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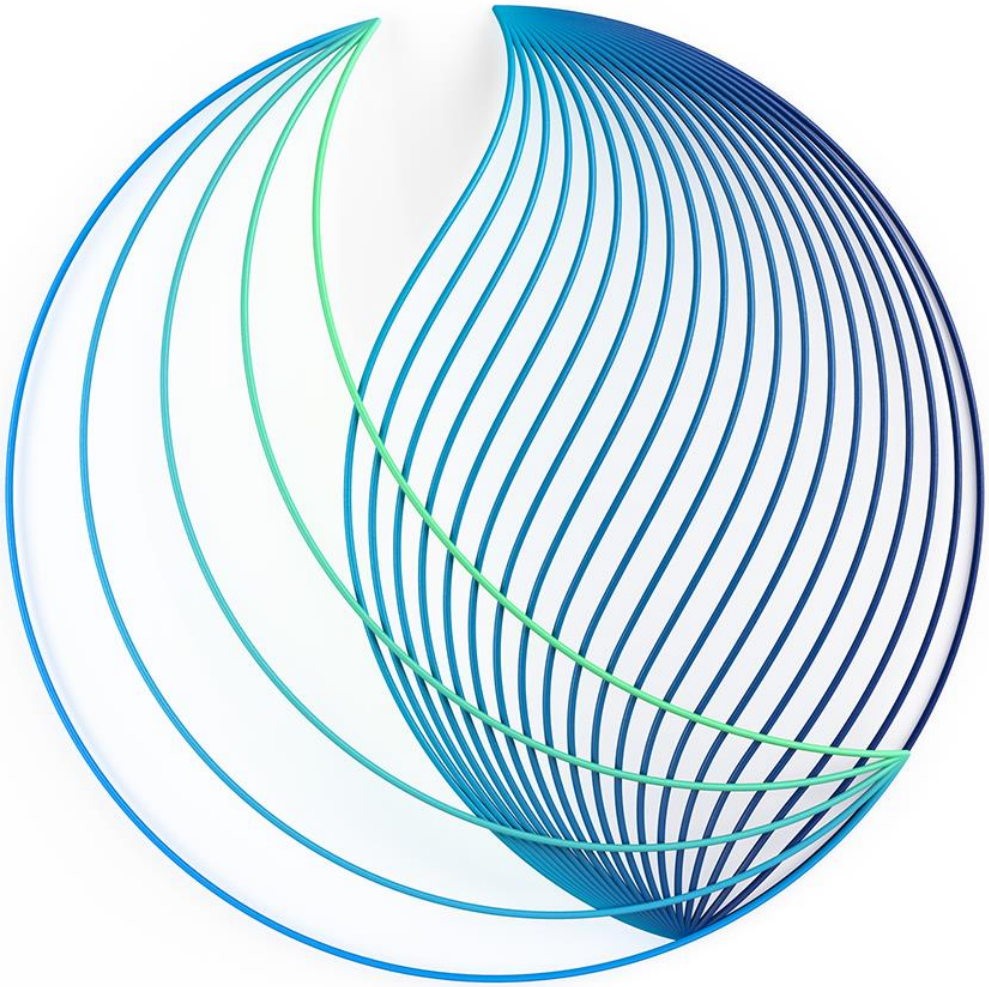


Optimus Release 1 - 3 Post Implementation Review – FINAL REPORT

Endeavour Energy

30 June 2022

Contents

Glossary

Acronym	Term
ADMS	Advanced Distribution Management System
AER	Australian Energy Regulator
ASP	Accredited Service Provider
BCR	Benefit cost ratio
Capex	Capital expenditure
CBA	Cost benefit analysis
DER	Distributed energy resources
EAM	Enterprise Asset Management
EHS	Environment, Health and Safety
ELT	Executive Leadership Team
ERP	Enterprise Resource Planning
FTE	Full time employee
GM	General Manager
GPO	Global Process Owners
ICT	Information communication technology
LMS	Learning management system
MSATS	Market Settlement and Transfer Solutions
NER	National Electricity Rules
NPV	Net present value
Opex	Operating expenditure
PIR	Post Implementation Review
PMO	Project Management Office
PO	Process Owner
Project	Optimus Implementation Project
RCP	Regulatory control period
RRG	Regulatory Reference Group
SIP	Security Improvement Plan

Acronym	Term
SIT	System Integration Testing
SME	Subject matter expert
UAT	User acceptance testing

Executive summary

Deloitte was engaged to undertake a Post Implementation Review (PIR) of Releases 1 – 3 of Endeavour Energy's (Endeavour) Optimus Implementation Project (Project), a major enterprise platform project to replace legacy enterprise technology applications with an advanced version of SAP.

The Project commenced in December 2017 and is being delivered across four separate Releases. Release 3 was completed in October 2021 and Release 4 is scheduled for go-live in July 2022.

While this report focuses on Releases 1–3, anticipated benefits for Release 4 have been considered for the purpose of estimating the overall benefits of Project implementation.

As part of the PIR, Deloitte undertook the following activities:

- Considered the Project's delivery against the AER's expectations as outlined in its Guidance Note *Non-network ICT capex assessment approach for electricity distributors*[1], including:
    - A comparison of the actual cost to the proposed cost in the business case
    - A comparison of the actual timeframe to complete the project with the forecast timeframe
    - A comparison of the actual achieved benefit to the forecast benefit (as best estimated) in the business case
    - An explanation of any material variations in costs, delivery timeframe, and benefits realised.
- Consulted key business leads to identify challenges experienced during implementation, including the impacts of those challenges for costs, delivery timeframes and benefits realised, and the actions applied in response
- Compiled a list of recommendations in the form of lessons learned that could be applied to Release 4 and other comparable projects within Endeavour.

Overall, Deloitte found that:

- The Project was required due to the state of the company's ICT systems and applications at the time when the investment decision was made. The Project is also strongly aligned with Endeavour's strategy in that it provides the foundations for its ability to respond to changes in customer preferences at least cost.
- The Project has experienced deviation from its original design, implementation and governance plan. Originally aiming to replace major legacy systems that were no longer fit-for-purpose, the Project in its current scope has been reduced to provide a much stronger focus on developing a foundational platform that is enabled to deliver the automation, productivity and data analytics that are considered critical by Endeavour for future business function and efficiency and to meet customer need. The scope of the Project is consistent with approaches taken by similar businesses in similar situations.
- Endeavour took a prudent approach to the identification and management of key challenges faced in Release 1 and 2 by pausing Project delivery between May 2019 to December 2019. Endeavour implemented a strong governance structure to refocus the Project on its core outcomes, functionality and embed the lessons learned to date. These factors have resulted in revisions to both the Project schedule and budget as outlined in Table 1.
- Endeavour has taken a robust approach to identify the scope of benefits that can reasonably be attributed to the enhanced functionality associated with the deployment of the Project. The approach adopted by Endeavour focuses on the incremental uplift achieved through implementation, displays a clear narrative alongside the majority of quantified benefits and

[1] Australian Energy Regulator, Guidance Note, *Non-network ICT capex assessment approach for electricity distributors*, November 2019 at https://www.aer.gov.au/networks-pipelines/guidelines-schemes-models-reviews/non-network-ict-capex-assessment-review

maps each benefit specifically to a Release. Project-wide benefits related to corporate and technology savings and avoided capex costs have also been identified. A summary of these benefits has been provided in Table 3.

- Ongoing changes in energy market policy and the AER's increasing willingness to consider the impact of DER penetration on distribution networks in its regulatory determinations provide increasing assurance that the AER will be open to considering the investment in the Business Transformation over a longer-term horizon than 5 years. For this reason, a 12 year time horizon has been adopted for the CBA.
- A CBA shows that quantified benefits expected to be realised for the Project (Release 1-4) exceed the anticipated costs across a 12-year time horizon (FY18-FY29), with a NPV of $108.2 million and a BCR of 1.52. Further detail on total realised benefits for the Project can be found in Table 5 below. It should be noted that this report focuses on the costs and benefits of the Project, in isolation of the outcomes associated with the ADMS and SIP projects. The updated benefits estimates are outlined in Table 3 below.
- Endeavour has continued to employ a prudent approach to delivery by engaging Deloitte in September 2021 to review the Project. As of June 2022, Endeavour has taken steps to progress all actions identified by Deloitte.
- Endeavour has identified areas of improvement over the lifecycle of Release delivery through use of online surveys, stakeholder consultations and review of past commentary made through the process of business case development. These activities were designed to understand the impacts of the Project to each department during the implementation phase and post go-live. The PIR process has also provided an opportunity to identify lessons learned and opportunities for improvement. This has been documented through key lessons learned and recommendations to apply to Release 4 and projects of a comparable nature and are summarised in Table 5 below.

Table 1 details how the timeframe for delivery of the Project has changed over time. Endeavour has provided a comprehensive explanation for the shift in timeframes, resulting in a stronger focus on systems enabled to deliver the automation, productivity and data analytics that are considered critical for future business function and efficiency and to customer need.

Table 1 - Project Release Plans

	2018 Business Case	2020 Business Case	Delivery
Release 1	February 2019	N/A	November 2018 – October 2019
Release 2	October 2019	August 2020	August 2020
Release 3	April 2020	October 2021	October 2021
Release 4	N/A	April 2022	July 2022 (forecast)

Table 2 outlines how the costs for the Project compare to those forecast in the 2018 and 2020 business cases.

In April 2019, Endeavour's assurance consultant, Pindara, undertook a review which recommended that the Project be paused and reset, citing a number of findings pointing to the lack of progress in the Business Transformation's implementation, the deterioration of governance structures and the likely delay of the go-live date beyond October 2019.

The Board acknowledged Pindara's advice and acted on its recommendations - pausing the Project in May 2019, commissioning a study into the Project's current position. Several company-specific learnings surfaced regarding scope and architecture design, engagement and Project delivery which led to Endeavour re-defining the foundational scope for Release 3 and to phase the delivery strategy to an additional Release 4. The new scope and timing aimed to provide for greater optionality on future technology choices to align with changing enterprise architecture and business needs.

Table 2 – Project Costs Budget versus Actual ($m, nominal)

	2018 Business Case	2020 Business Case	Delivery
Release 1 and 2	38.0	37.9	33.5
Release 3	124.2	227.9	205.4
Release 4	27.1	83.9	79.5*
Total	**189.4**	**349.7**	**318.4***

*Forecast

Table 3 – Project Benefits Budget versus Actual ($m, nominal)

Benefit by Release	2020 Business Case	Current Forecast* (FY18 – FY29)	Variance to 2020 Business Case
Release 1	133.2	303.2	170.0
Release 2	5.9	12.4	6.5
Release 3	87.8	99.0	11.2
Release 4	39.4	71.9	32.6
Project-wide	48.4	24.6	(23.8)
Total	**314.7**	**511.1**	**196.4**

*Represents the value of existing benefits to date and those forecast to FY29.

