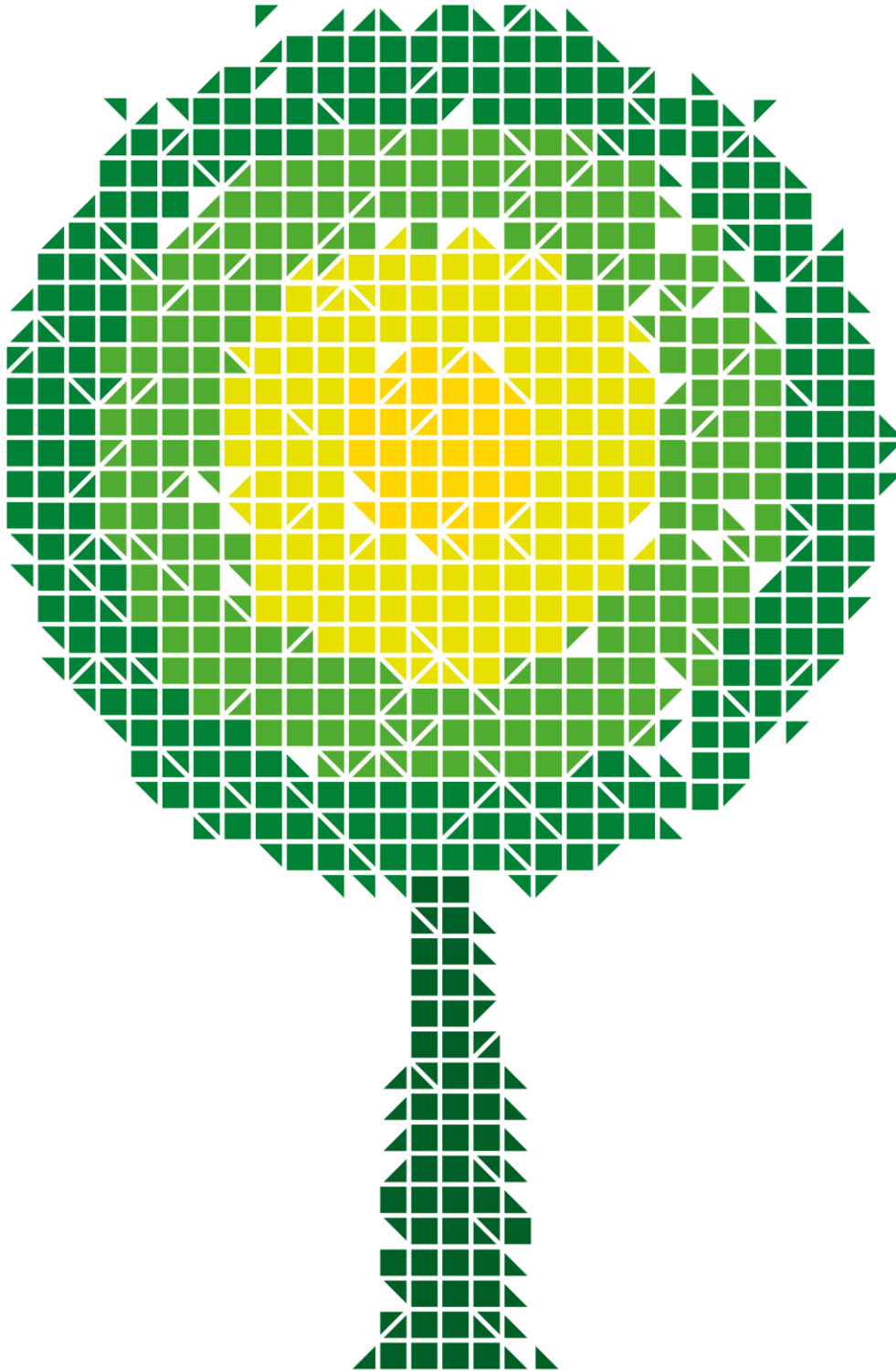


RP6 – NIE Networks Market Operations Non Network IT Assessment

10/02/2017

Version 1.3
Final





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CHANGE HISTORY

VERSION	STATUS	ISSUE DATE	AUTHOR	COMMENTS
0.1	Draft	14 th November 2016	Conall Bolger	Draft for internal technical review
0.2	Draft	22 rd November 2016	Conall Bolger	Draft for internal technical review
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DOCUMENT CONTROLS

REVIEWER	ROLE	RESPONSIBILITY	DATE
Malcolm Rowley	Principal Consultant	Subject matter expertise & technical reviewer	18 th November 2016
Malcolm Rowley	Principal Consultant	Subject matter expertise & technical reviewer	23 rd November 2016
Malcolm Rowley	Principal Consultant	Quality and technical review	28 th November 2016
Caspar Swales	Head of Economics and Efficiencies	Owner client requirements and document approval.	9 th December 2016
Caspar Swales	Head of Economics and Efficiencies	Owner client requirements and document approval.	9 th February 2017



1. INTRODUCTION & BACKGROUND

Northern Ireland Electricity Networks (NIE Networks), the Northern Ireland Distribution Network Operator (DNO), undertakes a Market Operations role unlike other DNOs. This dissimilarity complicates benchmarking NIE Networks against those companies. The Utility Regulator (UR) tendered for support in reviewing IT costs associated with that Market Operations function. Gemserv was appointed on 15th September 2016 to provide support to the UR in assessing costs associated with “IT, Market Operations & Enduring Solution” as part of “Northern Ireland Electricity Networks Price Control for period 1 October 2017 until 31 March 2024” (RP6).

This report is intended to inform the UR in preparing its Draft Determination (DD) and is the first deliverable produced under work order CON/23/16 dated the 15th September 2016.

Please note that unless stated otherwise, all quoted capex and opex numbers are in 2015/16 prices.

1.1. REPORT STRUCTURE

The UR is required to determine an efficient level of spend for the Market Operations Non Network IT spend (“NIE Networks’ proposals”) in scope of this paper (as described in Section 1.2). This paper focuses on providing the UR with a view to inform their determination.

This paper is structured as follows:

- a) The remainder of Section 1 describes the scope agreed with UR for this paper;
- b) Section 2 outlines the approach adopted by Gemserv in performing the analysis of NIE Networks’ submission, and sets out some key assumptions that informed that review;
- c) Section 3 analyses the impact of the Managed Service Provider Agreement upon NIE Networks’ proposals and investigates whether credible efficiencies are possible in those numbers;
- d) Section 4 contains Gemserv’s more detailed analysis of the capex elements of NIE Networks’ submission, focusing upon Market Operations Non Network IT spend, including Tibco and Enduring Solution spend;
- e) Section 5 describes Gemserv’s assessment of the opex elements of NIE Networks’ submission, focusing upon Market Operations Non Network IT, Enduring Solution Operating Costs and Other Operating Costs associated with Market Operations;
- f) Section 6 summarises this paper’s findings, their impact on NIE Networks’ proposals, and proposes a set of next steps for progressing this analysis; and
- g) Appendix 1 lists the Non Network IT projects that were agreed with UR as being in scope of this analysis.



1.2. SCOPE

Gemserv were instructed to focus their analysis upon the Market Operations portion of the Non Network IT budget for this work package. In summary, the scope includes: Market Operations Non Network IT proposed spend; Enduring Solution opex; Tibco costs; the Managed Service Provider agreement; and additional Market Operations operating costs. In more detail, the following was agreed as being in scope of this paper¹:

- i. Assessing the following aspects of the Non-Network IT Business Plan:
 - a. Reviewing the twenty-nine projects with an allocation to Market Operations (listed in the Appendix) and assessing them across the three categories of project: Infrastructure; Telecoms; and Applications.
 - b. Assessing the proposed costs of those projects to determine whether they are fair and reasonable for an efficient organisation.
 - c. Ensuring that the shared capex and opex apportioned to Market Operations is fair and correct.
 - d. Analysing the level of optionality associated with those Market Operations projects to provide the UR with the ability to identify additional cost savings.
 - e. Reviewing NIE Networks' proposed IT Strategy to assess whether it is appropriate within the context of RP6.
- ii. Review of the Market Operations Business Plan including:
 - a. Ensuring consistency between the Non Network IT figures Market Operations proposals and the Non-Network IT Business Plan.
 - b. Review of the Non Network IT costs for apportionment purposes.
 - c. Analysis of costs in relation to Enduring Solution opex.
 - d. Review of Tibco costs and the apportionments is in line with the UR's and CER's agreement.
 - e. Assessing the other operational costs associated with Market Operations (e.g. Finance, HR, Fault & Emergency etc.)
- iii. Initial assessment of the costs of the managed service provider contract as it will drive much of the IT spend during the RP6 price control window. As the present contract terminates in September 2017 and its replacement is subject to ongoing procurement there are constraints on this analysis for the DD. Gemserv understand the final costs will be available next spring when there will be an opportunity to reappraise the recommendations in this report before the Final Determination (FD).
- iv. Benchmarking of appropriate elements of the costs above relative to performance within RP5.

1.3. OUT OF SCOPE

The below areas were agreed for this work package as being outside the scope of Gemserv's analysis of NIE Networks' submission:

- a) Any projects within the Non-Network IT Business Plan or elsewhere within NIE Networks' submission that are allocated to Connections, Transmission and/or Distribution.
- b) Costs in relation to contestability of connections are not covered within this assignment.

¹ Scope document "Gemserv RP6 Review – Scope of assessment to inform Draft Determination" was approved by UR on 20th October 2016.



- c) IT costs in relation to D602 ("Investing for the Future") of the Networks Investment Plan.
- d) Capex costs in relation to Metering under the Market Operations Business Plan.
- e) Ensuring the proposed allocation of costs within the Connections category of the Non-Network IT Business Plan are accurate and reasonable.
- f) Reconciliation of Market Operations Non Network IT figures and Connection allocation across the Business Plan and the Networks Investment Plan to ensure consistency across the submissions and accuracy of the proposed allocations.
- g) Building a financial model to inform the analysis of Market Operations costs and Connections Allocation.
- h) Analysis of costs related to meter installations changes and meter recertification
- i) Assessment of costs in relation to meter reading during the price control.

