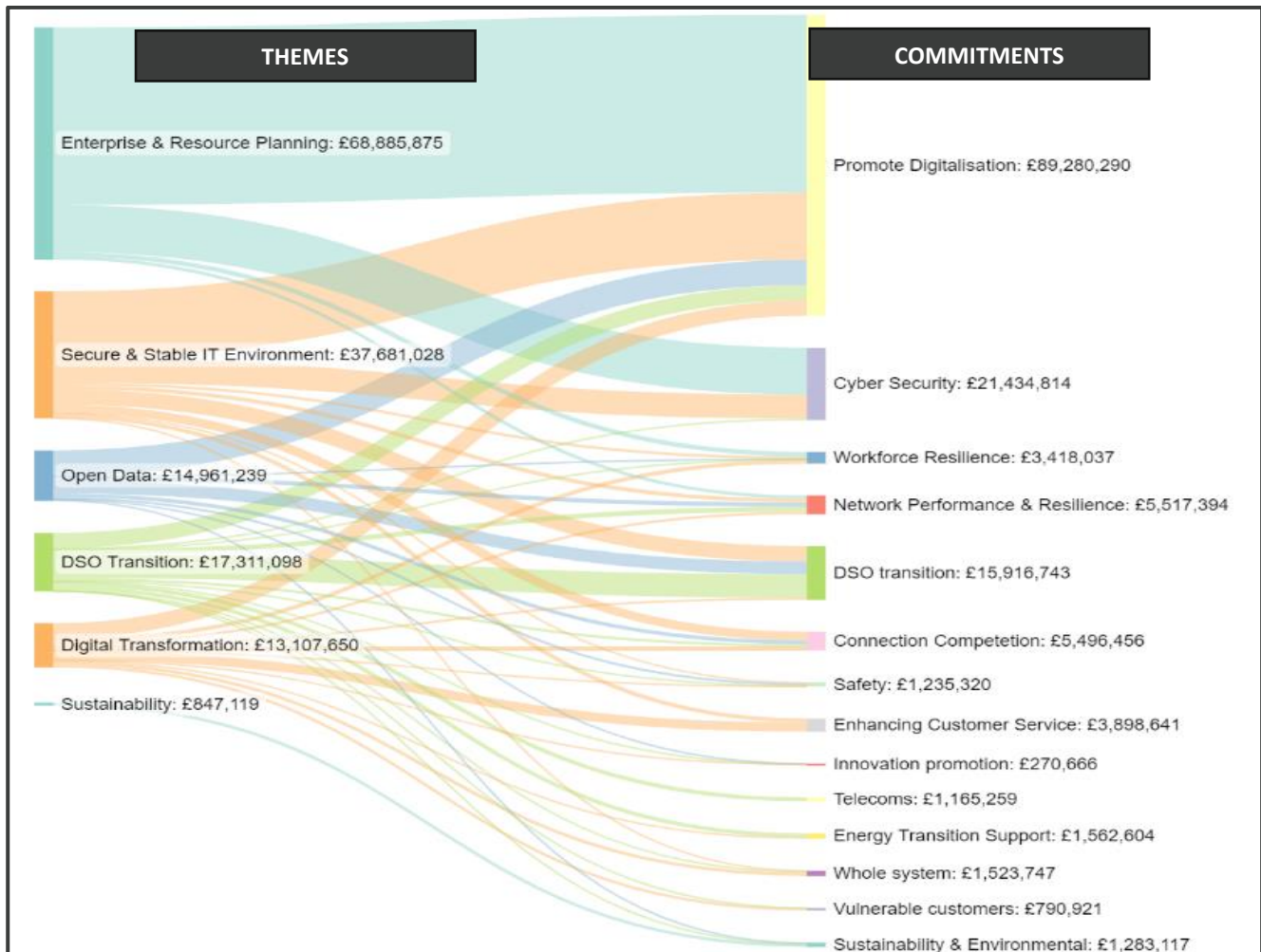
The strength between the alignment from IT project to commitment is only part of the picture. It is essential to get insight into the **quantum of investment** against each of the commitments. This view would enable us to get a sense of how the IT investment costs are apportioned to the outcomes. It also tells us how sensitive the commitments are to specific IT projects.

To do this we need to link the costs of each IT project onto their associated commitments by apportioning its investment cost. For example, if a project was 'fundamentally' aligned with three commitments we apportioned the investment into three parts. For projects which are both fundamentally and supportively aligned with respective commitments we assumed that costs could be split in the ratio 2:1 in favour of the fundamental alignment. It is important to note that our inferences are illustrative rather than definitive, but this is broadly a logical extension of NIE Networks own mapping. The results of our analysis are shown on the following page.