Through the PIR consultation process, key business leads identified areas of realised benefit following Release 3, which had not previously been captured. These are summarised in

Table 4.

Endeavour should seek to validate and document these benefits, including quantification where possible. As Release 4 shifts the Project's focus to a customer-focused solution, further analysis could also be undertaken to identify how the functionalities delivered in Releases 1-3 integrate with the network ICT environment and how they have assisted in delivering improvements to Endeavour's network performance.

Table 4 – Additional Areas of Benefit

Category	Benefit	Description
Learning and Development	Increased uptake of learning and development	The online delivery capability and its self-serve nature, increases employee uptake of learning and development modules.
	Decreased travel time	The online delivery capability reduces travel time as participants are no longer required to travel to a physical location for course attendance.
	Availability to revisit and repeat modules	Employees are able to access modules at any time which improves accessibility, amenity and productivity.
Finance	Reduced volume of manual processing	The volume of manual journals has decreased by approximately 23% since the implementation of the Finance ERP.
Data	Improved efficiency through a single data repository	The consolidation of data from multiple legacy systems into a single ecosystem with integrated modules allows for a more integrated view of data and efficient completion of tasks.
	Improved decision making through data quality and availability	Improved quality and availability of data leading to more valuable insights and empowering employees to make better business decisions, e.g. optimising asset replacement schedule and investment plan.

The results of the CBA for the Project are summarised below. This incorporates the estimated benefits across all four Releases.

Analysis shows that quantified benefits expected to be realised exceed the expected costs across a 12-year time horizon (FY18-FY29), with a NPV of $108.2 million and a BCR of 1.52. This demonstrates that despite the increase in the Project's budget over time, the functionality delivered will positively benefit Endeavour.

Table 5 – Overall results for 'project case', NPV incremental to 'base case' (PV, $m, $2022)

Item	Total (FY18-FY29)
Total Benefits	315.7
Total Costs	207.5

Net Present Value	108.2
Benefit Cost Ratio	1.52

Source: Deloitte (2022)

Table 6 outlines the key lessons learned from the project and how these have been applied. These can continue to be applied for Release 4 implementation in addition to future projects of a comparable nature. It is understood the business is aware of these and intends to implement the lessons learned in Release 4 and in future projects. Additional lessons learned were also identified and have been detailed in Chapter 6. It is recommended that a further review occurs following the implementation of Release 4 to determine the extent to which Endeavour successfully implemented the lessons from Release 1-3.

Table 6 - Project Lessons Learned

Category	Challenges	Key Learnings Applied
Scope and Architecture	• Depth and breadth of process and technical scope was too extensive, complex and undeliverable • Designs developed did not appreciate the architecture of implementing ISU (Release 4) on top of ERP/EAM (Release 3).	• A balanced and executable Release 3, scope signed off by Endeavour • A holistic architecture for Release 3 and 4 with common objectives understood and impacted to negate short-term decisions impacting the long-term solution • Portfolio & Project Management and Business Planning & Consolidation modules were removed to de-risk the Project. Costs of these licences were renegotiated with SAP and reallocated to in-scope modules.
Business Strategy and Engagement	• The Project was established with a strategy to replace unsupported legacy systems, however this evolved over the implementation which required clear business strategies • An imbalance of stakeholder/business involvement and engagement to support and drive outcomes.	• Endorsed scope and the commitment to support Releases • Greater business engagement with the Project through key business roles' engagement in governance forums.
Project Delivery	• The Project governance was not set up for complex multi-Releases. • Endeavour was the system integrator without strong SAP knowledge, skill and experience. • A complex vendor landscape was pursued without a holistic approach to scope or vendor contracts. Vendors were managed in silos.	• Reset Project governance with greater transparency to the business on Project delivery • New delivery and engagement model with vendors • New internal Endeavour team with experienced and seasoned SAP veterans • Vendors to deliver their mirror image team of seasoned SAP experts.

1 Scope and approach

1.1 Background and drivers of the Project

Following its privatisation in 2017, Endeavour embarked on a company-wide transformation agenda, recognising its historical underinvestment in technology, as well as the need to position the company to respond to industry uncertainties caused by changing market dynamics and customer preferences. The Project was also forecast to generate operating efficiencies for Endeavour and ultimately, its customers in Sydney's Greater West, the Blue Mountains, the Southern Highlands, Illawarra, and the South Coast of New South Wales.

The Project was developed with the intention of enabling Endeavour to deliver critical services to customers through the long term at lowest cost. The Project was initiated due to the lack of suitability of existing systems and a known need to future-proof the resilience of ICT and network systems. The design principles of the Project were built on enabling the overall business corporate strategy to be the best performing network in Australia.

The systems implemented under the Project are primarily SAP systems that focus on building a platform for the business to expand upon. The Project was structured as four Release projects of work, as shown in Table 7 that deliver a suite of systems that will ultimately touch and impact every Endeavour employee and their way of operating.

Table 7 – Project Releases

Release 1	**Release 2**	**Release 3**	**Release 4**
• Success Factors Learning – training and compliance courses • SAP Concur – expense management • Click – work scheduling.	• Kronos – time sheeting, attendance recording and leave requests • SuccessFactors: Employee Central – personal and employee information, corporate directory • SuccessFactors: Employee Central Payroll – processes payroll • SuccessFactors: Recruitment – managing internal and external recruitment • SuccessFactors: Onboarding – onboarding new employees.	• Asset and Works Management (EAM) – management of lifecycle physical assets and works management • Environment Health and Safety – integrated incident management, operation risk and environment processes • Finance – integration access business, streamline and automates business processes • Procurement and Logistics – management of good and services across all business processes.	• Industry Specific-Solution for Utilities • National Metering Identifier and Metering Master Data Management • Meter Reading and Estimating • MSATS and Business to Business Market Interactions • Billing and invoicing • Work management for metering.

As of June 2022, Releases 1-3 are completed. Release 4 is due to go-live in July 2022. Once these foundational Releases are in place, it is intended that further enhancements will occur based on

business merit and as part of an ongoing roadmap of improvements. This will be funded as non-recurrent ICT capex.

1.2 Scope and approach

This PIR assesses the status of Project costs, delivery timeframes and benefits realised following the implementation of Releases 1-3 and to identify the steps that have been taken to address recommendations previously raised. It provides a critical review of the implementation of the Project in alignment with the AER's non-network ICT capex assessment approach.

While this report focuses on Releases 1–3, anticipated benefits for Release 4 have been considered for the purpose of estimating the overall benefits of Project implementation.

As part of this PIR, Deloitte has:

- Collated and reviewed key Project artefacts that outline the original planned cost, schedule and benefit profile for the Project and for each Release
- Interviewed key stakeholders to elicit project learnings that can be leveraged in future project of a comparable nature
- Analysed the history of actual cost to planned cost incurred across the three Releases, and the key events where the planned cost varied
- Analysed the history of actual schedule to planned schedule across the three Releases, and the key events where the planned schedule varied
- Analysed the history of planned benefit targeted across the three Releases, and the key events where Project benefits were either achieved or planned benefit varied
- Synthesised the material variations in costs, schedule, and benefits.

Chapter 2 provides an overview of key regulatory requirements.

Chapter 3 sets out the high-level strategic narrative which frames ICT expenditure according to Endeavour's business technology strategy and its broader business strategy.

Chapter 4 sets out the Project schedule and costs (including status, challenges, material variances and outstanding activities) as well as the functionality delivered and benefits realised and forecast (including outcomes achieved and material variances).

Chapter 5 summarises the business actions undertaken in response to a strategic review of the Project in September 2021.

Chapter 6 outlines the key lessons learned.

Chapter 7 identifies how Endeavour is planning to action lessons learned and how these will be incorporated into future Projects of a comparable nature.

1.3 Assumptions and limitations

Deloitte's analysis and findings are based on information provided by Endeavour and interviews with key stakeholders. We have assumed the information provided to us is true and correct.

Deloitte's findings are based on our understanding and interpretation of regulatory requirements including with respect to prudency and efficiency and the information provided to Deloitte by Endeavour and do not pre-empt any decisions made by the AER in the future, including with respect to the prudency and efficiency of the Project.

1.4 General use restriction

This report is prepared solely for the internal use of Endeavour. This report is not intended to and should not be used or relied upon by anyone else and Deloitte accepts no duty of care to any other

person or entity. The report has been prepared for the purpose set out in our engagement letter dated 30 March 2022. The use of Deloitte or the advice contained should not be used outside of that context.

2 Review of Endeavour's Digital Landscape

2.1 History of the business transformation

2.1.1 Prior to acquisition (2016)

Historically Endeavour was run with a mandate typical of a government owned utility and did not invest in non-recurrent ICT capex. Legacy ICT systems were maintained, with multiple customer facing systems operating at 20 years old and finance systems over 5 years old. In the lead up to the private acquisition in 2017 there was a further reluctance to invest as the business continued to avoid non-recurrent ICT investment.

Boston Consulting Group was engaged prior to the acquisition in 2016, to advise bidders on Endeavour's ICT position. The report found that the ICT risk profile had grown to the point a whole transformation of the ICT environment was recommended. Ultimately this transformation narrative shaped bidder presentations as part of the transaction process and allowed for whole of ICT transformation as part of their business plans.

2.1.2 Acquisition and business transformation initiation (2017-2018)

Endeavour was acquired by a Macquarie Group-led consortium in 2017 and the incoming owners' business plan set the objective to replace legacy technology platforms with SAP within 18 months of acquisition.

Endeavour performed a due diligence of available technology solutions. The due diligence included an eight-week analysis of a similar UK DNSP's customised SAP solution (which included a three-week site visit) and interviews with six other DNSPs from Australia, New Zealand and the United States that had embarked on similar programs in recent years. In November 2017, Endeavour's Board approved $40.0m ($35.0m of capex and $5.0m of operating expenditure (opex) for a planning and design phase of an 'out of the box' SAP solution and in August 2018, resolved to proceed with the implementation of the staged Release based solution.

At that time, specific details of the eventual Business Transformation were not yet known, and Endeavour was unable to quantify the Business Transformation's overall costs and benefits for the 2019-24 determination. Endeavour's Board approved an envelope of $189.4m and adopted a self-funding approach (i.e. the costs above like for like functional replacement would be funded through opex and capex reductions achieved within the RCP).

In addition to regular Business Transformation status reports to the Board, Endeavour enlisted Pindara Consulting (Pindara) in June 2018 as an independent advisor to perform regular quality assurance reviews on the Business Transformation and to ensure proper governance.

2.1.3 Business transformation pause and restart (2019)

In April 2019, Pindara's quality assurance review recommended that the Business Transformation be paused and reset, citing a number of findings pointing to the lack of progress in the Business Transformation's implementation, the deterioration of governance structures and the likely delay of the go-live date beyond October 2019.