2. APPROACH

This section describes how Gemserv undertook their analysis of NIE Networks' submission and contains a number of assumptions that were made in developing this report.

2.1. ANALYTIC APPROACH

The process to assess NIE Networks' proposed Market Operations Non Network IT spend involved the following activities that are summarised in Figure 1.

- a. Preparation of a report document setting out its analysis of the items within the above scope.
- b. Agreement of scope with UR (set out in Section 1.2).
- c. Benchmarking of relevant costs against RP5. All references to RP5 total figures are based on a combination of forecast and actual expenditure numbers. According to NIE Networks submissions, the actual figures are based on actual spend up to September 2016.
- d. Workshops with NIE Networks and UR at which their submissions, approach and responses to the formal queries were subject to detailed challenge.
- e. Detailed review of NIE Networks' submission, query responses and other necessary documents.
- f. Submitting questions to NIE Networks via UR's formal query process and analysing their responses.
- g. Application of previous RP5 experience and other relevant subject matter expertise.



Figure 1: Inputs to this assessment

2.2. ASSUMPTIONS

Set out below are a number of assumptions that have informed Gemserv's preparation of this document.



- a. **I-SEM** – any significant I-SEM related systems capex will be undertaken during RP5 and is excluded from this analysis.
- b. **Smart Metering** – there will not be a significant smart metering roll out in NI during RP6.
- c. **Retail Harmonisation** – the retail markets in NI and Ireland will remain harmonised during RP6.
- d. **NIE Networks' role consistent** – there will be no significant changes to NIE Networks licence obligations.



3. MANAGED SERVICE PROVIDER AGREEMENT

NIE Networks have adopted a largely outsourced model of IT provision via a Managed Service Provider Agreement with an internal IT team of 14 FTEs for an organisation of approximately 1300 employees. As Figure 2 shows, the Managed Service Provider Agreement day rate directly drives a significant volume of capex (£4.13m over RP6)² associated with the Market Operations Non Network IT submission (assuming those costs are allocated consistently with the Non Network IT Business Plan). More profoundly though, as the Managed Service Provider is omnipresent in delivery of the IT functions, how that function is undertaken influences nearly all ICT costs.

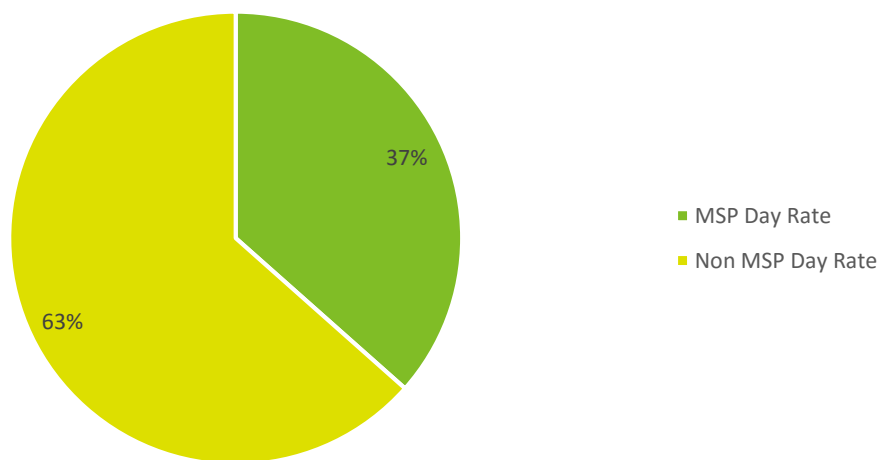


Figure 2: Market Operations Non Network IT capex driven by Managed Service Provider Day Rate

Below we have reviewed the following areas in relation to the Managed Service Provider Agreement:

- i. Benchmarking of the proposed Managed Service Provider Agreement rates (Section 3.1);
- ii. Analysis of outsourcing versus in house approaches to ICT (Section 3.2);
- iii. Consideration of third party service providers overseen by the Managed Service Provider (Section 3.3);
- iv. Assessment of potential efficiencies attainable under the Managed Service Provider Agreement interaction (Section 3.4); and
- v. Summary of Gemserv's proposed recommendation in relation to the Managed Service Provider Agreement (Section 3.5).

3.1. BENCHMARKING

NIE Networks' estimate of the blended proposed day rates (£550) attainable under the Managed Service Provider agreement appears reflective of the GB market. Historically, NI has been the lowest cost region within the UK³ suggesting that a lower rate may be attainable. The UR has also determined for water and energy price

² Based on analysis of figures provided by NIE NETWORKS in response to query URQ141.

³ [ONS, 2010](#)



controls including various regional cost relativities such as Regional Prices Adjustment (water capex), power cost differentials (water special factors for benchmarking opex) and regional wage adjustments (water and gas benchmarking opex). Gemserv does recognise that the final rate will be an output of the current procurement process.

Gemserv ran some simple statistical tests on figures provided by NIE Networks⁴ (mean, standard deviation, median) and compared them to the proposed £550. This work supported a conclusion that this figure would not be an unreasonable blended rate, if the NIE Networks provided figures are reliable.

In addition, Gemserv benchmarked a number of the resource types proposed to be contracted via the Managed Service Provider agreement against our experience of procuring similar roles in London. The output analysis is set out in the table below. NIE Networks' expectations do not seem to be out of alignment with the GB market.

RESOURCE TYPE	NIE NETWORKS PROPOSED DAY RATE	COMMENTS
Telecoms Engineer	£650	Dependent on location and contract length, it appears to be a fairly competitive rate. A rate of £700-£800 would not be uncommon for this type of infrastructure resource.
Managed Service Rate	£550	This rate was viewed as competitive. A smaller company would expect to pay in the range of £650-£700. The challenge would be ensuring that lower grade work is performed by suitably junior resources.
Mobile Working Resource	£850	The costs can range from £600 for junior developers to £900 for fully experienced resources. For some of the projects, there may be an argument for agreeing a fixed rate with the day rate only kicking in in the event of change, though a fixed price could price in risk.
Systems Integration Resource	£850	SAP resources are at a premium in the market at the moment. It is not uncommon to pay from £775 to £830 for this kind of resource, though often there is a payment for a PM at a premium rate. With that consideration, this rate is probably reasonable.
Vendor Resource	£850	Developer rates are very hard to benchmark as it is dependent on the solutions underlying the software. For an international company delivering a significant project it is probably reflective of market rates.

Table 1: Benchmarking vendor rates against GB experience

⁴ Figures from recruitment consultants Alexander Mann provided by NIE NETWORKS in response to query URQ117. Gemserv inflated those figures into 2015/16 pricing.



The Best and Final Offer (BAFO) stage of the procurement process is expected to close in March 2017. It means that more final Managed Service Provider cost figures should be available in consequence, to inform the final determination better.

3.2. OUTSOURCING VS IN-HOUSE

As per their overall IT Strategy (discussed in Section 4.8) NIE Networks are continuing with an outsourced ICT model, in line with their practice under RP5. They quote the following rationale⁵ for this largely outsourced single source provider approach:

- Limited scale of services likely to be outsourced, and – relatively – small value of contract(s);
- Relatively small user base of services as compared to other utilities and organisations, and the size at which the industry tends to multi source managed services;
- The complexity of managing multiple suppliers to deliver inter-dependent, seamless, end to end services with effective management of service levels and relationships;
- Whilst this management challenge is surmountable, NIE Networks would need to increase its associated capabilities - the scale of the managed services indicates there is no benefit justification;
- Market insight reveals that, amongst sourcing decision makers globally, control has emerged as a core theme, evidenced by the growing preference for direct contracting; and
- Inclusion of the delivery of selected IT projects detailed in the IT Strategic Plan will increase market interest.

Much of NIE Networks' rationale relates to the need for scale within a procurement making it attractive to potential participants. In theory, a large procurement should attract a wide selection of potential participants, resulting in competition for the service. NIE Networks' previous experience on this and other technical procurements does support a connection between value of the contract and level of interest. Ten (10) organisations initially participated in this Managed Service Provider procurement, suggesting there is some validity to this argument.

For NIE Networks to adopt an insourced model, they would require significant increase in their staffing levels. They quote the following estimate from Capita: "Approximately Capita 65 FTE are engaged in an average month to support NIE Networks, split as: 35 FTE on application support, 20 FTE on infrastructure support and 10 FTE on service management/service desk".⁶ These costs would potentially be of the magnitude of £15m-£26m over the period of RP6 in salary costs alone.

In that scenario, it is likely that NIE Networks would still need to contract in multiple suppliers and would incur additional consultancy support costs for development of relatively specialised instances of hardware and software.⁷

⁵ In response to query URQ064.

⁶ NIE Networks IT Strategy, provided in response to query URQ064.

⁷ As mentioned in Section 4.88 it is the role of NIE Networks to decide how they operationally deliver their licence obligations.



3.3. OTHER SERVICE PROVIDERS

The Managed Service Provider manages a range of other third party providers and, as such, there is an opportunity for mark ups to be compounded on each contract, threatening excessive costs upon end customers. The Managed Service Provider should not be loading an additional layer of return on the figures of other providers. NIE Networks noted that there was no uplift on their Managed Service Provider rates for these third party providers, suggesting that NIE Networks were not excessively adding costs onto pass through charges. NIE Networks reconfirmed at the workshop on 28th October 2016 that these costs were being passed through without mark-up. This approach would be a positive development on RP5, in which Gemserv understands a 5% mark up to have been permitted.

3.4. POTENTIAL EFFICIENCY

There are a number of factors that should apply downward pressure upon the proposed Market Operations Non Network IT capex levels.