Looking left to right, IT themes are on the left and the commitments are on the right. The lines show the 'flow' of investment from IT projects to commitments. For clarity and simplicity, we chose to use only the RP7 OpEx and CapEx figures and ignore recurring OpEx and RP6 costs. This is because we are just attempting to illustrate a principle and not recommend an allowance.



Figure 26 - The flow of RP7 investment from Themes to Commitments



We made the following inferences from the analysis.

- The Promote Digitalisation commitment enjoys the most overall investment with circa 60% of the total.
- 60% of the Promote Digitalisation investment comes from the ERP theme with the remaining 40% coming from four other themes.
- Cyber security and the DSO transition are the next biggest themes. Together, the three commitments of cyber, DSO and Digitalisation take up 80% of the entire investment. This leaves the remaining 12 commitments sharing the remaining 20% of the investment.



7.5.5 Conclusion in respect of investment stewardship

It is understandable that, when network utilities are keeping pace with digital technology and there are greater and increasing expectations from customers, the commitments: promote digitalisation; DSO; and Cyber Security, together form such a significant proportion of the total RP7 investment.

It is also reasonable to assume that NIE Networks would focus its attention and effort on the higher cost projects. However, if this were to be the case, then, by the same logic, 80% of the commitments receive 20% of the resources / management attention.

This analysis has significant limitations: in the absence of quantified benefits or assigned strategic priorities to meeting the commitments, it adds to our view that customer benefits across a broad range of categories may be at risk of realisation.

Our recommendation is that NIE Networks provide more evidence of their stewardship of investments or realisation of benefits across their stated commitments from across RP7. For example, if we look at Project AM01 in which NIE Networks advocate extending and deepening their reliance on the Copperleaf solution, it was first procured September 2020. It is unlikely to be efficient to interrogate the market each time there is an upgrade decision (which is essentially the rationale for Option 3 in AM01). However, after three years in operation, and faced with a material investment of £3333, it would be helpful to refer to the original procurement strategy and / or give an indication when a review of the market for other solutions may be appropriate.



FINDINGS



8 FINDINGS

8.1 CONTEXT

We are cognisant of the many concurrent challenges that NIE Networks has had to consider in its planning and submission. In addition to developing the electricity network (which is outside of our scope) the company must replace its enterprise systems, develop DSO capability, digitise its operations and position the business to help address the challenges of Net Zero – all whilst maintaining secure systems.

The Company engaged with us throughout the investigation and provided prompt and helpful answers to our questions. Moreover, during the review process, we have seen demonstrable evidence of the contribution made by many of the NIE Networks team. We have shared our findings to NIAUR against the background of NIE Networks providing a substantive, professional, well-structured and accessible submission.

8.2 INTRODUCTION

Throughout this report, as part of each perspective, we have assessed our findings through the prism of the four questions we established in section 1.4. In this section we describe our findings and in each of our conclusions we address the programme, its delivery and the process of regulatory determination.

8.3 THE KEY QUESTIONS

8.3.1 Is the programme scope appropriate for a UK DNO?

Medium-high level of confidence - In this question we are focused on the strategy, scale and broad scope of the programme commensurate with NIE Networks meeting its obligations as a UK DNO. With this relatively narrow angle of determination, we have medium to high confidence that this programme scope is appropriate to a UK DNO in 2023.

NIE Networks makes a good case for core projects such as the ERP replacement; and tackles themes such as digitalisation, cyber security, and DSO transition. Strategically, the scope aligns with the needs of a DNO in 2023 and is broadly comparable to the projects put forward by GB DNOs as part of the RIIO-II price control. In determining the investments, NIE Networks has undertaken an options analysis for each project to ascertain the best project. However;

- **There are some weakly justified projects that could potentially be moved or removed** - There are a small number of projects and approaches where we have questioned the strength of their justification. These could potentially be moved out of the RP7 programme which would likely have the added benefit of strengthening its overall deliverability.



- **There may be scope for adding further sustainability projects** - we noted there are a lower number of sustainability projects than we might anticipate, but without a more complete mapping to commitments we cannot infer whether this is sufficient or not.
- **There were some weaknesses in the options analysis** – Our view is that the submission would be stronger if the options analysis considered more non-IT alternatives and was more equivocal in the treatment of favoured versus discarded options.

The cost of the programme is significant at c. £189M but this figure is broadly understandable due to the significant ERP replacement and building of digital and DSO capabilities. For the avoidance of doubt, this should not be inferred as a statement as to whether these costs are all efficient.