The Board heeded Pindara's advice and acted on its recommendations - pausing the Business Transformation in May 2019, commissioning a study into the Business Transformation's current position, terminating both the Business Transformation's technology sponsor and Program Director and redefining the Business Transformation's governance structure (including the appointment of a new Program Director and Program Delivery Director)

The Board resolved to restart the Business Transformation in December 2019, once the appropriate steps had been completed in response to the findings of Pindara's report. Although final costs had not been received from all vendors at that stage, estimated costs had increased to $272.4m and Endeavour maintained its previous self-funding approach; however, Endeavour also recognised that funding the Business Transformation from system-allocated capex exposed the business to regulatory risk.

2.1.4 Revised business case (2020)

In August 2020, the Business Transformation's expected costs had been fully discovered and an updated business case was presented to the Board, which detailed a rise in costs. In late 2019 and early 2020 with the pending implementation of Release 2 (of 4) several company-specific learnings surfaced regarding scope and architecture design, engagement and program delivery which led to Endeavour re-defining the foundational scope for Release 3. The new scope would provide for

optionality on future technology choices to align with changing enterprise architecture and business needs. The total estimated cost of the Business Transformation now amounted to $350m for all four Releases, including contingency - which the Board approved.

The Board continued to closely monitor the Business Transformation and commissioned an internal audit report on Endeavour's IT Strategy and Governance in August 2021, which found that the strategy's definition, alignment and execution were satisfactory.

2.2 The AER's assessment approach

Endeavour's business and investment plans, including ICT expenditure, must reflect its regulatory obligations. This includes prudent, efficient and sustainable management of the network. Achievement of the regulatory obligations ensures the long-term health and sustainability of the network.

The AER regulates Endeavour's revenue by setting the total revenue it may recover from its customers. It determines the efficient capex and opex necessary for Endeavour to meet its regulatory obligations and makes 5-yearly regulatory determinations:

- The current RCP is 1 July 2019 to 30 June 2024
- The next RCP is 1 July 2024 to 30 June 2029.

The AER regulates Endeavour's revenue by setting the total revenue it may recover from its customers.

As part of its assessment of any proposed or incurred capex, the AER assesses if expenditures meet the NER's capex objectives. The capex objectives are:[2]

1. *Meet or manage the expected demand for standard control services over that period*
2. *Comply with all applicable regulatory obligations or requirements associated with the provision of standard control services*
3. *To the extent that there is no applicable regulatory obligation or requirement in relation to:*
    a. *the quality, reliability or security of supply of standard control services, or*
    b. *the reliability or security of the distribution system through the supply of standard control services,*

    to the relevant extent:
    c. *maintain the quality, reliability and security of supply of standard control services, and*
    d. *maintain the reliability and security of the distribution system through the supply of standard control services*
4. *Maintain the safety of the distribution system through the supply of standard control services.*[3]

The capex objectives support achievement of the national electricity objective (NEO) which is:[4]
"To promote efficient investment in, and efficient operation and use of, electricity services for the long-term interests of consumers of electricity with respect to:
    a. *price, quality, safety and reliability and security of supply of electricity*
    b. *the reliability, safety and security of the national electricity system".*

For the assessment of forecasts for non-network ICT capex, the AER's approach includes consideration of whether the ICT is 'recurrent' or 'non-recurrent'. Recurrent ICT is expenditure that is related to maintaining existing ICT services, functionalities, capability and/or market benefits, and occurs at least once every five years. Non-recurrent ICT is any ICT expenditure that is not 'recurrent'. The AER considers different factors when assessing recurrent and non-recurrent ICT.

Based on these definitions, the Releases 1-3 have been classified as non-recurrent ICT expenditure, in that it involves the delivery of new or expanded ICT capability, functions and services. The AER's assessment methodology has been summarised for each category of non-recurrent ICT expenditure in Table 8 below.

[2] NER, clause 6.5.7(a).

[3] NER, Chapter 6, Section 6.5.6.

[4] NEL, section 7.

Table 8 – AER Assessment Approach for Non-Recurrent ICT Expenditure

Assessment Factor	Definition
Maintaining existing services, functionalities, capability and/or market benefits that do not occur every five years	Given that these expenditures are related to maintaining existing services, the AER notes that the investment will not always have a positive NPV. As such, it is reasonable to choose the least negative NPV option from a range of feasible options including the counterfactual. For such investments, they should be justified based on the business case, where the business case considers possible multiple timing and scope options of the investments (to demonstrate prudency) and options for alternative systems and service providers (to demonstrate efficiency). The assessment methodology would also give regard to the past expenditure in this subcategory.
Complying with new / altered regulatory obligations / requirements	It is likely that for such investments, the costs will exceed the measurable benefits and as such, the least cost option will likely be reasonably acceptable. Should there be options to achieve compliance through the use of external service providers, the costs and merits of these should be compared.
New or expanded ICT capability, functions and services	These expenditures require justification through demonstrating benefits exceed costs (positive NPV). A CBA will be used to assess this. Where benefits exceed costs, consideration should also be given to self-funding of the investment. For each subcategory of non-recurrent expenditure, there may be cases where the highest NPV option is not chosen. In these cases, where either the chosen option achieves benefits that are qualitative or intangible, evidence is expected to support the qualitative assumptions. Evidence provided must be commensurate with the cost difference between the chosen and highest NPV option. Where non-recurrent projects either lead to or become recurrent expenditures in the future, this needs to be identified in the supporting business case and accounted for in any financial analysis undertaken to support the investment.

Source: AER[5] (2019)

Businesses are to also incorporate cost-saving benefits achieved from non-recurrent expenditure into their overall expenditure forecast. If these interrelationships have not been clearly identified, the AER will not accept the proposed expenditure. In the cases where ICT expenditure is proposed to deliver cost savings, but it has not been evidenced that these savings have been identified in the expenditure forecast, the AER will apply the self-funding approach.[6]

[5] Australian Energy Regulator, Guidance Note, *Non-network ICT capex assessment approach for electricity distributors*, November 2019 at https://www.aer.gov.au/networks-pipelines/guidelines-schemes-models-reviews/non-network-ict-capex-assessment-review

[6] A self-funding approach is where the proposed expenditure is not included in the forecast. It assumes that expenditure for acquiring new functionality to improve the business is self-funded from the productivity and efficiency cost savings. However, forecast is a bucket so the business if free to spend if it considers it will reduce overall costs where it can benefit from the incentive schemes. Australian Energy Regulator, Guidance Note, *Non-network ICT capex assessment approach for electricity distributors*, November 2019 at https://www.aer.gov.au/networks-pipelines/guidelines-schemes-models-reviews/non-network-ict-capex-assessment-review

2.3 PIRs' scope and focus

The AER has an expectation for businesses to produce PIRs for major ICT programs, to increase the transparency and understanding of realised benefits, given that the benefits of ICT expenditure are often not readily observable to consumers as they do not directly deliver network services and are not readily measurable through conventional network service performance indicators.

The AER expectations for best-practice PIRs include:

- A comparison of the actual cost to the proposed cost in the business case
- A comparison of the actual timeframe to complete the project with the forecast timeframe
- A comparison of the actual achieved benefit to the forecast benefit (as best estimated) in the business case
- An explanation of any material variations in costs, delivery timeframe, and benefits realised.

The focus of the PIR is to provide information to assess the accuracy with which a business forecasts its benefits. It also provides an opportunity for a business to demonstrate the extent to which it can deliver the benefits of ICT projects on time and on budget and the lessons learned that can be applied to subsequent comparable projects.

We have assessed Releases 1-3 against the areas of focus identified by the AER, providing an assessment of costs, delivery and benefits.

3 Strategic Rationale for Investment

A broad range of internal and external factors, including changing customer expectations and rapid and continuous technological evolution – present both opportunities and risks to Endeavour and DNSPs in general. Endeavour identified and responded to these factors in its FY22-26 Corporate Strategic Plan and noted that addressing them will require further significant investments in ICT.

3.1 Internal and external factors

3.1.1 Fragmented and aging technology

Endeavour has adopted both centralised and decentralised approaches to technology systems over the past twenty years, resulting in a complex and fragmented portfolio of systems, customisations, and add-on components across all business areas. This portfolio includes Enterprise Resource Planning (ERP: HR, Supply/Logistics, Finance), Enterprise Asset Management (EAM), Outage Management (OMS), Geographic Information Systems (GIS), Information Management, Project Management, Billing and Market Systems, and Reporting and Analytics.

These legacy systems are characterised by differing states of technical currency, a large amount of technical debt (in Endeavour's case, the result of decades of layering partial and imperfect software solutions on top of one another), complex and tightly coupled integration, with complex and high-cost operational support and change management.

Endeavour recognised the need for new technology in the medium term for many parts of the business to achieve specific strategic aims (e.g. to support further maturation of asset management's data-driven decision-making, to unlock field services productivity savings through greater use of workforce management technology). However, many of the current systems and applications are at, or close to, end of life, the current technology architecture and vendor ecosystem are complex and fragmented, and there is limited IT/OT convergence. Endeavour's qualitative and quantitative benchmarking showed that these issues contributed to the expensive maintenance cost of Endeavour's ICT function and its relative immaturity with respect to comparable global utilities.

3.1.2 Operating inefficiencies

According to Endeavour's internal analyses, the legacy technology environment contained significant operating inefficiencies that would be minimised or eliminated with a modern, single-platform architecture. Endeavour estimated direct IT savings of $7.5m per annum due to the decommissioning of legacy systems[7] in addition to a host of other savings that were not quantified, including a lower IT staffing level from a simplified application and infrastructure landscape, and enabling broader business benefits through automation, productivity uplift and process efficiency.

3.1.3 Digitisation

Technology continues to evolve at a rapidly increasing rate. This provides both new opportunities to increase customer satisfaction and improve the way Endeavour operates, but also introduces heightened cyber security risks that must be mitigated.