- The relevant licence obligations are remaining largely consistent across RP5 and RP6, meaning the functional requirements from a regulatory perspective have not changed significantly.
- The existing support model is largely a traditional onshoring approach which has a cost impact. Technology improvements, server virtualisation, and potentially cloud computing during the RP6 period, should mean a higher degree of offshore support. It is likely that respondents to the Managed Service Provider will propose substantive offshoring support to maximise their opportunity of winning the work. These technological changes and alterations to the traditional support approach should translate into significantly lower capex costs.

Without visibility of the final Managed Service Provider figures from the procurement process, it is challenging to quantify what the impact of that approach should be on the figures for the DD. Gemserv would note that offshoring can dramatically affect the service provider day rates. While uncertain about the specific figure, Gemserv would view a 10% reduction as a reasonable but challenging target. This figure translates to a reduction of £413.2k in their proposed capex that we are recommending to the UR.

3.5. MANAGED SERVICE PROVIDER RECOMMENDATION

Below are set out Gemserv's recommendation in relation to the Managed Service Provider Agreement.

1. £413.2k of spend should not be permitted due to potential efficiencies to be gained via NIE Networks' support strategy.



4. CAPEX

NIE Networks have proposed approximately £41.88m of Non Network IT & Telecoms investment, of which £36.1m is intended to be recovered through use of system charges and £5.79m is intended to be recovered via connections charges. This figure compares to a £16.24m spend over RP5.⁸ £11.7m of the RP6 submission specifically relates to Market Operations which is the focus of the analysis within this section. Gemserv has reviewed NIE Networks' capex proposals from both bottom up and top down perspectives. The outcomes of that analysis are detailed in the following sections:

- Section 4.1, Tibco – reviews the proposed capex related to Tibco over RP6;
- Section 4.2, Small Projects – considers the category of Small Projects within NIE Networks' proposals;
- Section 4.3, NIE Networks Programme Management & Backfill Costs – analyses the proposed programme management and backfill costs that are included within a number of the Project Briefs submitted by NIE Networks;
- Section 4.4, Efficiencies – considers the efficiencies built into NIE Networks' procurement proposals and their intended investment in projects to enable efficiency gains over the price control period;
- Section 4.5, Capex/Opex Allocation Risks – discusses the level of risk of proposed spend being incorrectly allocated to capex;
- Section 4.6, Refresh Cycles – reviews the proposed refresh timelines within NIE Networks' proposals and assesses whether they are appropriate;
- Section 4.7, Project Optionality – analyses the level of optionality associated with the proposed capex investment;
- Section 4.8, IT Strategy – reviews the appropriateness of the proposed IT Strategy from the perspective of conformity with regulatory obligations;
- Section 4.9, Capex Consistency – assesses the consistency of the Market Operations Non Network IT capex across the various constituent documents of NIE Networks' submission; and
- Section 4.10, Capex Summary– sets out Gemserv's recommendations in relation to capex.

Where appropriate, costs are benchmarked against comparable cost items within the experience of the review team and against RP5 spend.

4.1. TIBCO

There are two main initiatives proposed in relation to Tibco during RP6: Tibco Architecture Refresh (RP6-004) and Tibco Application Refresh (RP6-048). This section reviews these proposals in the following manner:

- reviewing the requirement for Tibco upgrades during RP6 (Section 4.1.1); and
- consideration of Tibco apportionments across NI and ROI (Section 4.1.2).

⁸ Appendix 3 contains some commentary on the Project Durations that have impacted upon Non Network IT capex and benchmarks that capex against RP5 spend. The UR should note that this total forecast number represents a £1.686m overspend on their RP5 Non Network IT permitted spend.



NIE Networks allocate the Tibco ongoing support costs under their Enduring Solution Operating Costs, so those are addressed via review of that subject in Section 5.2.4.

4.1.1. Tibco upgrades

The Tibco Architecture was installed during 2015 and Gemserv understands that it went live during 2016. It is expected that there would be an upgrade of the architecture during the RP6 period. NIE Networks are proposing an upgrade between January 2020 and June 2020 which would suggest a four-year refresh rather than the five-year refresh assumption. This timing leads to a query of whether elements of that spend could be deferred. Gemserv are querying this timing with NIE Networks.

In considering the proposed updates to the Tibco application, Gemserv would question the assumptions underpinning the upgrade schedule during RP6: three Tibco upgrades (£250.3k per upgrade); and four Schema releases (£49.5k per release).

Under RP5 proposals, there was an assumption of two releases per year with one related to systems and the other relating to management of configured documents. Neueda, the assurance body for the Northern Ireland retail electricity market, stated that there had been little systems movement during the RP5 period. They pointed to two upgrades affecting NI: the introduction of a market message in October 2014 and the upgrade to Schema version 11.0 in July 2016⁹.

Gemserv does recognise that it would be sensible to have a fund available for upgrades to the Tibco application arising out of retail market changes. However, we question the proposed incidence of three Tibco upgrades and four Schema releases, assuming the following:

- No requirement for I-SEM, smart metering or deharmonisation investment (all assumed by NIE Networks);
- Operational spend for supporting Tibco being covered under Enduring Solution opex;
- A very limited number of upgrades impacting on NI during RP5; and
- The architecture upgrade projects are adequately justified.

NIE Networks do raise a point that a number of software components would have varying end of life support dates over RP6. They point to an intent to consolidate those into the Tibco upgrades.

Gemserv proposes that the spend permitted for the Tibco Architecture upgrades be predicated upon an assumption of four Schema Releases and two Tibco upgrades, leading to a saving of £250.3k.

4.1.2. Tibco Apportionment

As stated by UR (and NIE Networks in discussing Tibco funding during RP5), the costs of Tibco are respectively funded north and south in the proportion of 50:50 for capex and by customer numbers for opex¹⁰. In effect NIE

⁹ It introduced debt notification and the essential plan maintenance flag. Debt notification had been working in NI since 2012 and NIE Networks was not planning to use the Essential Plant Maintenance flag.

¹⁰ See letter "Arrangements for Joint projects" dated 10th April 2013 from CER and UR to NIE Networks.



Networks should pay equal shares for capex and pay 28% of opex, provided the expenditure is not incurred for the benefit of only one jurisdiction.

In both architecture upgrade project proposals, NIE Networks state that they are assuming that they co-fund these projects with ESN 50:50. Gemserv has no reason to doubt these claims. As the projects proposals relate to capex spend, the proposed distribution of capex seems consistent with the regulatory arrangements on joint projects.

4.2. SMALL PROJECTS

NIE Networks have proposed £2.22m capex for as yet unidentified Small Projects of which 10% relates to Market Operations. This figure translates to an average spend of £35k per annum during RP6. In principle, it is not unreasonable to include some manner of allowance for smaller projects that may arise unexpectedly and it is consistent with previous practice.

These are projects that may arise, usually as a result of enabling other Non Network IT investment. In RP5, NIE Networks forecast (including actuals to date) a spend of £1.56m under this category which, if we assume a similar Market Operations allocation as RP6, translates to a spend of £29.6k per annum.

On the basis of consistency across price control periods, Gemserv is proposing that a per annum permitted spend of £30k would seem reasonable, totalling £195k across RP6. This figure translates to a £27.5k reduction on NIE Networks' submission.

4.3. NIE NETWORKS PROGRAMME MANAGEMENT & BACKFILL COSTS

In relation to their proposed project durations, there were a number of places within the project submission in which there were some apparent discrepancies between the NIE Networks submission and Gemserv's understanding¹¹. The gaps in the numbers were explained by a 15% internal project management charge plus the costs of NIE Networks backfilling those roles within their organisation.

These figures seem to be a new feature in the RP6 submission and, to Gemserv's knowledge, were not employed within the RP5 proposals. NIE Networks' IT overall outsourcing model has not changed considerably and the number of directly employees is similar to those proposed in RP5. On this basis we do not consider these additional costs have been proven as necessary for an efficiently managed organisation.

For the Market Operations allocation, the UR should not permit £215.5k for internal project management and for backfill costs.

4.4. EFFICIENCIES

This section reviews the area of proposed efficiency savings within NIE Networks' submission. It discusses efficiencies as follows:

¹¹ There was provision for this charge within the spreadsheets.



- Section 4.4.1, Procurement Savings – considers the level of efficiency baked into their procurement processes, excluding the Managed Service Provider procurement (discussed in Section 3).
- Section 4.4.2, Efficiency Projects – scrutinises the proposed efficiency projects and analyses the trade-offs relative to the proposed per annum efficiency target of 0.7%.

4.4.1. Procurement Savings

NIE Networks maintained that they have already incorporated procurement savings assumptions into their proposed RP6 figures. They noted: “[t]hese assumptions are based upon savings achieved in previous projects and range from 30% to 40%”¹². Gemserv requested they substantiate these claims in order to support their claim of efficiency within their procurement processes beyond those to appoint a Managed Service Provider.

In response, NIE Networks provided a set of internal business plan documents in relation to three previous projects. These documents pointed to:

- a) Savings ranging from 23% to 76% on list prices for hardware and software¹³; and
- b) Savings of 23.7% to 53.3% achieved via procurement processes.

NIE Networks also provided analysis of monthly telecoms invoices for a six (6) month period in 2015, prior to new contracts being awarded, compared to a 6 month period after the new contracts were awarded. The following savings were identified via this analysis: telemetry – 11.5%; telephone lines and calls – 11.5%; and mobile phones – 25%.

These figures represent a sample of NIE procurement activity so the level of comfort to be drawn is necessarily limited. That said, the combination of these figures and the quality of the procurement practice displayed (e.g. bidders being excluded at various points of the process and savings between ITT stage and BAFO stage of 6.3% to 19.3% in the prices quoted by vendors) within the documentation suggest that NIE Networks operate a mature set of procurement processes. While not definitive, the foregoing supports their claims of attaining some efficiency through procurement, although Gemserv could not confirm all potential savings are reflected in the NIE Networks RP6 proposals on the basis of the available information.