8.3.2 Has NIE Networks the breadth of capability to manage the programme?

Medium to high level of confidence - This question is concerned with the delivery capability of NIE Networks and its identified partners. We must have reasonable confidence in NIE Networks' ability to deliver the various elements of the IT programme, both at project and programme level.

NIE Networks has put forward a professional approach and an experienced team. Senior and experienced business leaders have engaged with us and NIAUR during our face-to-face meetings. We have also met subject matter experts on our calls and note the supporting documents provided by credible external advisers and delivery partners. We also understand that the programme has good governance and executive oversight.

NIE Networks' submission is substantive, detailed and well-structured and NIE Networks has engaged with our review and provided timely and helpful answers to our questions. The submission showed a good understanding of ERP implementation, DSO challenges and reasonable cyber security projects, and from a customer basis, sound projects around digital transformation. NIE Networks has been able to demonstrate knowledge and previous experience of delivering an ERP replacement.

Our confidence is moderated because.

- We have not conducted detailed assurance on inherent deliverability capability (because this would have been outside of the scope of our engagement).
- We identified a number of risks to customer value.
- There were gaps in strategic planning. These gaps included the lack of prioritisation of the portfolio of projects and there was insufficient detail in (for example) the explanation of the complexities of transition to a cloud-based strategy.

On balance, however, these factors support our medium to high-level of confidence in NIE Networks and its delivery partners to deliver specific and individual IT projects of the broad type proposed in RP7.



8.3.3 Can the programme be delivered in RP7?

Low confidence – In this question we are concerned with whether NIE Networks can practically deliver the programme in its entirety within the RP7 timescales. We have low confidence that such a complex, interdependent and sizeable programme can be delivered within the RP7 timescales.

We have balanced the unprecedented scale, size (compared with GB DNOs) and complexity of the programme together with the uncertainties in its programme against NIE Networks historical delivery experience (and our medium to high confidence in its intrinsic delivery capability).

This plan presents an undoubtable and exceptional delivery challenge. Despite NIE networks' experience of delivering smaller IT programmes, we have low confidence that it can deliver this entire programme within RP7. It is much more likely, in our view, that the size and complexity of the challenge will overwhelm its progress. To match this unprecedented delivery challenge, we require the superior quality of evidence that is likely to arise during detailed planning and/or from the analysis and synthesis of existing information.

- **Unprecedented scale of programme delivered by a relatively small DNO** – NIE Networks does not have historical experience of delivering a programme of this scale. NIE Networks' own analysis points to the fact that larger GB DNOs are delivering programmes of comparable size.
- **Programme complexity and interdependency** – This is a highly complex and highly interdependent project schedule which is very likely to drive conflicts and resource issues if projects in ERP (or other linked parts of the programme with strong dependencies) start to slip.
- **No prioritisation of projects** – We believe that it is important that the portfolio of projects is prioritised. We accept that the ERP theme would be most likely deemed 'mandatory'. However, there are other projects which could potentially be postponed if NIE Networks faces unanticipated constraints. Consequently, it would be helpful if the projects were prioritised using a methodology which was at least informed by a project's interdependency with others in the programme, benefit provided to customers and level of support to the RP7 commitments.
- **Uncertainty in costs** - NIE Networks raised concerns about the certainty of some ERP costs and asked for several price control reopeners. We understand from NIE Networks that the scope of these costs is limited to one SAP project, but nevertheless, this does not drive our confidence in this aspect of the programme planning given the intrinsic nature of this project.
- **Resilience to unplanned external changes** – There is limited evidence of planning for unforeseen changes in the wider environment and how NIE Networks might manage such issues if they occur.



- **No interim architecture, lack of golden thread** – There are critical planning features which we believe are missing in the submission evidence to give it strength, such as interim architecture models. In addition, the link between business requirement, capability requirement and technology choice are not clear in places.
- **Delivery of outcomes must also be considered** - The IT projects are not just concerned with the ‘outputs’ of delivery of technical capability, but also delivering on the RP7 commitments. Our view is that the mapping to commitments of benefits and investments must be more complete to be assured of their delivery.

8.3.4 What are the implications for the determination of efficient costs?

Low confidence – This question is concerned with whether we have sufficient confidence to propose allowances for efficient costs on a project-by-project basis. We must be reasonably confident on the stability of the proposed costs and that we can also predict the overall impact on the programme and on NIE Networks’ customers of any disallowance.