Prior to its acquisition in 2017, Endeavour was, according to internal analyses, underinvested in technology and automation. Therefore, there was a significant opportunity for Endeavour to become a leaner, more efficient organisation through the use of process automation. In addition, modern systems provide access to deeper and richer insights through data analysis – allowing Endeavour to understand its customers at a deeper level, improve its decision-making and optimise its operations

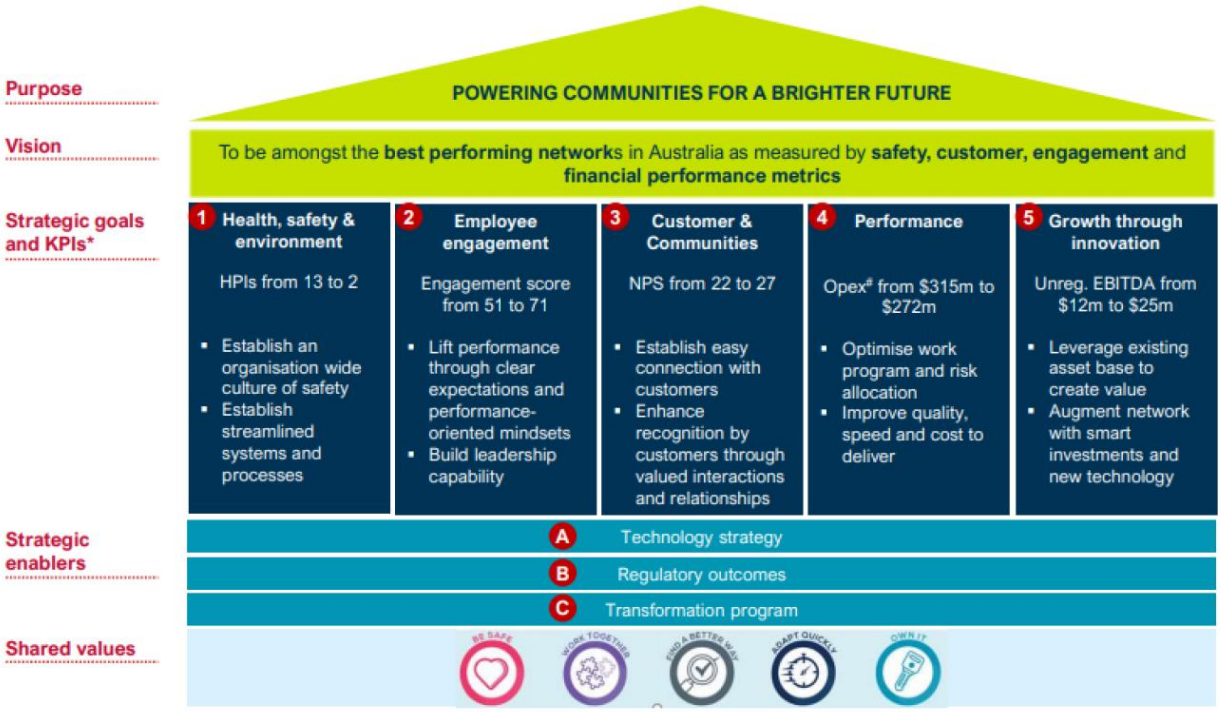
Cloud hosted technologies are becoming more prevalent across all sectors of the economy, including the energy industry. Whereas in the past, technology systems were hosted on company premises in servers and other owned infrastructure, increasingly technology vendors are only making their products available via the cloud, or remote servers. Cloud hosting brings many benefits for technology systems, including greater scalability and flexibility, agility, and lower infrastructure costs. It can also drive greater staff productivity and reduce risks of owning infrastructure, through outsourcing.

[7] Board Paper, Technology Transformation Strategy, 30 November 2017

3.2 Strategic Plan

Conscious that the future electricity network and technology landscape will continue to change, Endeavour developed the Strategic Plan shown in Figure 1.

Figure 1 – Strategic Plan for FY22-FY26



Source: Endeavour

3.2.1 Strategic goals

While Endeavour's purpose of "Powering communities for a brighter future" and vision "To be amongst the best performing networks in Australia as measured by safety, customer engagement and financial performance metrics" are unaffected by market uncertainty, their Strategic Goals are flexible enough to adapt to changing external forces.

Endeavour's first Strategic Goal of Health, Safety & Environment seeks to build a strong safety culture that is embedded at all levels of the organisation, as well as developing best practice risk mitigation processes and driving sustainable environment practices. Initiatives identified to support this Goal include refreshed education and engagement programs, OH&S programs – especially regarding risk management – and improved waste diversion and recycling practices. These initiatives will transform Endeavour into a safer workplace for its employees as well as improve its impact in the community.

The Employee Engagement Strategic Goal aims at improving Endeavour's workforce performance and capability, while also developing leaders and curating the business' culture. Targeted recruitment, clear setting of expectations and upskilling employees through training and development are key initiatives being targeted under this Strategic Goal. Appropriate rewards for performance, as well as the empowerment of leaders at all levels of the organisation and a focus on diversity and inclusion also support Employee Engagement and will ultimately make Endeavour a great place to work and a natural destination for talent.

The central Strategic Goal of Endeavour's Strategic Plan revolves around Customer & Communities. Achieving this Strategic Goal relies heavily on embedding a customer-centric culture at all levels of the organisation and a Voice of the Customer Program will be developed to share key insights and drive customer-centric thinking. However, there are also a number of tangible initiatives that will improve Endeavour's ability to understand its customers and deliver a first-class customer experience. These include developing a range of channels so that customers choose how they interact with Endeavour. To ensure consistency across channels, customer data will need to be synthesised from all touchpoints to

form a single view of the customer. Another priority is developing a Customer Digital Channel to allow online interactions and self-service. Service delivery forms another core component of the Customer & Communities Strategic Goal and the resolution of issues on first contact and providing valuable information anytime and anyhow are key to achieving the goal of building a deeper connection with customers and building a trusted brand in the community.

Endeavour's Strategic Goal of Performance centres on the optimisation of Endeavour's work program and risk allocation, and improving the quality, speed and cost to deliver its services. Efficiency will be driven across the organisation through process improvement, deployment of technology and continued focus on external spend. Heavy optimisation of Endeavour's capital base will be enabled by new investment management tools and automation, enhanced network resilience, with flow on STPIS benefits and improved outcomes for customers through ongoing grid transformation and improvement in incident response.

The final Strategic Goal of Growth Through Innovation seeks to accelerate growth in unregulated activities through engaging with key stakeholders to capitalise upon the new infrastructure growth in Endeavour's region and using this as a platform to innovate its service offerings and develop a culture of innovation more broadly across the organisation. The smart investments and new technology delivered under this Strategic Goal are key to creating additional value and future-proofing the business.

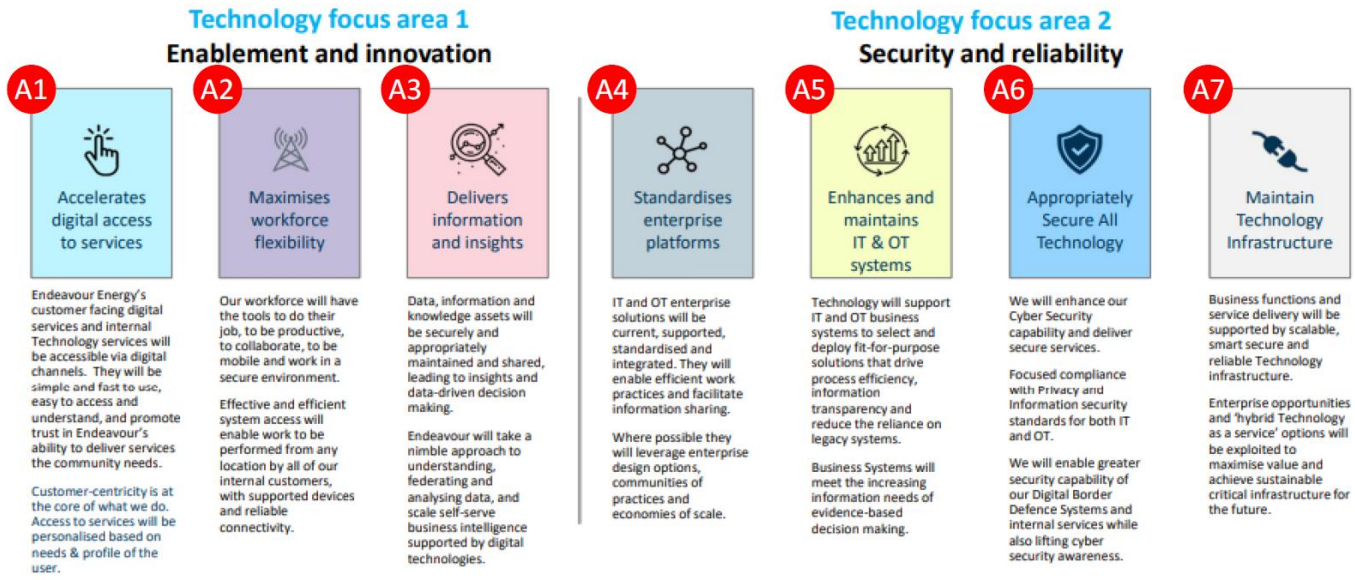
3.2.2 Technology strategy

Endeavour's Strategic Goals outline the core initiatives that will be delivered through Strategic Plan's execution. These Strategic Goals are supported by Strategic enablers, which will deliver the foundational capabilities required to achieve the objectives set out in the Strategic Plan. Without these foundational capabilities, the benefits from initiatives will be extremely limited, or may not be achieved altogether.

The three Strategic enablers outlined in Endeavour's Strategic Plan are fundamental to future-proofing the business against an uncertain future and are required to position the business to maintain its service delivery standards regardless of the eventual future state of the market.

Technology Strategy is one of the Strategic enablers outlined, Endeavour's Technology Strategy comprises seven Themes which provide critical enabling capabilities for the achievement of the company's Strategic Goals.

Figure 2 – The seven themes of Endeavour's Technology Strategy



Source: Endeavour

3.2.3 ICT Investment

Endeavour's Strategic Plan and Technology Strategy uncovered significant gaps between the business' current-state capabilities and those required to successfully navigate the uncertain market dynamics previously identified. Specific incremental ICT capabilities were required to improve network monitoring and management - which in turn would enable more efficient and effective utilisation of field services teams to maintain the network – and general foundational improvements were required to harmonise the business' fragmented and aging ICT environment. The Project was identified as necessary to support the Strategic Plan and Technology Strategy.

Importantly, the Project was designed as a foundational investment which would delivers enabling capabilities that would position Endeavour for success, regardless of the market's eventual future state. Below is an outline of the capabilities delivered by the Project, and the specific alignment to the Strategic Plan and Technology Strategy is identified by these markers.

Figure 3 – Mapping of the Project's functionality to its Strategic Plan and Technology Strategy

	Strategic Plan: Strategic Goals					Technology Strategy: Themes						
	1 Health, safety & environment	2 Employee engagement	3 Customers & communities	4 Performance	5 Growth through innovation	A1 Accelerates digital access to services	A2 Maximises workforce flexibility	A3 Delivers information and insights	A4 Standardises enterprise platforms	A5 Enhances and maintains IT & OT systems	A6 Appropriately secure all technology	A7 Maintain technology infrastructure
Optimus												
Scheduling and mobility		✓		✓			✓					
LMS		✓	✓	✓			✓					
EAM				✓	✓		✓	✓	✓			
EHS	✓						✓	✓	✓			
Billing and revenue			✓			✓		✓	✓			
Broader, package benefits												
Integrated network and operations				✓				✓		✓		
Operational efficiency				✓					✓			
Platform for growth					✓				✓			

Source: Endeavour

4 Project status and outcomes

Deloitte has undertaken a detailed analysis of Releases 1-3 with a particular focus on the Project schedule and a quantitative assessment of Project costs and benefits.

The Project schedule and costs were revised during the course of implementation. It is understood that the Project originally aimed to replace major legacy systems that were no longer fit-for-purpose. However, the Project in its current form has a much stronger focus on developing a platform that is enabled for future investment to deliver automation, productivity and data analysis that is critical for future business function and efficiency.