4.4.2. Efficiency Projects

Within their overall business plan¹⁴, NIE Networks claim a built in efficiency gain of 0.7% per annum throughout the lifetime of RP6, based on the advice of their consultants NERA. Table 2 shows NIE Networks’ estimate of the value of these productivity savings over RP6 across their entire submission.

¹² Non Network IT Business Plan, 1 October 2017 to 31 March 2024. Paragraph 4.42.

¹³ In response to query URQ070 in relation to the assumed discounts applied to hardware, software and other ICT, NIE Networks quoted ranges of 11% to 35% which is consistent with the above.

¹⁴ Northern Ireland Electricity Networks Limited Business Plan, 1 October 2017 to 31 March 2024. Paragraph 5.83.



Category	Estimated RP6 Productivity Savings (£m)							
	Oct-17	Apr-18	Apr-19	Apr-20	Apr-21	Apr-22	Apr-23	Total
	Mar-18	Mar-19	Mar-20	Mar-21	Mar-22	Mar-23	Mar-24	
Distribution savings (predicted)	1.0	2.75	3.7	4.5	5.4	6.3	7.3	30.9
Transmission savings (predicted)	0.1	0.3	0.5	0.6	0.7	0.8	0.9	3.9
Total	1.1	3.05	4.2	5.1	6.1	7.1	8.2	34.8

Table 2: NIE Networks estimate of productivity savings during RP6

NIE Networks framed a £6m investment in a number of projects as being required to achieve the above £34.8m saving.¹⁵ The organisation represented the associated capex as being justified on this basis. Of that £6m, approximately £297.8k directly related to Market Operations Non Network IT capex.

Project Ref	Project Title	Market Operations Allocation			Efficiency Rationale
		Capex	Opex	Total	
RP6-030	Extend Mobile Working	£ 134,030	£ 33,930	£ 167,960	H
RP6-033	Time Reporting automation 1	£ 50,076	£ 1,040	£ 51,116	H
RP6-034	Time Reporting automation 2	£ 61,646	£ -	£ 61,646	H
RP6-036	Document Management	£ 31,740	£ 34,320	£ 66,060	M
RP6-037	Inventory automation	£ 20,220	£ 9,600	£ 29,820	M
Totals		£ 297,712	£ 78,890	£ 376,602	
Total - Pure Efficiency Projects		£ 245,752	£ 34,970	£ 280,722	

Table 3: Proposed Market Operations Non Network IT project investment with an efficiency rationale

Table 3 shows the costs of the proposed Non Network IT efficiency projects with a specific allocation for Market Operations¹⁶. In the table above, projects with a “H” are primarily justified on the basis of an investment to achieve efficiency. Those with an “M” are justified on the basis of efficiency plus some other rationale such as obsolescence mitigation. The bottom line in the table (“Total – Pure Efficiency Projects”) sums the total of the “H” projects.

As the UR has noted in previous discussions with NIE Networks, if the productivity gain from an initiative or suite of initiatives is such as to outweigh the actual costs of implementing it, then it would seem to be economically justified on its own merits. It would also suggest that the relevant projects are self-funding and should not be included in the price control. On that premise, it would also seem that seeking to recover the costs of the project from customers is unnecessary and would suggest that the proposed £245.8k capex and associated £34.97k opex are not justified for inclusion in the price control. We would expect a business to link productivity savings to improved operational practices across the entire organisation. On the basis of the analysis above and submissions to date, Gemserv is not convinced of the merit of an allocation within the RP6 for these efficiency projects.

¹⁵ In discussion at workshop on 28th October 2016

¹⁶ As described in NIE Networks’s response to query URQ071 and in the workshop on 28th October 2016.

4.5. CAPEX/OPEX ALLOCATION RISKS

In assessing the appropriateness of spend being correctly apportioned to capex or opex, Gemserv reviewed areas in which there appeared to be potential risks of incorrect allocation. The potential allocation risks that primarily concerned Gemserv in reviewing this work were:

- i. Licence Costs – ensuring that ongoing licence costs are not captured within capex when they should more properly be viewed as opex (Section 4.5.1);
- ii. Ongoing Enhancements – reviewing whether ongoing enhancements could be considered opex (Section 4.5.2);
- iii. Year One Opex – discussing the appropriateness of capitalising the first year of opex spend (Section 4.5.3);
- iv. Plant Maintenance – assessing whether the “Plant Maintenance” category should be allocated to capex (Section 4.5.4); and
- v. Treatment of “Small Projects” - examining whether the treatment of Small Projects as capex (Section 4.5.5).

4.5.1.Licence Costs

In reviewing the licence costs across the set of projects, and the evidence provided by NIE Networks, Gemserv could find no evidence of licence costs being incorrectly listed as capex. The NIE Networks accounting convention is that the first year’s licence costs are included as a project cost while thereon annual licence costs are treated as opex. NIE Networks appear to have acted in accordance with this practice in relation to Market Operations Non Network IT capex.

4.5.2.Ongoing Enhancements

There were two projects (RP6-018 and RP6-046) that were subject to ongoing enhancements. Gemserv requested further information on these enhancements from NIE Networks. They were largely of the following character: amendment of documentation, validation, generation of alerts, adding data, management of workarounds, operational updates. Gemserv is of the opinion that these costs are more accurately considered opex and should be treated as such. NIE Networks should not be permitted to capitalise and add them to the Regulated Asset Base (RAB).

The total of the Market Operations permitted spend that should be reallocated from capex to opex on the basis of the above is £225k. This spend should be allocated to particular years within RP6 as set out in Table 4.

Ref	Market Ops - RP6							Totals
	Oct-17 Mar-18	Apr-18 Mar-19	Apr-19 Mar-20	Apr-20 Mar-21	Apr-21 Mar-22	Apr-22 Mar-23	Apr-23 Mar-24	
RP6-001	£ -	£ -	£ -	£ -	£ 2,000	£ 2,000	£ 2,000	£ 6,000
RP6-018	£ -	£ 9,750	£ 9,750	£ 9,750	£ -	£ 9,750	£ -	£ 39,000
RP6-046	£ 30,000	£ 30,000	£ -	£ 30,000	£ 30,000	£ 30,000	£ 30,000	£ 180,000
TOTALS	£ 30,000	£ 39,750	£ 9,750	£ 39,750	£ 32,000	£ 41,750	£ 32,000	£ 225,000

Table 4: Allocation of proposed enhancement spend from capex to opex



4.5.3. Year One Opex

The practice within NIE Networks has been to capitalise the first year of operational costs and recognise them as project costs. According to NIE Networks, vendors require these costs to be paid upfront. This justification is consistent with practice across the sector. Gemserv can find no evidence that NIE Networks have not acted in accordance with this policy of capitalisation.

4.5.4. Plant Maintenance

The “Plant Maintenance” item referred to the purchase of additional mobile licences and tablet devices and the development costs which would be required to provide mobile functionality to NIE Networks staff undertaking Plant Maintenance work activities. As such, a capex allocation would appear appropriate for these costs. The confusion was created by the capex spend being incurred by an organisational division with the word “maintenance” in its title.

On the basis that any purchased licences are perpetual, rather than annual¹⁷, the depreciation period for those licences should be no longer than 5 years. Gemserv are querying these licence depreciation periods with NIE Networks.

4.5.5. Treatment of “Small Projects”

The “Small Projects” category of proposed capex worth £195k (discussed in Section 4.2) relates to projects that are identified during business as usual activities as being necessary. As they arise from operational requirements, it proves difficult for them to be pre-identified. As they do relate to operational practice, Gemserv would recommend that they are reallocated to the opex category.

If the principle is accepted that per annum expenditure levels for Small Projects should be consistent across RP5 and RP6, it would seem reasonable to assume similar across capex and opex. This would result in a reduction of £5,500 to the total Market Operations Non Network IT opex budget for Small Projects.

4.6. REFRESH CYCLES

One driver of the need for systems and software upgrade will be software refresh timelines, premier and extended support periods. This requirement drives some spend elements that mitigate the risk of systems obsolescence. Below are reviewed:

- The appropriateness of the refresh timelines within NIE Networks’ proposals (Section 4.6.1); and
- The proposed anticipatory SAP HANA investments during RP6 (Section 4.6.2).

4.6.1. Refresh Timelines

Gemserv has analysed the projects for which NIE Networks has included a refresh requirement i.e. there will need to be refresh investment during RP6. Table 5 lists the projects where NIE Networks claimed refresh investment was required during RP6 and Gemserv challenged NIE Networks to substantiate their timelines. We assessed those proposed refresh timelines against the following set of assumptions:

¹⁷ Such as some Microsoft software options.



- A five-year cycle across most IT hardware and software;
- A regular three-year replacement across most IT security vendors, plus ongoing patches and work against potential threats (as seen during RP5);
- Software is likely to be upgraded before it comes out of extended support; and
- Laptops being replaced as they cease functioning during RP6.

Ref.	Project	Reasonable Refresh Period?
RP6-001	HP Enterprise Architecture Replacement	Yes
RP6-003	Enduring Solution Architecture Replacement	Yes
RP6-004	TIBCO Architecture Refresh	Yes
RP6-005	IT Security Architecture	Yes
RP6-006	End User Devices (EUD) [inc. Desktop] Replacement	Yes
RP6-007	Dell Infrastructure Replacement	Yes
RP6-008	Corporate IT Network Upgrade	Yes
RP6-009	Corporate Telephony Services	Yes
RP6-017	SAP Business Objects (BOBI) Upgrade	Yes
RP6-018	SAP ECC 6 Upgrade	Yes
RP6-019	SAP Supplier Relationship Management (SRM) System Upgrade	Yes
RP6-038	HHU Archive Upgrade	Yes
RP6-039	Routestar (application replacement)	Yes
RP6-040	Routestar Handhelds	Yes
RP6-041	ServiceNet Upgrades	Yes
RP6-042	ServicePower Upgrade	Yes
RP6-043	Market Website Upgrade	Yes
RP6-044	SAP BI	Yes
RP6-046	SAP IS-U / HANA	Yes
RP6-047	SAP IS-U Archiving	Yes
RP6-048	TIBCO / SAP PI	Yes

Table 5: Assessment of project refresh periods

In the main, the foregoing suggests that the vast majority of the proposed refresh periods on which they have predicated obsolescence spending seem reasonable.