Part of our assessment focused on the benchmarking of cost and in this regard Gemserv considered the positioning of rates to be fair and we have determined that no adjustments or additional challenges are necessary at this stage. It is also our opinion that given that many of the rates and cost elements provided will be subject to competitive procurement that further benchmarking of SI rates would provide little further insights.

We cannot make a fully informed and effective recommendation for funding (or disallowances) without greater insight into how the IT investments are prioritised, drive quantifiable or measurable benefits and support the totality of NIE Networks’ own RP7 commitments. The many dependencies between the projects and themes exacerbate the risk that making determinations of efficient costs at this stage of planning maturity could have unintended consequences.

In particular;

- **More description of quantitative and financial benefits is required**- it our view that more can be done to transform measurable benefits (such as speeding up a process) into clear metrics – and for some of these to be turned into financial indicators. Describing ranges of benefit would have been appropriate and proportionate at the current maturity of planning.
- **The incomplete picture of benefits/costs mapping of projects to commitments leads us to have less confidence in the stewardship of investment and benefits against the RP7 commitments** - As we do not have a full picture of how commitments are mapped to all investment costs and benefits across the entirety of the price control we are unable to comment on the completeness of the exercise nor can we understand the implications of removing a project on the commitments that NIE Networks makes to its customers.
- **Realisation and tracking of benefits may risk return of investment** – in the absence of quantified benefits or assigned strategic priorities to meeting the commitments, it adds to our view that the realisation (and/or measurement) of customer benefits across a broad range of categories may be at risk with commensurate



impact on customer value. There is no clear benefits tracking and (against a landscape of internal organisational changes) the understanding of the value projects can bring to stakeholders may be lost.

- **There is no prioritisation of projects**- The lack of prioritisation of projects (and the rationale behind this prioritisation) means that we cannot be assured of the consequences of the overall programme on removing funding for a particular project.

8.4 RECOMMENDATIONS

NIE Networks is given an opportunity to further analyse, refine and mature its programme and project plans to increase confidence in timely and within-budget delivery, enabling a bottom-up determination of cost.

We have explained that the submission is substantive, well-structured and accessible. We do not feel that it would be necessary for NIE Networks to wholly resubmit, substantially redraft or add substantive artefacts to its RP7 submission to improve confidence in the programme. Nor would it be sufficient, in timescales of a few months, to lightly correct the text in the locations where we have sought clarification or challenged assumptions.

Instead, we invite NIE Networks to consider further, targeted **analysis and synthesis of the information already available** to the programme and to supplement it with the evidence that arises from detailed planning. This would be necessary to improve our confidence in the deliverability of the programme *in its entirety* as well as our ability to opine on efficiently incurred costs.

We have described key areas where we consider further analysis by NIE Networks would be insightful (project prioritisation, some quantification of benefits and a more complete mapping of cost and benefits to each the RP7 commitments). We believe that sufficient time should be allowed for NIE Networks to ensure a thorough review of the programme's 'uncertainties' and that this analysis should occur over a period two years, to allow time for the results of further detailed planning (which NIE Networks will be required to do anyway as part of the implementation phase). In this way, any additional information provided to NIAUR at the end of the 'planning period' will reflect a more mature plan. We thought it helpful to summarise our recommendations with some insight into the degree of effort required to increase our level of confidence.

1. **A resubmission is not required** - It is not necessary to substantially redraft the report which broadly makes the case for scope and size of the required investment.
2. **The quality of evidence required can be provided without a major reporting burden** - More certainty of cost and benefit information and more certainty in scheduling should emerge through the detailed planning that would occur anyway in the next phase of the programme. The levels of analysis and synthesis should be reasonable, proportionate and informed by the risk to customers. This intentionally limits the reporting burden on NIE Networks.



3. **More visibility and stewardship of benefits versus the RP7 commitments is required** - There should be more visibility of how the quantum of costs and benefits map to the RP7 commitments. Currently, only the alignment of costs is submitted and there few quantifiable benefits in the submission.
4. **Prioritisation of projects in the programme is essential** - We would expect projects to be prioritised, informed by a sensible level of analysis around the dependency of a project on others, its benefits to customers (or to the business) and its contribution to the RP7 commitments.
5. **Consideration of the points in this report** - We would expect NIE Networks to review and consider the projects where we have identified a risk to customers or made recommendations. In many cases, we believe additional assurance and or contextualisation would be sufficient to improve confidence significantly.
6. **Ongoing engagement with NIAUR required** – We recommend that in any period of replanning, NIE Networks keeps NIAUR fully apprised of progress and apprised of key decisions being made in order to facilitate timely approval of detailed plans.



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