The 2019 Project pause allowed Endeavour to focus the Project steadily on its core outcomes, functionality and embed the lessons learned through a review process conducted by Endeavour's assurance consultant, Pindara. This has allowed both Release 2 and 3 to be delivered on time and below (the revised) budget in August 2020 and October 2021 respectively. The ongoing reviews and Project pause demonstrate the active management of the Project and highlights the fact that when efficiencies have been identified through the period, they have been actively embedded into implementation.

A CBA analysis shows that quantified benefits expected to be realised exceed the expected costs across a 12-year time horizon (FY18-FY29), with a NPV of $108.2 million and a BCR of 1.52.

This estimate includes benefits for Releases 1-4 given the interconnected nature of the benefits and the Releases. This demonstrates that despite the increases in Project costs, the benefits realised outweighed the costs and delivered a beneficial outcome for Endeavour.

4.1 Functionality delivered

The Project contains a suite of modules, with specific capabilities that support the Strategic Plan and Technology Strategy.

1. Scheduling and mobility

The Click module's intelligent and real-time scheduling of field services maximises workforce flexibility. It provides a data-driven approach to optimising maintenance schedules – generating efficiencies and improving performance – while reducing the frequency and length of outages (both planned and unplanned) to improve Endeavour's customers and communities' experiences. By routing the maintenance field force more efficiently, Endeavour can resolve network issues faster and therefore deliver a superior customer experience.

2. LMS

The Project' LMS module provides a centralised, online platform for employee learning and accelerates digital access to services for internal users. The platform allows for management to clearly communicate expectations and reinforce performance-oriented mindsets to its workforce, as well as equip them with the skills to meet expectations, driving employee engagement. Flow-on benefits from upskilling employees improve customer interactions with the customer service staff - customer and communities – and drive operating efficiencies throughout the business.

3. EAM

EAM gathers important complex data sets into a centralised location and provides the foundational information that powers field services tools, which places information required by field service staff in their hands when they need it to maximise workforce flexibility. In addition, the collection and standardisation of asset data enables deeper analysis and delivers information and insights which drives operational efficiencies and improves performance.

The capabilities from EAM are critical in the future as the network requirements and uses become more complicated, and product and service delivery more diverse. EAM's standardised data platform also

serves as a foundation on which future software development or integrations can be built, paving the way for growth through innovation.

4. ERP

Enterprise Resource Planning (ERP) provides Endeavour's Finance function with a comprehensive, integrated and up to date financial management system encompassing general ledger, banking and cash management, asset accounting, controlling / management accounting, statutory reporting, planning / budgeting / forecasting, month and year end processing, accounts payable, accounts receivable, sub-delegations and interface with Concur (expense management). By automating currently manual and non-integrated activities, it allows the Finance team's transition from lower to higher value-added tasks in support of the business, as well as providing enhanced data and more insightful reporting to support better and more timely decision-making across the business.

5. EHS

The EHS module collates and standardises important health and safety information. The system also reinforces Endeavour's safety culture and embeds a set of streamlined health and safety processes in the business to support the Strategic Plan's focus on health, safety and environment.

6. Billing and revenue

Upgrading Endeavour's 'behind-the-meter' systems enable the development of customer-facing portals and increases metering and billing transparency. The improved customer experience accelerates access to digital services for external users, while also delivering information and insights and improving interactions with customers and communities.

Increased reliance on systematised, rules-based billing reduces errors and improves customers' and communities' experiences and reduces customer service costs to improve performance.

In addition to the specific capabilities outlined above, the Project as a package of modules delivers broader benefits in support of Endeavour's Strategic Plan and Technology Strategy:

- **Integrated network and operations** - Under the Project, a significant number of Endeavour's functions are brought together on a common SAP platform, as opposed to disparate systems and applications. The common platform and uplift in capability generated by the Project enhance and maintain Information Technology and Operational Technology systems and immediately ensure smooth network operations and performance. The centralised recording of data and subsequent delivery of information and insights facilitate high-quality decision making and drive performance improvements over the longer term
- **Operational efficiency** - The standardisation of enterprise platforms reduces friction between disparate systems and applications, and immediately reduces integration costs (e.g. development, maintenance, etc.) as well as inefficiencies to improve performance. The improved capabilities delivered by the Project increase productivity and reduce human capital requirements, also improving performance
- **Platform for growth** - In addition to the critical operational need, the Project underpins the strategic direction of the business and aligns Endeavour's operations to its Strategic Goals. Bringing the majority of business functions onto a common, scalable system standardises enterprise platforms and provides a foundation for future software development and integrations, paving the way for growth through innovation.

4.2 Project schedule and costs

4.2.1 Project schedule

In August 2018, Endeavour prepared a business case which outlined a Release plan developed bottom-up by the Project team. It incorporated advice provided by SAP consultants and vendors to amend the overall timeline as well as the number of Releases. This Release plan was developed by applying recommendations provided by Pindara, who advised that the initially intended Release plan for all functionality to be delivered in July 2019 was unachievable. Pindara recommended that the go-live date for Release 1 be delayed to January 2020. Although the agreed Release plan employed a more aggressive timeline extrapolated from the Pindara recommendation, the Project team undertook a detailed analysis of the Project schedule and associated risk and considered the more aggressive timeline to be achievable.

Endeavour continued to engage Pindara to undertake routine quality assurance reviews for the status, efficiency and management of the Project. It is through these reviews and consequential recommendations that the Project was paused in May 2019. Over the first year of the Project, Pindara identified key reasons why a Project pause was recommended including:

- Quality of design and deliverables
- Vendor management and control
- Requirements capture
- Decision making and leadership.

The Project was paused from May 2019 to December 2019 as Endeavour adopted Pindara's recommendations focusing on changes in governance, leadership, lead vendor, project management and approach.

In August 2020, a revised business case was prepared which incorporated several company-specific learnings regarding scope and architecture design, engagement and Project delivery. This resulted in redefining the foundational scope and timeline of Release 3 and introducing an additional Release 4. Release plans from 1-4 are shown in Table 9.

Importantly, the new scope provided for greater optionality on future technology choices to cater for changing enterprise architecture and business needs.

Table 9 - Project Release Plans

	2018 Business Case	2020 Business Case	Delivery
Release 1	February 2019	N/A	November 2018 – October 2019
Release 2	October 2019	August 2020	August 2020
Release 3	April 2020	October 2021	October 2021
Release 4	N/A	April 2022	July 2022 (forecast)

Although the Project pause highlights the challenges the Project has faced, it allowed Endeavour to focus the Project steadily on its core outcomes, functionality and embed the lessons learned through the ongoing Pindara review process. This approach has allowed both Release 2 and 3 to be delivered on time in August 2020 and October 2021 respectively.

The ongoing reviews and Project pause demonstrate the Project's active management and highlights the fact that when efficiencies have been identified through the period, they have been actively embedded into implementation.

4.2.2 Project budget

The Project has undergone multiple revisions to its total budget which reflects the significant deviation from original design, implementation and governance plan. The $161 million increase from 2018 and 2020 business cases reflect these fundamental changes and is summarised in Table 10 below. Further detail to explain material changes and variances is documented below.

Table 10 – Project Budget versus Actual ($m, $nominal)

	2018 Business Case	2020 Business Case	Delivery
Release 1 and 2	38.0	37.9	33.5
Release 3	124.2	227.9	205.4
Release 4	27.1	83.9	79.5*
Total	**189.4**	**349.7**	**318.4***

*Forecast as at June 2022

In November 2017, Endeavour commenced an 'Explore' phase to design the core of the solution at a high level by walking the business through the standard processes of SAP with a lens of "if not, why not", to follow the core Project principle of adopting the best practices that SAP offer. During the Explore Phase there were over 400 workshops held with over 280 people from the business participating in these workshops. The Explore Phase cost $35.7 million which was a $4.8m favourable variance to budget.

Based on the Explore Phase findings, Endeavour submitted a business case in August 2018 to fund the 'Deploy' phase of the Project, for a total Project capex cost of $179.3 million (including $22.5 million contingency) and $189.4 million in overall total expenditure.

Endeavour considered various contract structures to minimise the risk of the Project being delivered over budget. PMO and Change Management contracts were to be delivered on a time and materials basis as these elements were deemed to be of lower risk. For the remaining activities, Endeavour sought a fixed price contract with fixed delivery dates. This approach to mitigating high risk items represents an efficient approach to cost management.

Following the August 2018 business case approval and commencement of the 'Deploy' phase, Endeavour continued to monitor Project costs against budget, which were periodically circulated to the Board. In December 2018, Endeavour undertook a probability assessment of forecast costs which identified a potential $47.2 million unfavourable forecast variance to budget. This variance was primarily driven by insufficient consultant resources allocated to system integrators for GRC and SAP Security which increased the risk of flow-on delays to other module's Release dates.

In May 2019, the Project was paused to undertake a full design review as well as reassess the delivery approach for each forthcoming Release. The objective of this exercise was to validate the design and build activity and identify any gaps that needed to be close, particularly in relation to integration between the workstreams.

During the 'Detailed Design' phase of Release 3 in August 2020, the Project received $104 million of additional funding to complete Release 3, thereby bringing the final total Project funding (including Release 4) to $349.7 million.

This significant cost increase was a result of the changes implemented in the Project pause and the refocus of Release 3 on delivering the systems that would allow for future optionality of technology services to align with changing enterprise architecture and business needs. This was required to realise the Project's strategic intent and to extract the maximal benefit from the investment made to date. Challenges and the key learning applied are summarised in Table 11.

Table 11 - Challenges and Key Learnings Applied

Category	Challenges	Key Learnings Applied
Scope and Architecture	• Depth and breadth of process and technical scope was too extensive, complex and undeliverable • Designs developed did not appreciate the architecture of implementing ISU (Release 4) on top of ERP/EAM (Release 3).	• A balanced and executable Release 3, scope signed off by Endeavour • A holistic architecture for Release 3 and 4 with common objectives understood and impacted to negate short-term decisions impacting the long-term solution. • Portfolio & Project Management and Business Planning & Consolidation modules were removed to de-risk the Project. Costs of these licences were renegotiated with SAP and reallocated to in-scope modules.
Business Strategy and Engagement	• The Project was established with a strategy to replace unsupported legacy systems, however this evolved over the implementation which required clear business strategies. • An imbalance of stakeholder/business involvement and engagement to support and drive outcomes.	• Endorsed scope and the commitment to support Releases • Greater business engagement with the Project through key business roles' engagement in governance forums.
Project Delivery	• The Project governance was not set up for complex multi-Releases • Endeavour was the system integrator without strong SAP knowledge, skill and experience • A complex vendor landscape was pursued without a holistic approach to scope or vendor contracts. Vendors were managed in silos.	• Reset Project governance with greater transparency to the business on Project delivery • New delivery and engagement model with vendors • New internal Endeavour team with experienced and seasoned SAP veterans • Vendors to deliver their mirror image team of seasoned SAP experts.