4.6.2.SAP HANA Timings

In two projects (RP6-018, RP6-046), NIE Networks have proposed a budget for commencing SAP HANA¹⁸ upgrades in the final year of the price control period. The proposed Market Operations allocation for both upgrades totals £565k. Both were justified in the text on the basis of deadlines imposed by SAP. NIE Networks

¹⁸ SAP HANA is an in-memory data platform that is deployable as an on-premise appliance, or in the cloud. It is a platform intended for performing real-time analytics, and developing and deploying real-time applications. It is powered by a database engine entitled the SAP HANA database.



were requested to provide information to substantiate these claims. In their responses, NIE Networks correctly noted that SAP is an important system for their organisation and that the respective projects (SAP ECC6¹⁹ and SAP IS-U²⁰) are independent of each other.²¹ They provided notes from SAP showing an intent to continue to support these products until December 2025. NIE Networks noted that given lead times, it would be prudent to commence these projects prior to 2025.

Assuming that SAP support would be in place throughout 2025, then Gemserv is of the opinion that the period of April 2024 to December 2025 should be sufficient to plan and complete any necessary upgrades. In addition, the timing of these initiatives raised some concerns around the risk of these projects being used to set out place markers for RP7 and potentially lock in the UR to future spending commitments. On that basis, Gemserv is not convinced of the necessity of the £565k proposed budget.

4.7. PROJECT OPTIONALITY

Gemserv performed an analysis of the degree of optionality associated with the projects i.e. whether they were actually required during the RP6 price control period. Gemserv categorised the proposed projects into the categories described in Table 6.

Category	Explanation	Optionality Level
IH-OBS	Infrastructure & Hardware investment to avoid obsolescence	Low
SYS-OBS	Systems investment to avoid obsolescence	Low
SYS-REF	Systems investment to refresh existing investments	Medium
SYS-OPT	Optional systems investment	High
BI-EFF	Business improvement projects - efficiency gain	High
BI-OPT	Business improvement projects - optional	High
SMA	Small Projects	N/A

Table 6: Optionality categories & associated levels of optionality

The intent is to classify projects into four groupings of optionality: Low – they have a low degree of optionality and the spend is probably justified; Medium – they have a higher degree of optionality associated with them but there may be some justification for including them; High – these appear reasonably optional on the basis of the available information; and N/A – Small Projects whose optionality is context dependent and are addressed elsewhere in this paper.

Figure 3 displays the Market Operations spend (capex & opex) broken down by the above categories. 64% of proposed spend relates predominantly to managing obsolescence across infrastructure and systems. Systems refresh and other systems investment relates to 28.3% of spend. Business improvement projects account for the remaining 4.9% of spend. Included within that business improvement is the BI-EFF category which relates to

¹⁹ SAP ECC is an enterprise resource planning software used by NIE Networks to support their financial and materials management processes.

²⁰ SAP IS-U is a sales and information system that supports the business processes for utility companies. NIE Networks use SAP IS-U to support retail and wholesale electricity market activities.

²¹ Response to query URQ168



efficiency investment. The treatment of efficiency projects is discussed in more detail in Section 4.4. The remaining 2% relates to Small Projects.

The outturn of this optionality analysis (excluding the efficiency projects and Small Projects that are addressed elsewhere) is that £51.96k capex should be excluded from the RP6 permitted spend.

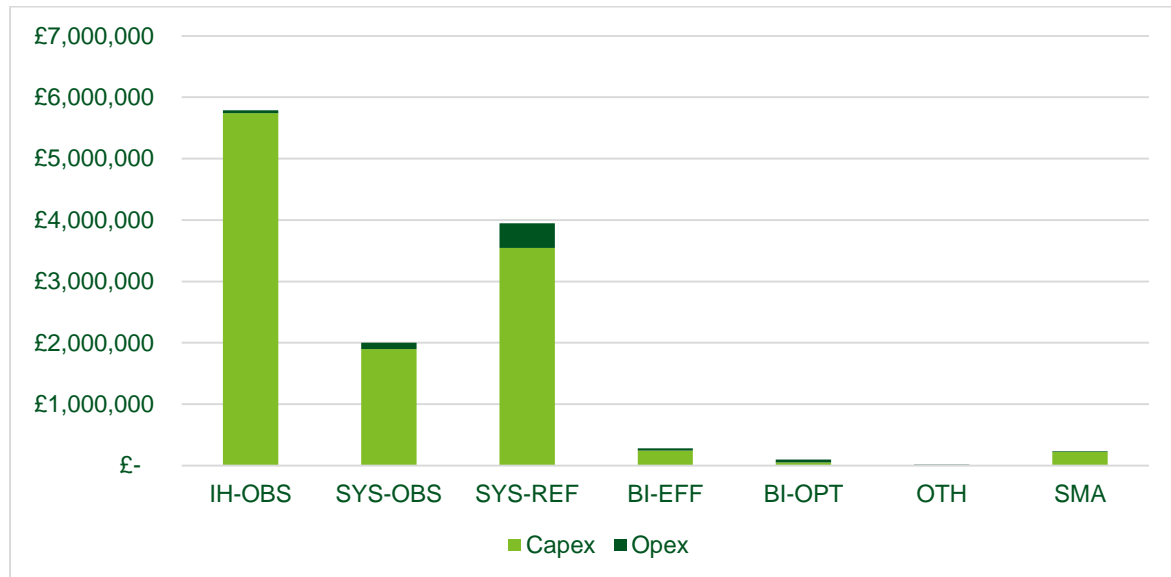


Figure 3: Breakdown of optionality analysis by category

4.8. IT STRATEGY

The rationale for many of the Market Operations Non-Network IT projects partially emanates from the IT Strategy. The final strategy reflects an organisational desire for NIE Networks to become a more data-driven utility with fewer manual paper oriented processes.

NIE Networks have licence obligations to fulfil as the NI DNO and the UR should ensure that allowances are adequate to efficiently discharge these obligations. This section attempts to assess whether the IT strategy could potentially conflict with those obligations. It seeks to answer that question from the following perspectives:

- Alignment of the proposed projects with that IT Strategy (Section 4.8.1);
- Assessing the costs associated with that IT Strategy (Section 4.8.2); and
- High level review of the appropriateness of that IT Strategy for NIE Networks (Section 4.8.3).

4.8.1.IT Strategy Alignment

The IT Strategy is an important driver of for many of the projects. In fact, upon analysing the Market Operations projects, it became clear that all the specified projects had either an obsolescence driver or related back to the IT Strategy. The Market Operations project proposals do not conflict with the IT Strategy.



4.8.2.IT Strategy Costs

Gemserv attempted to assess the costs driven by the strategy. Through this work, it became clear that the IT Strategy is a higher level document whose principles input into nearly all projects meaning that such an analysis would merely be a repetition of the work throughout this paper and be therefore redundant.

4.8.3.IT Strategy Appropriateness

NIE Networks provided an analysis of the strategy of other UK DNOs showing a trend towards a more data-oriented, cloud-based approach to their work. The intent is to amend how they approach their operational role, and not to affect the scope of their licensed role. There is no evidence that this strategy would clash with NIE Networks' role as a licensed distribution company.

There is a wider European trend towards the type of distribution company that emerges from NIE Networks proposals. Within the European discussions about the future role of distributions companies, Eurelectric have envisaged the future Distribution System Operator (DSO) as a data-led organisation²². The European Distribution System Operators' Association for Smart Grids (EDSO) also describes a future in which the distribution company is a more digital type of organisation²³. A strategy of integrated data is also consistent with the approach of the ROI DSO ESB Networks²⁴.

Given the emphasis on paper based processes within their current operational practice, Gemserv understand the reasons behind NIE Networks' IT Strategy and recognise that it would be attractive for the organisation. However, there is a difference between understanding for a strategic approach and justification for spend that may adversely impact upon NI consumers.

There are some clear differences between the GB DNOs and NIE Networks that complicate any effort to draw a direct comparison and hence justify spend on that basis. The Market Operations role, which Gemserv has been asked to assess, differentiates NIE Networks from the GB DNOs, as does the respective scale of their organisations. There may be economic constraints on NIE Networks' ability to emulate its GB counterparts; they have far fewer customers across whom to spread the costs of an investment. Table 7 shows an estimate of customers across a selection of UK DNOs.²⁵

DNO	Customer Nos (millions)
NIE Networks	0.86
Electricity North West	2.40
Northern Powergrid	3.90
SP Energy Networks	3.50
SSE Networks	3.70

²² [Eurelectrics's vision about the role of Distribution System Operators \(DSOs\)](#). February 2016

²³ ['Digital DSO' – a vision and the regulatory environment needed to enable it](#). January 2016

²⁴ [ESB Networks 2027](#)

²⁵ The figures are calculated on the basis of publicly available information and are approximate.



DNO	Customer Nos (millions)
UK Power Networks	8.20
Western Power Distribution	7.80

Table 7: Customer numbers by DNO

4.9. CAPEX CONSISTENCY

The total proposed Non Network IT capex across the Non Network IT Business Plan document and project briefs are broadly consistent. The proposed Market Operations component of that spend (£11.685m) seems consistent across both the Non Network IT Business Plan and the Market Operations Business Plan. In comparing that Market Operations total with the figures arising from Gemserv's bottom-up model, we noted a discrepancy of approximately £18.7k (or 0.16%) with the Gemserv figure.