The final budget for Releases 1-3 of $293 million represents the true resourcing required to deliver the agreed scope to lay the foundations for Endeavour's systems and processes to be streamlined and simplified and enabling end-to-end business integration, driving towards more effective operational outcomes. The 6-month Project pause was crucial to define the actual scope for each of the three foundational Releases and review the process, toolsets and capabilities.

The remediation tasks required to rectify this outcome would have resulted in further delays and increased Project costs. These risk mitigating measures demonstrates the prudent approach that Endeavour took to ensure Project outcomes are achieved at an appropriate cost.

4.2.3 Project cost

Following confirmation of total Project budget of $349.7 million (including Release 4), Endeavour has delivered each Release to date under budget. Release 4 is also forecast to be completed below budget resulting in a total Project forecast underspend of $31.3 million.

Table 12 - Project Costs versus Budget ($m)

Project Phase	2020 Business Case	Actual	Variance to 2020 Business Case
Release 1 and 2	37.9	33.5	(4.5)
Release 3	227.9	205.4	(22.5)
Release 4	83.9	79.5*	(4.5)
Total	**349.7**	**318.4***	**(31.3)**

*Forecast as at June 2022

Endeavour has achieved this outcome to forecasts cost during delivery by employing the following key processes:

- **Revised Scope and Architecture –** A balanced and executable scope for Release 3 was signed off by Endeavour which involved the removal of Portfolio & Project Management and Business Planning & Consolidation modules. The costs of these pre-purchased licences were renegotiated with SAP and reallocated to in-scope modules. A holistic architecture for Release 3 and 4 was employed which de-risked the impact of short-term decisions impacting the long-term solution
- **Governance –** Project governance structures were reset to focus on greater transparency and business engagement to enable timely identification and mitigation of Project cost risks
- **Delivery Model** – A hybrid delivery approach was adopted to identify a 'prime' integrator per Release with Endeavour retaining a Project integration role across Releases at the enterprise level. This approach ensures the delivery team has the right capabilities to deliver the Release on time, thereby reducing the chances of contractor variations. This also avoided a costly full procurement process of a systems integrator
- **Vendor Arrangements** – Endeavour executed fixed price contracts with key vendors to maximise cost certainty. Additionally, a vendor negotiation reserve was established to cater for any uplift in vendor costs as contracts are negotiated and executed.

4.3 Benefits realised

This section outlines the quantifiable benefits realised from the Project. It does not include the additional benefits identified in Section 7.1.

Endeavour has completed an identification of functionality benefits that can be attributed to the deployment of the Project. This work was reviewed by Deloitte to validate the assumptions, methodology and outcomes. Deloitte considers that Endeavour has taken a robust approach to

identifying a broad scope of benefits that can reasonably be attributed to the enhanced functionality associated with the deployment of the Project.

The approach adopted by Endeavour focuses on the incremental uplift achieved through the implementation of the Project and displays a clear narrative alongside most quantified benefits, mapping each benefit specifically to a Release.

The assessment indicates a range of benefits that can be mapped and scaled against the expenditure associated with each Release including:

- **Productivity gains** – via improved scheduling and management of the field force and enabling the insourcing of previously outsourced activities
- **FTE reductions** – based on the automation of processes
- **Improved safety outcomes** – staff and customer safety is improved by aligned data and greater visibility of the operational state of the network
- **Enhanced organisational capabilities** – improved analysis and monitoring of the network enhances future network planning.

In addition, Project-wide future benefits that can be realised through business transformation enabled by digitalisation have been considered, such as avoided capital costs related to retaining legacy systems and decommissioning savings (elimination of licence and support costs for current applications). Overall, the Project is forecast to realise $511.1 million of benefits by FY29, which is a $196.4 million favourable variance to the August 2020 Business Case. A summary of these benefits has been provided in Table 13. This has primarily been driven by additional FTE reductions and productivity gains with further detail provided in Appendix A: Benefits by release.

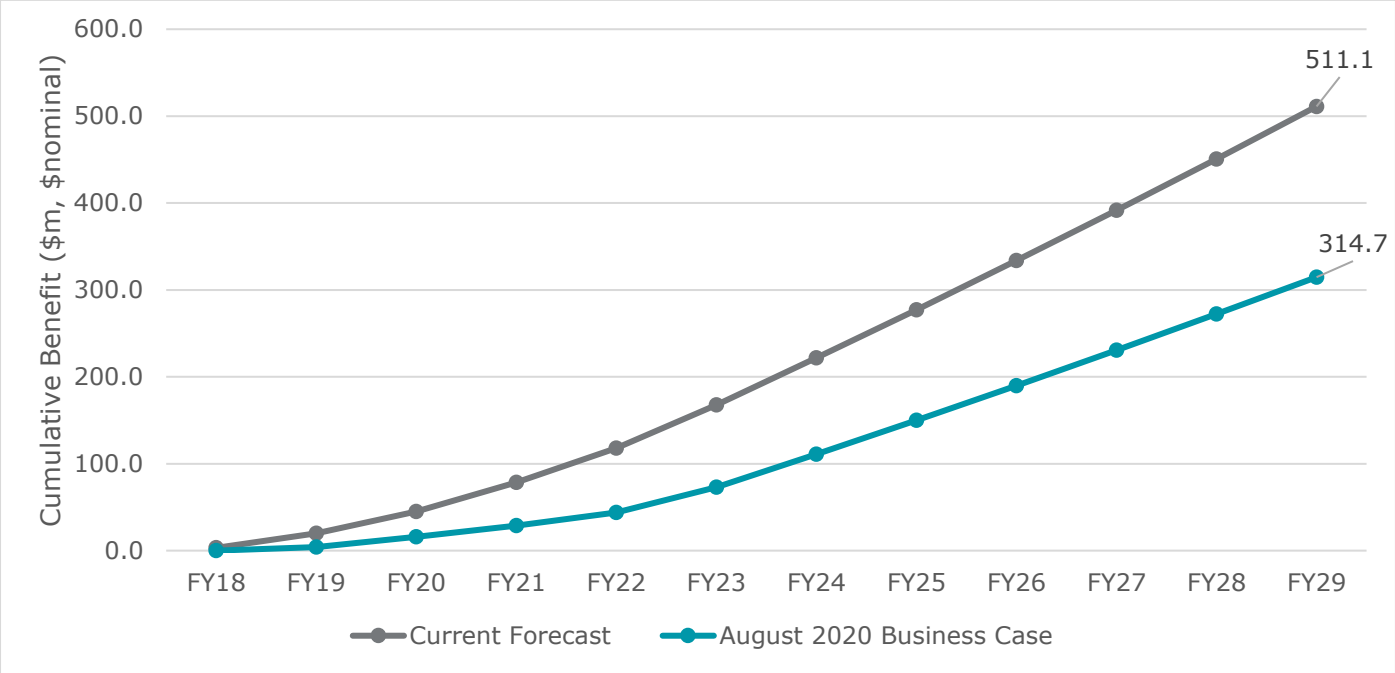
Additionally, the Project has realised benefits at a faster rate compared to the August 2020 Business Case, primarily driven by a faster and more widespread uptake of new platforms from frontline staff. It is forecast that the Project's original total benefits of $314.7 million will now be realised approximately four years earlier than originally budgeted within the August 2020 Business Case. This accelerated timing of benefits realisation is shown in Figure 4.

Table 13 – Project Benefits Budget versus Actual ($m, nominal)

Benefit by Release	2020 Business Case	Current Forecast* (FY18 – FY29)	Variance to 2020 Business Case
Release 1	133.2	303.2	170.0
Release 2	5.9	12.4	6.5
Release 3	87.8	99.0	11.2
Release 4	39.4	71.9	32.6
Project-wide	48.4	24.6	(23.8)
Total	**314.7**	**511.1**	**196.4**

*Represents the value of existing benefits to date and those forecast to FY29.

Figure 4 – Project Benefit Budget versus Actual by year ($m, nominal)



Endeavour has also sought to refine and validate benefits over the period from October 2020 to February 2021 through internal consultations with business SMEs. This will support the ongoing tracking and realisation of these benefits through ensuring ownership and understanding from both the appropriate business leaders and operational staff.

A list of qualitative benefits realised by the Project has also been documented.

4.4 CBA results

This section provides a quantitative assessment of the Project's costs and benefits using a CBA framework. Where possible, benefits and costs have been measured relative to those expected to occur under the 'base case' (i.e. a "stay in business" scenario characterised by baseline expenditure to maintain business operations and satisfy licence conditions and assuming minimal deviation in DNSP function or market requirements).

The approach for undertaking the CBA workstream involved:

- Defining a 'project case' and 'base case'
- Validating Project costs and the 'base case'
- Validating Endeavour's assessment of benefits arising from or enabled by SAP, Click, Kronos and related functionality deployed through Optimus
- Calculating results (NPV, BCR) and undertaking sensitivity analysis.

The CBA has been developed with consideration to the most recent guidelines for undertaking CBA in New South Wales, including:

- NSW Government Guide to Cost-Benefit Analysis (TPP 17-03)
- AER, Cost benefit analysis guidelines
- Department of the Prime Minister and Cabinet, Guidance note on cost-benefit analysis.

To provide a true analysis of the entire the Project as well recognising the interlinked nature of each Release, Release 4 forecasts have been included in the analysis.

4.4.1 CBA assumptions

Table 14 outlines the assumptions for the CBA that was undertaken.

Table 14 – CBA Assumption Inputs

Parameter	Input
Period of analysis	FY18-FY29
Base year	FY22
Discount Rate	6.54% (FY18 AER Rate of Return)
Sensitivities	• 3%, 10% and 4.83% (FY21 AER Rate of Return) • Costs +/- 20% • Benefits +/- 20% • 'Worst Case' Costs +20% and Benefits -20% • Contingency not required ($31.3m in FY22).

4.4.2 Base case

The 'base case' assumes a "stay in business" scenario characterised by baseline expenditure to maintain business operations (e.g. stabilise legacy ICT assets) and satisfy licence conditions. The base case is characterised by applications approaching end of life, having been built over different points of time and increasingly not fit for purpose. Assets are no longer cost effective or supportive of the requirements of operating in an increasingly decentralised, decarbonised and technology driven energy network. Expenditures under this scenario are insufficient to create a foundation that allows a response to changing market conditions. This results in significant financial and operational exposures where shifts in the market do occur, posing a risk to network security. The deficiencies in ICT functionality assumed under the 'base case' is most clearly demonstrated when compared against included in the 'project case' definition.

The base case has been defined as the following:

> The Project is not implemented therefore a "stay in business" scenario is assumed where legacy applications such as Banner, MBS and Ellipse remain. "Stay in business" is an uplift on a "do-nothing" scenario with investment required to stabilise existing legacy ICT applications to a level that allows Endeavour to maintain operations. Compared to the 'project case' this would significantly increase business continuity risk over time as a result of legacy applications being out of vendor support.

4.4.3 Project case

The 'project case' represents the large-scale business transformation Endeavour embarked on in 2018 to respond to rapid changes in the industry, customer preferences and to future-proof the business.

The 'project case' has been defined as the following:

> The Project is a multi-year project of replacements and enhancements. It contains a suite of modules, with specific capabilities that support the Strategic Plan and Technology Strategy. The systems implemented under the Optimus program are primarily SAP systems that focus internally on building a platform for the business to expand upon e.g. SuccessFactors, SAP, Click, Kronos, Assets and Works Management (EAM), Environment Health and Safety, Finance, Procurement and Logistics, and Industry Specific-Solution for Utilities (IS-U).

4.4.4 Results

The results of the CBA are summarised in Table 15. Analysis shows that quantified benefits realised exceed the expected costs across a 12-year time horizon (FY18-FY29), with a NPV of $108.2 million and a BCR of 1.52.

This demonstrates that despite the increase in Project budget from $189.3 million to $349.7 million, the functionality delivered has positively benefited Endeavour's customers through improved services and lower costs.

Table 15 – Overall results for 'project case', NPV incremental to 'base case' (PV, $m, 2022)

Item	Total (FY18-FY29)
Total benefits	315.7
Total costs	207.5
Net Present Value	108.2
Benefit Cost Ratio	1.52

Source: Deloitte (2022)

4.4.5 Sensitivity analysis

Given that the assumptions and parameters underpinning this CBA are subject to change and involve forecasts, sensitivity analysis has been undertaken to investigate the impacts of these potential changes on the conclusions drawn from the analysis. CBA results with applied sensitivity analysis are shown in Table 16.

The sensitivity analysis considers potential changes in various cost and benefit parameters, as well as the discount rate applied, and is performed at defined upper and lower bounds to assess the impact on the NPV of each scenario.

Table 16 – NPV sensitivity analysis for 'project case' (PV, $m, 2022)

Item	Total (FY18-FY29)
Central Case – 6.54% discount rate	108.2
3% discount rate	170.9
10% discount rate	65.5
4.83% discount rate	135.6
Contingency - not required ($31.3m in FY22)	131.0
Costs +20%	97.8
Costs -20%	118.6

Item	Total (FY18-FY29)
Benefits +20%	158.5
Benefits -20%	57.9
Worst Case (Costs +20% and Benefits -20%)	47.5

Source: Deloitte (2022)

4.5 Linkages to forward work programs and projects

Following the design and build of Release 3, Endeavour sought approval for $51 million of additional funding for Release 4 to complete the Project and bringing total Project costs to $349.7 million. Release 4 is anticipated to go-live in July 2022 and will conclude the most extensive ICT infrastructure investment in Endeavour's history. This additional funding will enable future optionality of technology services to align with changing enterprise architecture and business needs. Upon completion, the Project will deliver a flexible and scalable technology platform to support future transformation and new business requirements The platform will facilitate ongoing innovation and efficiency through:

- Integration of new energy technologies
- Design and execution of new business models
- Operations automation.

5 Business actions in response to strategic review in September 2021

In September 2021, Endeavour engaged Deloitte to review the status of the Project and identify actions that could be taken in order to strengthen the evidence base for the Project and ensure it clearly identified customer and business benefits.

An action plan was prepared by Endeavour in response to Deloitte's recommendations. As of June 2022, Endeavour has made progress to action all recommendations. Progress has been documented in Table 17.

Table 17 - Recommended Actions and Progress Update

Recommended Actions	Progress as at June 2022
1. Stakeholder engagement – Demonstrate direct customer benefits	
1.1.1 Customer engagement plan - Prepare a customer engagement plan on business transformation and map back activities, feedback and how feedback was considered in decision-making.	Completed. Engagement narrative presented to the Regulatory Reference Group (RRG) in February 2022, including examination of key drivers and building blocks. Customer and stakeholder engagement sessions will be used to validate the Project narrative.
1.1.2 Customer impact analysis - Analysis of costs and customer impacts on a deeper level including evidence of customer engagements and bill impacts.	Completed. Cost impacts reported to the Board Regulatory Committee on 27 September 2021.
1.2.1 Refine and test strategic narrative with internal stakeholders.	Completed. Strategic narrative presented to RRG in February 2022.
1.2.2 Initiate early narrative based engagement with AER and external stakeholders on the ICT Transformation using the strategic narrative as discussion piece.	On track. Customer and stakeholder engagement sessions commenced February 2022. This will continue to be delivered including the RRG (which includes AER representation) and engagement with the AER under the Better Resets Program.

2. Future roadmap – Strategic alignment with Corporate Strategy/Future State

2.1.1 Demonstrate alignment and linkage of ICT investment with recent developments that can strengthen the prudency argument including AER's VADER methodology, the AEMC's access, pricing and incentive arrangements for distributed energy resources rule change and network security and resilience obligations under SOCI.	On track. Alignment demonstrated in the non-system capex narrative. This will continue to be reinforced in the ICT Strategy which will be drafted by mid-2022. ICT Plan was completed in March 2022.
2.2.1 Develop ICT Future Roadmap Narrative and Investment Plan. Subsequent expansions of the ICT system should address the need for greater data acquisition and visibility of behind the meter electricity generation. ICT expenditure on data acquisition and analytics capacity allows assessment of and reaction to unforeseen changes in a prudent and efficient manner. Cloud hosted services shift capex to opex, increase both business and network monitoring efficiency and reduce exposure to changes in ICT requirements. This is a necessary shift in an industry becoming more dependent on data and whole of business integration.	On track. ICT Plan was completed in March 2022, including the ICT Future Roadmap.

3. Benefits register – Unrealised benefits

3.1.1 Tracking and documenting benefits - Endeavour should continue to track realised and unrealised benefits as they are likely to change in response to exogenous factors such as changes in the NER or the regulatory framework more specifically.	On track. Benefits are being updated on a monthly basis in addition to quarterly updates being provided to the ELT. A qualitative benefits update to the Board is to be completed, with a recurring annual update to be provided to the Board.
3.2.1 Tracking and documenting benefits - Commence tracking of unrealised benefits.	On track. Benefits tracking has commenced. The network strategy is still being delivered and it is too soon to understand the benefits that will be realised from that strategy. Benefits being investigated for measurement include DER and technology.

4. Business case documentation - Changes in Project budget

4.1.1 Market testing - Mapping of market testing against investments and procurement policies. **4.1.2 Increased granularity of ICT Project functionality and options analysis -** demonstrating the alternative options that Endeavour considered when implementing the Project, including the options considered in the revised business cases and budget changes.	Completed in February 2022. Work was slightly delayed as approach to the market test register was revised from sourcing data from Board decisions to reconciliation of contracted amounts to ICT spend. Gaps identified from the reconciliation exercise are currently being actioned.
4.2.1 Risk register - Map changes in costs back to risk register where applicable to demonstrate that any changes in the investment Project can be traced back to demonstrable risk mitigation activities.	On track. A detailed risk register was established on Project commencement and key risks were reported to the Steering Committee and mitigated by the Project team. A risk summary paper to map cost changes back to risk register is scheduled to occur after Release 4 go-live.
4.3.1 Evidence of legacy systems - This need should be emphasised by highlighting the state of legacy systems and the critical investment required to support business continuity in the short term. Further evidence of the status of the systems, including age, functionality, processes and ongoing cost requirements will support both the justification of the Project and the stepwise increasing expenditure requirements for the Project. Linkages between the Project systems implemented, and the legacy systems defects should be made clear.	Completed. A paper on evidence of legacy systems has been provided for internal review.
4**.3.2 Pindara reviews -** Highlight actions taken because of the ongoing Pindara reviews and how these actions have delivered efficiencies in the narrative.	Completed. It is deemed that business cases and Board papers provided sufficient documentation that scope and cost changes were made in consideration of the Pindara recommendations.

5. Reasonableness of investment - Value of investment exceeds the value potentially deemed prudent by the AER

5.1.1 Benchmarking - Update benchmarking study as required and consider including a DER component.	Completed. Benchmarking study last updated in August 2021. Future update to benchmarking to be completed once ICT systems stabilise and reach maturity.
5.2.1 Narrative positioning for cost uptick - Collate evidence that supports the narrative to demonstrate the original the Project budget was required for business continuity and short-term	Completed. Addressed as part of the non-system capex narrative to RRG in February 2022. The Technology Strategy will not cover the Project cost increases, however the ICT Strategy to be prepared for the AER will include this.

upgrades. Increase cost uptick should be more closely aligned to future state efficiencies.	
5.2.2 Post implementation report for completed ICT projects as per AER guidelines including: • Project status against business case delivery timeframe/scope • Actual cost vs business case cost • Actual timeframe to complete project vs forecast timeframe • Actual achieved benefit to the forecast benefit in business case • Material variation explanation in costs, delivery timeframe and benefits realised • Lessons learned.	On track. Currently being undertaken for Releases 1-3 with findings to be presented to customers and stakeholders, including the AER.

Source: Endeavour (2022)

6 Lessons learned

Following Release 2, Endeavour undertook an evaluation process to determine the lessons learned and the opportunities for improvement. This occurred through the use of online surveys, stakeholder consultations and review of past commentary made through the process of business case development. These activities were designed to understand the impacts of the Project to each department during the implementation phase and post go-live.

The PIR process has also provided an opportunity to further identify lessons learned and opportunities for improvement following Release 3. These can then be applied to both Release 4 and comparable business projects.

Areas of opportunity and critical learning lessons identified by both Endeavour and Deloitte are summarised in Table 18 and detailed in Section 6.2.

Table 18 – Project Lessons Learned

Area of Assessment	Lessons Learned
Scope management	• Ensure the scope reflects a holistic architecture across shared systems and Releases, with common objects understood and long-term impacts considered • Ensure the scope includes process improvements in addition to potential system and data improvements.
Governance	• An active leader and strong sponsor engagement is needed to ensure the Project execution is efficient and aligns with proposed goals • A refined and defined governance model is important to ensure increased and more effective engagement of key internal stakeholders throughout the Project lifecycle.
Communications and stakeholder management	• Clear communication is important through deep engagement with key stakeholder through governance forums • Business engagement and communication should be improved through scope endorsement and Project Release support • Engagement for external stakeholders should be considered with the same rigour as internal stakeholders.
Procurement, contract and vendor management	• Ensure the Project scope is well-defined and that vendors are chosen based on knowledge, skill and experience as well as a proven track-record in working collaboratively with internal and external teams • Ensure the internal and partner vendor team is tailored for each Release.
Project management and project controls	• Sufficient internal resourcing is needed to successfully deliver multiple concurrent Project Releases • Promoting a collaborative partnership approach to delivery is important for its success and should be driven by a cohesive and consistent leadership team.
Project team and resource management	• Ensure business impact and team responsibility is communicated clearly and understood by the Project team to ensure successful delivery • Establish a collaborative environment across the business to ensure the right people are engaged for the entire Project life.