This discrepancy is not of such an order as to raise concerns, particularly as the permitted spend sought by NIE Networks sums to a lower figure (£11.69m) than that resulting from Gemserv's analysis (£11.71m). Upon closer inspection, it is explained by the following considerations:

- i. **Rounding Difference** – the figures provided by NIE Networks were rounded up to the thousands, whereas Gemserv's numbers were built from the bottom up on the basis of the individual project proposals and were rounded to the nearest whole number. This rounding difference compounds across the twenty-nine (29) projects.
- ii. **Summing Error** – when building the bottom up estimates, Gemserv found some instances where the numbers differed from those totalled by NIE Networks. Those differences were largely trivial in nature.

On the basis of the above, Gemserv is of the view that the Non Network Market Operations IT capex figures are broadly consistent across the documents and with our model.

4.10. CAPEX SUMMARY

This section is structured as follows:

- Section 4.10.1, Capex Recommendations – sets out a summary of the recommendations in relation to capex; and
- Section 4.10.2, Consolidated Recommendation – describes the consolidated view of the impact of those recommendations upon NIE Networks' proposals.

4.10.1. Capex Recommendations

Tibco

1. £250.3k of the proposed Tibco capex should not be permitted.

Small Projects

2. £27.5k of proposed Small Project capex should not be included.



NIE Networks Programme Management & Backfill Costs

3. The UR should not permit £215.5k for internal project management and backfill costs.

Efficiencies

4. £245.8k of efficiency related capex should not be permitted.

Capex/Opex Allocation Risks

5. £225k of capex related to Ongoing Enhancements should not be permitted and should be reallocated to individual years' opex as set out in 4.5.2.
6. The Small Projects proposed capex of £195k should be reallocated to opex.

Refresh Cycles

7. The majority of proposed refresh periods within NIE Networks' investment plans appear reasonable.
8. £565k of SAP HANA investment for late in RP6 should not be permitted.

Project Optionality

9. The necessity of £51.96k capex has not been demonstrated.

IT Strategy

10. The IT Strategy does not seem to clash with NIE Networks' licence obligations.

Capex Consistency

11. There is a reasonable degree of consistency in the Market Operations capex figures across the Non Network IT Business Plan and the Market Operations Business Plan.

4.10.2. Consolidated Recommendation

Category	£s
Market Ops Non Network IT - capex recommendations	
Managed Service Provider Agreement	-£ 406,361
Tibco Upgrades	-£ 250,250
Small Projects	-£ 27,500
Programme Management & Backfill	-£ 215,460
Efficiency Projects	-£ 245,752
Ongoing Enhancements	-£ 225,000
SAP HANA	-£ 565,000
Project Optionality	-£ 51,960
Subtotal	-£ 1,987,283
Market Ops Non Network IT (NIE Networks Proposals)	£ 11,703,707
Total	£ 9,716,424

Table 8: Consolidated & reconciled statement of proposed capex savings

12. Gemserv is proposing a permitted Market Operations capex of £9.72m, a reduction of £1.99m from the NIE Networks submission. Table 8 sets out the impact of the above recommendations on the Market Operations Non Network IT capex. A number of the proposed savings interact as they relate to the same projects. Below, those savings are reconciled to ensure there is no double counting.



5. OPEX

In relation to Market Operations allocated IT opex over the RP6 period, NIE Networks are proposing the following:

- An additional £655.94k out of a total Non Network IT increase of £8.85m;
- £34.14m for Enduring Solution Operating Costs; and
- £3.6m for Market Operations – Other Operating Costs.

This chapter of the paper discusses Gemserv's analysis of these proposals and it is structured into the following chapters:

- Section 5.1, Market Operations Non Network IT Opex – assesses UR's proposals in relation to the Market Operations portion of the proposed Non Network IT opex;
- Section 5.2, Enduring Solution Operating Costs – reviews NIE Networks' proposed opex in relation to the Enduring Solution;
- Section 5.3, Market Operations – Other Operating Costs – considers the category of proposed Other Operating Costs within the Market Operations Business Plan;
- Section 5.4, Opex Consistency – checks that the opex apportionment for Market Operations is consistent between the Non Network IT Business Plan and the Market Operations Business Plan; and
- Section 5.5, Opex – sets out Gemserv's recommendations in respect of opex.

Where appropriate, costs are benchmarked at various points against comparable cost items within the experience of the review team and against spend within RP5.

5.1. MARKET OPERATIONS NON NETWORK IT OPEX

For the purposes of assessment, Gemserv assumed that the baseline Market Operations Non Network IT opex approved under RP5 was adequate for an efficient organisation, and focused its analysis upon the proposed change between the price controls. Gemserv estimates this baseline Market Operations Non Network IT opex at £1.4m over RP6.²⁶ NIE Networks presented their opex proposals as "opex impact"²⁷ i.e. the increase in baseline opex.

Gemserv estimates the Market Operations portion of that increase translates to a proposed £655.94k additional spend over RP6. NIE Networks provided information on the Non Network IT opex costs across RP4, RP5 and RP6. However, the information was not in a format that permitted the review of the specific Market Operations portion of those figures. This format prevented more detailed cross comparison across price control periods, as the costs were not apportioned by business function. Gemserv are querying these opex figures further with NIE Networks.

²⁶ Gemserv are querying these figures further with NIE Networks.

²⁷ Our consultants noted disparities in how opex impact was treated that created some confusion in assessment. For example, the following Project Briefs stated there was no additional opex as a result of those projects and then included opex impact spend in the Table A7 in the Appendix: RP6-002, RP6-005, RP6-006, RP6-011, RP6-015, RP6-020, RP6-039, RP6-042, RP6-045.



At a high level, Gemserv does not see evidence for NIE Networks' Market Operations function differing significantly from RP5 to RP6. We would have had an expectation they could substantially reduce their ongoing opex costs for reasons including:

- The functionality of the Enduring Solution systems is now stable, mature and well understood (RP5 costs included substantial costs for hyper-care²⁸);
- During RP6 there are many opportunities to:
 - Reduce ongoing costs through additional virtualisation²⁹,
 - Introduce more near and off shore 3rd line support,
 - Procure more near and off shore hosting, and
 - Implement some cloud based solutions³⁰; and
- A new Managed Services Provider contract will be in place for the duration of RP6 that should drive down unit costs and allow innovation in the way applications are developed, maintained and hosted.

The aforementioned points would suggest that no increase in per annum Market Operations Non Network IT opex is required and in real terms substantive savings are achievable over the new price control. NIE Networks have framed their opex impact proposals as being worth approximately a 13% per annum increase in IT and telecoms costs.³¹ Assuming that the £655.94k is included in that opex impact figure, we would propose it be excluded from the price control and the per annum Market Operations Non Network IT opex is fixed at £210.7k.

5.2. ENDURING SOLUTION OPERATING COSTS

NIE Networks are proposing a £1.96m increase in Enduring Solution Operating Costs between RP5 (£32.178m) and RP6 (£34.14m). As RP6 is longer than RP5 (6.5 years as opposed to 5.5 years), one would expect some increase in the total figures assuming a constant burn rate. However, the Enduring Solution was a totally new system in RP5, but now SAP is in steady state operation and the organisation is familiar with the system. Gemserv would expect per annum operational costs to be less in RP6. NIE Networks' proposals demonstrate that profile; NIE Networks' proposed average p.a. cost for RP6 is £5.25m compared to £5.85m³² for RP5. However, within the below proposals, Gemserv has identified potential additional savings.

Below, we review in more detail the proposed spend as follows:

- Section 5.2.1, IT Support Costs – considers the IT support costs category;
- Section 5.2.2, Hardware, software and market entry costs – assesses the third party costs involved with hardware maintenance, software licences and market services;
- Section 5.2.3, Market Services Staff Costs – reviews the Market Services staff costs; and

²⁸ Hyper-care is the stabilisation period that follows go live of an IT investment, in this case the Enduring Solution. It focuses on customer support, integrity of the data and availability of a system. It reflects the higher probability of a requirement for more intensive support in the early days of operating a system.

²⁹ The creation of a virtual version of an element of the IT system, for example an operating system, a server or a storage device, rather than an actual version.

³⁰ Gemserv considers cloud based solutions to be maturing and expect them to be applicable to a wider range of client needs during the next PC period. NIE Networks seems to expect increased use of the cloud in their future business activities.

³¹ Non Network IT Business Plan

³² Gemserv estimate on the basis of the response to URQ142.



- Section 5.2.4, Tibco Opex – discusses the Tibco opex allocation within the Enduring Solution Operating cost figures.

5.2.1.IT Support Costs

A key driver of costs in this category is the Managed Service Provider contract (discussed under Section 3). It incorporates resource to support Enduring Solution applications and technical resources to support all infrastructure and network components associated with the Enduring Solution. This category of cost is forecast to increase from £16.62m in RP5 to £17.07m in RP6. The per annum burn rate (i.e. an average annual cost assuming steady spend across the two periods) seems to be more efficient in RP6 (£2.63m) than RP5 (£3.02m).

In order to be consistent with our other recommendations in relation to the Managed Service Provider agreement, and our expectations of a lower support requirement for the Enduring Solution, we are proposing a 10% reduction in the per annum IT Support Costs, resulting in a revised total of £15.36m.

5.2.2.Hardware, software and market entry costs

These costs are the main source of the difference between RP5 and RP6. This category relates to the third party costs involved with hardware maintenance, software licences and market services across the following categories:

- Capita – other costs: network circuits and hosting charges associated with Enduring Solution infrastructure (Subsection 5.2.2.1);
- 3rd Party costs: hardware maintenance charges associated with ES hardware as well as telecoms costs associated with interval meter reading (Subsection 5.2.2.2);
- Software licence costs: included third party licence costs for market systems e.g. SAP licences (Subsection 5.2.2.3);
- Load profile costs: work to procure annual customer load profiles for market settlement in adherence with the Trading and Settlement Code and Market Registration Code (Subsection 5.2.2.4);
- Market Entry costs: cost associated with new entrant certification and accreditation of suppliers for particular market segments (Subsection 5.2.2.5).

Table 9 sets out the percentage change across these five categories between the price control periods and whether the level of change is proportional to the increased duration of RP6 relative to RP5.

HW, SW & Market Entry Costs	% Difference	Proportional?
Capita - other Costs	11.09%	< Proportional
3rd Party Costs	34.15%	> Proportional
Software Licence Costs	2.48%	< Proportional
Load profile costs	N/A	N/A
Market entry costs	16.05%	≈ Proportional

Table 9: Percentage change across Hardware, Software & Market Entry Costs between RP5 and RP6



5.2.2.1. Capita – other Costs

These proposed ongoing Capita costs (related to network circuit and hosting charges) are lower per annum during RP6 than RP5. As such, Gemserv would not be minded to challenge these charges under this heading of the report.

5.2.2.2. Third Party Costs

The increase in annual 3rd Party Costs is very significant and Gemserv is not convinced they are fully justified on the basis of the information provided by NIE Networks especially as the submission from NIE Networks suggests that the *status quo* will persist. If that is the case, we would expect the annual cost to be similar to that of RP5 (£669.8k). Therefore, Gemserv would recommend the average per annual Third Party Cost spend during RP5 is extrapolated into RP6 (a saving of £588.2k).

Another aspect of this cost category are metering operational costs and the volume of half hourly meters requiring daily communication. Gemserv understand that the metering costs and volumes are being reviewed under the benchmarking exercise so this report does not take into account any changes to the metering volumes and as a consequence any cost factors that are sensitive to changes in volumes.

5.2.2.3. Software Licences

The Software Licence shows a 13.3% per annum decrease between the price control periods. This decrease suggests they are not an area of concern from the perspective of benchmarking between RP5 and RP6. As discussed above in Section 4.5, the cost allocation risk in relation to software licences does not seem significant.

5.2.2.4. Load Profile Costs

The Load Profile Costs (totalling £740k) seems to be a new category of cost included within NIE Networks' submission. When asked to submit RP5 benchmarking information for the Enduring Solution, NIE Networks provided figures that relate Enduring Solution spend to the other four categories.

Gemserv recognises that NIE Networks does have obligations around procuring customer load profiles and that there is a cost associated with that. Our understanding is that the load profiles used in NI are based on GB profiles and then mathematically regressed to Belfast. We understand these costs to be already included in the opex figures.

Gemserv can only conclude that NIE Networks believe that annual profile sets will not be available from ELEXON during the period of RP6 because of the roll out of smart metering. It is Gemserv's opinion that while non interval customers exist in GB and there is an ongoing need to estimate settlement volumes for meter failures, the GB profile set will continue to be produced for the foreseeable future. Also annual profile sets (being based on rolling three year averages) only differ marginally and, if necessary, NIE Networks could adopt a static set as is the practice of ESNB in ROI.

Gemserv would recommend that the proposed £740k is not permitted and any new profile developments need to be identified to support a revised NI meter strategy, if necessary.



5.2.2.5. Market Entry Costs

At a high level the one sixth increase in Market Entry Costs would be consistent with the increased duration. However, the numbers are open to challenge. NIE Networks' figures assume 1 new entrant per annum in the RP6 proposal of £904k which equates to an annual cost of approximately £139k.

This average is similar to the level of cost associated with periods when there were two entrants into the market. The costs associated with two entrants are not double those of one entrant as much of the work is duplicated; we expect it to be of the order of 1.5 times the effort. Applying that figure to the average above would result in a saving of £241k over the price control.

5.2.3. Market Services Staff Costs

There was a significant reduction in staff costs across RP5. This change seems related to an actual decrease in FTEs from 43 to 26. NIE Networks have committed to retaining the lower staffing figures during RP6.

Without access to more sensitive information, it is difficult to assess whether the staffing costs fully reflect the staffing numbers. However, on the basis of the high level descriptions of the roles within the Market Services team and using an NI IT sector salary scale³³ for similar roles, Gemserv performed a "rule of thumb" assessment and built up a range of costs for the different team roles. While Gemserv would caution the UR against drawing too significant a conclusion from the data, it seems that the staffing costs are broadly reflective of the proposed staffing numbers.

In our previous review of RP5 we recommended a permanent resource base of 17.9 to support the Enduring Solution within Market Services. Within the RP6 submission we have not seen objective evidence to support our deviating from that position. Gemserv proposes permitting staff spend up to this level resulting in a saving of approximately £320.9k per annum and £2.08m over the price control period.

5.2.4. Tibco Opex

NIE Networks include the Tibco opex within the Enduring Solution Operating Costs³⁴. NIE Networks attest that they "continue to pay 28% of the TIBCO operating costs"³⁵. On the basis of that declaration, NIE Networks appear to be meeting their obligations in relation to apportionment between NI and ROI. Gemserv are requesting further information from NIE Networks to further validate the proposed Tibco opex levels.

5.3. MARKET OPERATIONS – OTHER OPERATING COSTS

The per annum proposed spend for Other Operational Costs in Market Operations seems consistent across the price control periods. As Figure 4 shows, the average proposed annual spend for RP6 (£3.63m) is broadly consistent with that of RP5 (£3.6m) based on the NIE Networks submission. Within those figures, there is some movement:

³³ [Brightwater \(NI\) Salary Survey 2016](#)

³⁴ As stated by NIE NETWORKS in their response to query URQ-143.

³⁵ Response to query URQ143.



- The average per annum spend on Fault & Emergency and IT, Stores & Safety has increased between the periods (by approximately £60k and £150k respectively); and
- The average per annum spend on Finance & HR and the Other categories has decreased between the periods (by approximately £40k and £27k respectively).

The majority of costs within this category appear broadly reasonable. One change occurs in the area of Meter Inspections, a per annum increase of approximately £120k that appears to be driven by an increase in meter readers. As meter reading costs were scoped out of Gemserv's work, the UR should review these costs to ensure they are necessary.

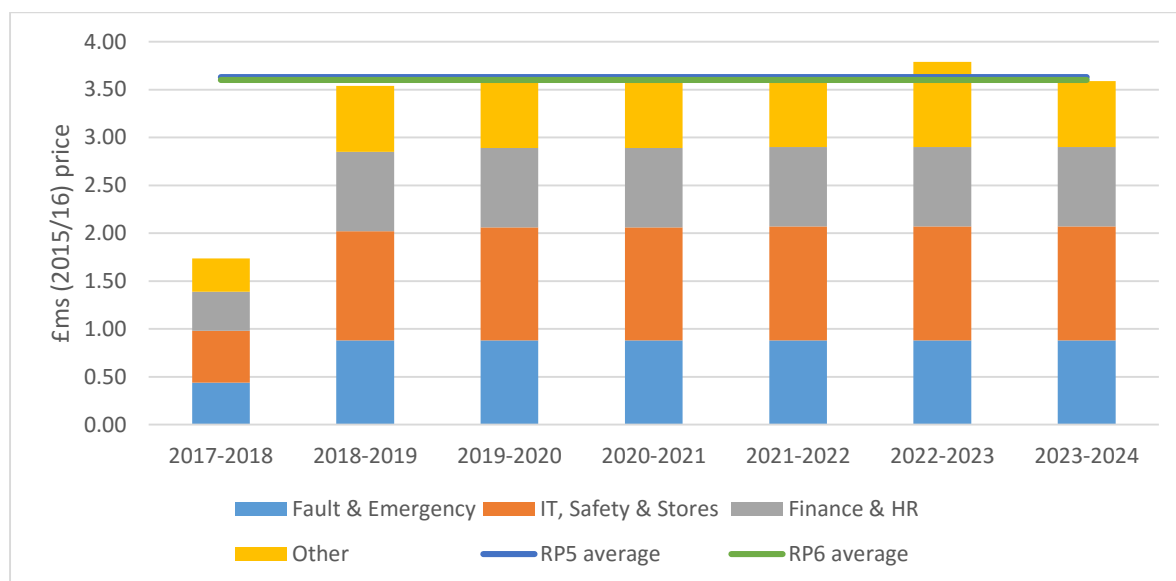


Figure 4: Other Operating Costs for Market Operations

On the basis of the information provided, it is difficult to definitively establish whether the proposed Market Operations allocation is correctly apportioned to that business unit. Gemserv are requesting further information to substantiate this allocation.

5.4. OPEX CONSISTENCY

Gemserv has no reason to believe that the overall Non Network IT proposed opex is not consistent across the Non Network IT Business Plan, the Market Operations Business Plan and the Business Plan. NIE Networks provided evidence to support that finding³⁶. The total of £8.89m in the Non Network IT Business Plan relates to the £8.887m in opex impact smeared across the overall Business Plan in the figures provided by NIE Networks.³⁷ Figure 5 sets out the allocation by area within the Business Plan.

NIE Networks present the opex data within the Market Operations Business Plan at the wider level of Non Network IT rather than specifying the Market Operations portion. If there is no reason to doubt the allocation of

³⁶ Provided in response to queries URQ067 and URQ068

³⁷ Provided in response to queries URQ067 and URQ068



the Non Network IT budget, then it is reasonable to assume the Market Operations portion of that allocation being consistent, though Gemserv is querying this matter further with NIE Networks. On that basis, Gemserv would recommend that it is reasonable to assume consistency of Market Operations Non Network IT opex between the Market Operations Business Plan, the Non Network IT Business Plan and the global Business Plan.

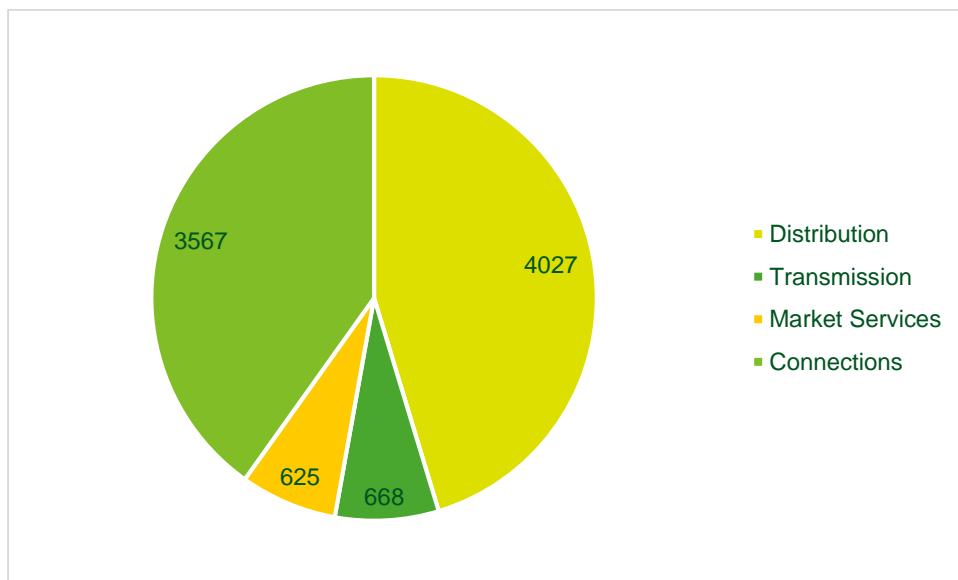


Figure 5: Total Non Network IT Opex Impact by Business Plan Area (£ks)

5.5. OPEX SUMMARY

This section is structured as follows:

- Section 5.5.1, Opex Recommendations – sets out a summary of the recommendations in relation to NIE Networks’ opex proposals; and
- Section 5.5.2, Consolidated Recommendation – describes the consolidated view of the impact of those recommendations upon NIE Networks’ proposals.

5.5.1. Opex Recommendations

Set out below are Gemserv’s recommendations in relation to NIE Networks’ opex proposals.

Efficiencies

1. The UR should not permit £34.98k opex in relation to efficiency projects.

Project Optionality

2. The optionality analysis suggests that the necessity of £43.92 opex has not been demonstrated.



Market Operations Non Network IT Opex

- The requirement for an additional £660.14k Market Operations Non Network IT opex has not been substantiated and should not be permitted.

Enduring Solution Operating Costs

- £1.72m should not be permitted under the IT Support Costs category
- The following amounts should not be permitted under Hardware, software and market entry costs: £588.2 for Third Party Costs; £740k for Load Profile costs; and £241k for Market Entry costs.
- £2.08m of cost should not be permitted under the Market Services Staff category.

Market Operations – Other Operating Costs

- The UR should review the necessity of the increase in meter inspection costs.

5.5.2.Consolidated Recommendation

- Table 10 sets out the impact of Gemserv's recommendations upon the NIE Networks Market Operations opex proposals contained within their submission to the UR.

Category	£s
Market Ops Non Network IT - opex recommendations	
Small Projects - reallocation	£ 195,000
Efficiency Projects	£ -
Ongoing Enhancement - reallocation	£ 225,000
Optionality Analysis	£ -
NIE Networks opex proposal disallowed	-£ 660,140
Market Ops Non Network IT (NIE Networks proposals)	£ 660,140
Total	£ 420,000

Enduring Solution Opex - Recommendations	
IT Support Costs	- £ 1,717,000
HW, SW & Market Entry Costs	- £ 1,569,182
<i>Third Party Costs</i>	- £ 588,182
<i>Load Profile</i>	- £ 740,000
<i>Market Entry</i>	- £ 241,000
Market Services Staff Costs	- £ 2,085,750
Subtotal	- £ 5,371,932
Enduring Solution Opex (NIE NETWORKS Proposal)	£ 34,146,000
Total	£ 28,774,068

Table 10: Consolidated opex recommendations



6. CONCLUSION

Gemserv commends this report to the UR for its attention and review. Set out below is a summary of the impact of Gemserv's recommendations on NIE Networks' proposals.

During this investigation, and with respect to the UR obligations to protect customer's interests, Gemserv have attempted to take a balanced approach in reviewing NIE Networks' submissions. Our conclusions are based on the evidence provided by NIE Networks within the scope and the available timescales.

Sections 4.10 and 5.5 of this report describe our recommendations in relation to capex and opex respectively. Table 11 below summarises the impact of those findings upon NIE Networks' proposals.

Category	NIE Networks Proposal	Net recommendation	Updated totals
Market Ops Non Network IT capex	£ 11,703,707	-£ 1,987,283	£ 9,716,424
Market Ops Non Network IT opex	£ 655,940	-£ 235,940	£ 420,000
Enduring Solution opex	£ 34,146,000	-£ 5,371,932	£ 28,774,068

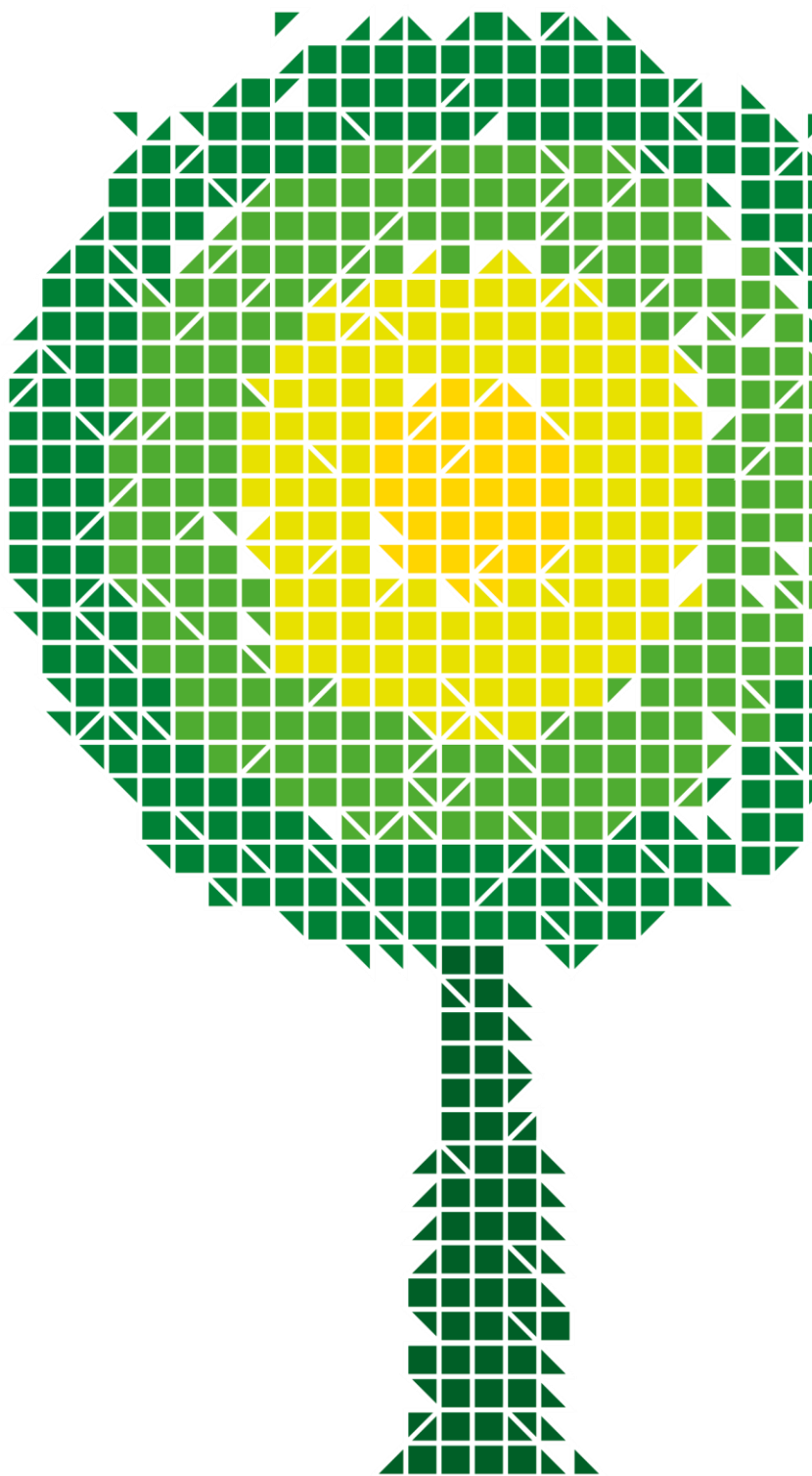
Table 11: Overall impact of Gemserv recommendations on NIE Networks proposals



APPENDIX 1: NON NETWORK IT PROJECTS IN SCOPE

Below are set out the twenty-nine projects in NIE Networks' Non Network IT Business Plan that contain an allocation for Market Operations, were included in the NIE Networks Market Operations Business Plan and were in the scope of this review.

Ref	Project
Infrastructure	
RP6-001	HP Enterprise Architecture Replacement
RP6-003	Enduring Solution Architecture Replacement
RP6-004	TIBCO Architecture Refresh
RP6-005	IT Security Architecture
RP6-006	End User Devices (EUD) [inc. Desktop] Replacement
RP6-007	Dell Infrastructure Replacement
Telecomms	
RP6-008	Corporate IT Network Upgrade
RP6-009	Corporate Telephony Services
Applications	
RP6-017	SAP Business Objects Upgrade
RP6-018	SAP ECC 6 Upgrade
RP6-019	SAP Supplier Relationship Management (SRM) System Upgrade
RP6-020	Internet / Intranet
RP6-030	Extend Mobile Working
RP6-033	Time Reporting automation 1
RP6-034	Time Reporting automation 2
RP6-036	Document Management
RP6-037	Inventory automation
RP6-038	HHU Archive Upgrade
RP6-039	Routestar (application replacement)
RP6-040	Routestar Handhelds
RP6-041	ServiceNet Upgrades
RP6-042	ServicePower Upgrade
RP6-043	Market Website Upgrade
RP6-044	SAP BI
RP6-045	SAP BI Archiving (Upgrade)
RP6-046	SAP IS-U / HANA
RP6-047	SAP IS-U Archiving
RP6-048	TIBCO / SAP PI
SMA	Small Projects



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