Area of Assessment	Lessons Learned
Change management	• Early engagement with organisational teams is required to articulate the benefits of Project deliverables and outcomes, particularly for long-term major transformations • Organisational leaders need to drive the change management to promote a buy-in from all employees at varying levels in the organisation. • Training should be conducted using real life scenarios (sandpit environment) and be broken up into smaller segments, prioritising use of demonstrations, training environment and animations • Business context should be intertwined with training modules • Communication of a Trailblazer community and senior business sponsorship should be embedded in training and change management.
Implementation approach	• Ensure dependencies across Releases are being monitored and mitigation plans are being developed in case of delays or common data issues e.g. decoupling or enabling the Releases to co-exist on separate build paths • Ensure there are a variety of testers with training and testing communications to be made • Provide sufficient notice of the implementation and testing schedule in addition to a roster of participants • Provide clearer understanding of roles and responsibilities across different implementation phases through providing walkthroughs, task summaries and milestone dates.

6.1 Methodology applied

Following the conclusion of Release 2 in August 2020, Endeavour sought to identify the lessons learned and opportunities for future improvements for subsequent release. Figure 5 and Table 19 detail the timing and methodology of this process.

Figure 5 - Lessons Learned Timeline for Release 2

Source: Endeavour (2020)

Table 19 - Lessons Learned Assessment Process

Process Stage	Description
What	54 people across the organisation attended and participated in the virtual Lessons Learned workshops and 49 people responded to the survey, in order to reflect on all aspects of Release 2 and were asked: what we did well, what could be improved and what actions should we take to the next project or phase. A survey was also released to the organisation in order to gain additional feedback and lessons learned.
Who	Project team members, business representatives and other key stakeholders, nominated Trailblazers and Leaders were invited to attend and contribute to the Lessons Learned workshops and complete the survey.
Activity	During the workshops participants were asked to identify what went well and what could be improved across 6 key focus areas (Project Management, Change, Communications and Training, Testing UAT, Deployment and Go-live, Hypercare and Support, Other). Then, as a group, the actions and recommendations were discussed and recorded. The survey followed a similar approach, asking respondents to write down what worked well and what could be improved across the key areas, as well as providing an opportunity to note down any other feedback or suggestions.
Result	The information captured as part of the workshops and survey, was analysed and was shared with key stakeholders to review and plan actions to take forward into Release 3.

Source: Endeavour (2020)

As part of this PIR, consultations were undertaken with key internal stakeholders to support the lessons learned from Endeavour's internal processes and to update these following the completion of Release 3.

From this process, several areas were identified for assessment, as detailed in Section 6.2.

6.2 Areas of Assessment

6.2.1 Scope management

Prior to Release 3, the technical scope for SuccessFactors and ERP/EAM was broad, difficult to deliver and did not integrate with the architecture of implementing IS-U in Release 4.

The Project was reset for Release 3 refocusing, streamlining and validating the Release 3 scope with business stakeholders, the software vendor, SAP, and key Release 3 vendors.

Accounts Payable was a part of the Finance business unit that was incorporated within the Release 3 module scope as it went live. The process improvements required for Accounts Payable systems were unforeseen prior to Release 3 and resulted in a more time-consuming integration process than originally anticipated.

The key lessons learned across Releases 1-3 include:

- Ensure the scope reflects a holistic architecture across shared systems and Releases, with common objects understood and long-term impacts considered
- Ensure the scope includes process improvements in addition to potential system and data improvements.

6.2.2 Governance

Prior to Release 3, appropriate governance mechanisms and business readiness roles were established but were not optimised for successful Project delivery due to:

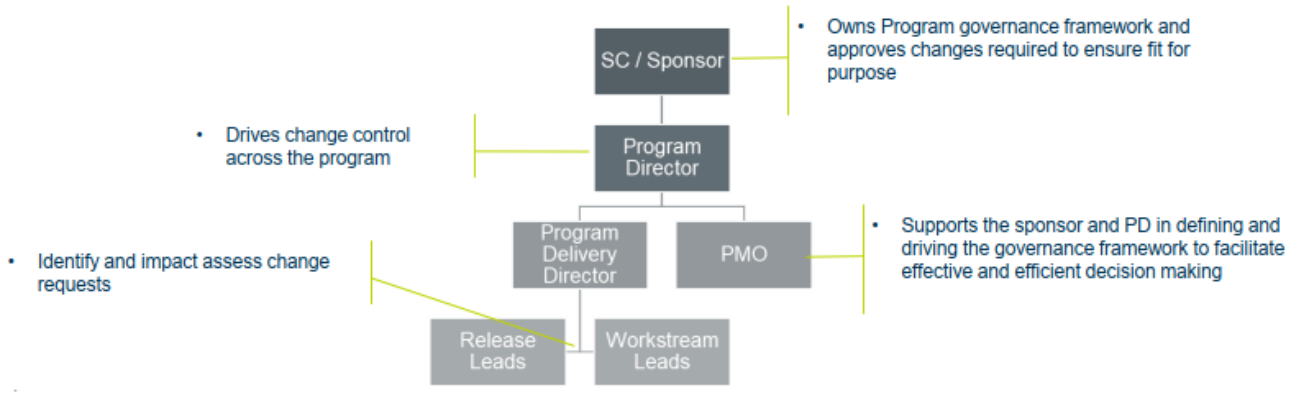
- The need for stronger sponsor engagement and senior leadership buy-in, to ensure the Project remained focused on initial goals
- The complexity of multiple Releases
- A lack of clarity around the roles and responsibilities of the internal team and external team.

Changes were made prior to Release 3 to establish a more robust governance structure, as shown in Figure 6.

Release 3 was chaired by the CFO and supported by GM Operations and Project Director. This structure is still being applied as of June 2022.

The modified governance structure resulted in immediate productivity improvements. The new governance structure focused on the team's priorities being aligned to business interests, a larger PMO structure established to supplement capability gaps in vendors and placement of testing managers and quality assurance roles. Feedback from internal stakeholders is that this approach has resulted in improved governance for Release 3, compared to earlier releases.

Figure 6 - Governance Structure



Source: Endeavour (2020)

The key lessons learned across Releases 1-3 are that:

- An active leader and strong sponsor engagement is needed to ensure the Project execution is efficient and aligns with proposed goals
- A refined and defined governance model is important to ensure increased and more effective engagement of key internal stakeholders throughout the Project lifecycle.

6.2.3 Communications and stakeholder management

Prior to Release 3, Endeavour identified a range of effective communication strategies to implement. These included:

- Quick reference guides, simulations and animations for key processes

- Trailblazers were nominated across the organisation to upskill in advance on systems specific to their area to provide internal demonstrations before go-live and ongoing support post go-live
- Improved communication and involvement of business representatives (SMEs/GPOs/end users) across Test, UAT and go-live support, as well as for frontline staff (and accommodating different working patterns and arrangements).

For Release 3, every Endeavour employee was impacted, with 1,351 change impacts identified. To support the business, comprehensive engagement and communication and activities were undertaken as part of delivery.

Improvements, however, could be made, particularly in considering the impacts of changing processes on external stakeholders.

The key lessons learned across Releases 1-3 are that:

- Clear communication is important through deep engagement with key stakeholders through governance forums
- Business engagement and communication should be improved through scope endorsement and Project Release support
- Engagement for external stakeholders should be considered with the same rigour as internal stakeholders.

6.2.4 Procurement, contract and vendor management

During the 2019 Project pause, the vendors engaged on contracts for Finance, HR/Payroll and GRC (Security) were replaced.

Gaps in integrated design had to be closed, resulting in delayed delivery against original timeline due to transition to new vendors. In practice, vendor transition had some challenges including vendors' preferences regarding Project delivery relative to a partnership model. Despite this, Endeavour was able to see more streamlined delivery of Release 3 upon vendor transition.

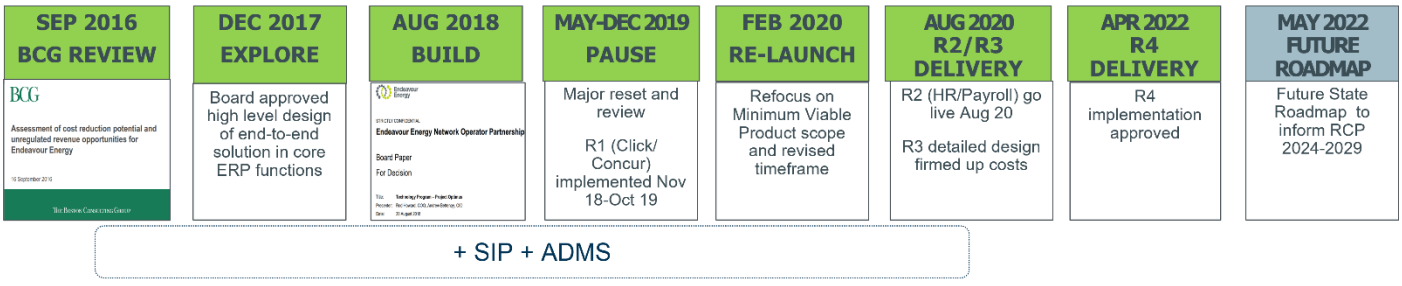
The key learnings gained from Releases 1-3 include:

- Ensure the Project scope is well-defined and that vendors are chosen based on knowledge, skill and experience as well as a proven track-record in working collaboratively with internal and external teams
- Ensure the internal and partner vendor team is tailored for each Release.

6.2.5 Project management and project controls

Endeavour had run concurrent Releases, particularly with Release 2 and 3. This is seen in Figure 7 below.

Figure 7 - Project Roadmap



Source: Endeavour (2020)

Running Release 2 and 3 concurrently was challenging given Endeavour:

- Did not have experience in delivering overlapping Releases

- Did not document the preconditions required
- Did not having a clear resourcing schedule with backfilling employees.

These preconditions need to be satisfied for future business transformation projects. Internal feedback indicated that there also needed to be greater level of collaboration between the vendor and the business from project design through to implementation and ongoing operation.

The key lessons learned are that:

- Sufficient internal resourcing is needed to successfully deliver multiple concurrent Project Releases
- Promoting a collaborative partnership approach to delivery is important for its success and should be driven by a cohesive and consistent leadership team.

6.2.6 Project team and resource management

Delays in Release 3 occurred in the areas of Finance, EAM and end to end integration. Difficulties encountered included:

- Finance resourcing gaps with Endeavour and prime partner teams
- Endeavour's ability to articulate end state business requirements
- Teaming under COVID-19 pandemic given the complexity of Release 3, coupled with a team that had not had the opportunity to work together face-to-face and bond.

There were also resource challenges given the need to both fill Project teams for Release 3 and undertake existing business-as-usual activities.

These challenges were opportunities for learning, where improvements were made including by clarifying decision-points and improving communication between the ELT and project teams. This was reflected in the planned and actual Release 3 go-live date both occurring in October 2021.

The key lessons learned for project team and resource management going forward at to:

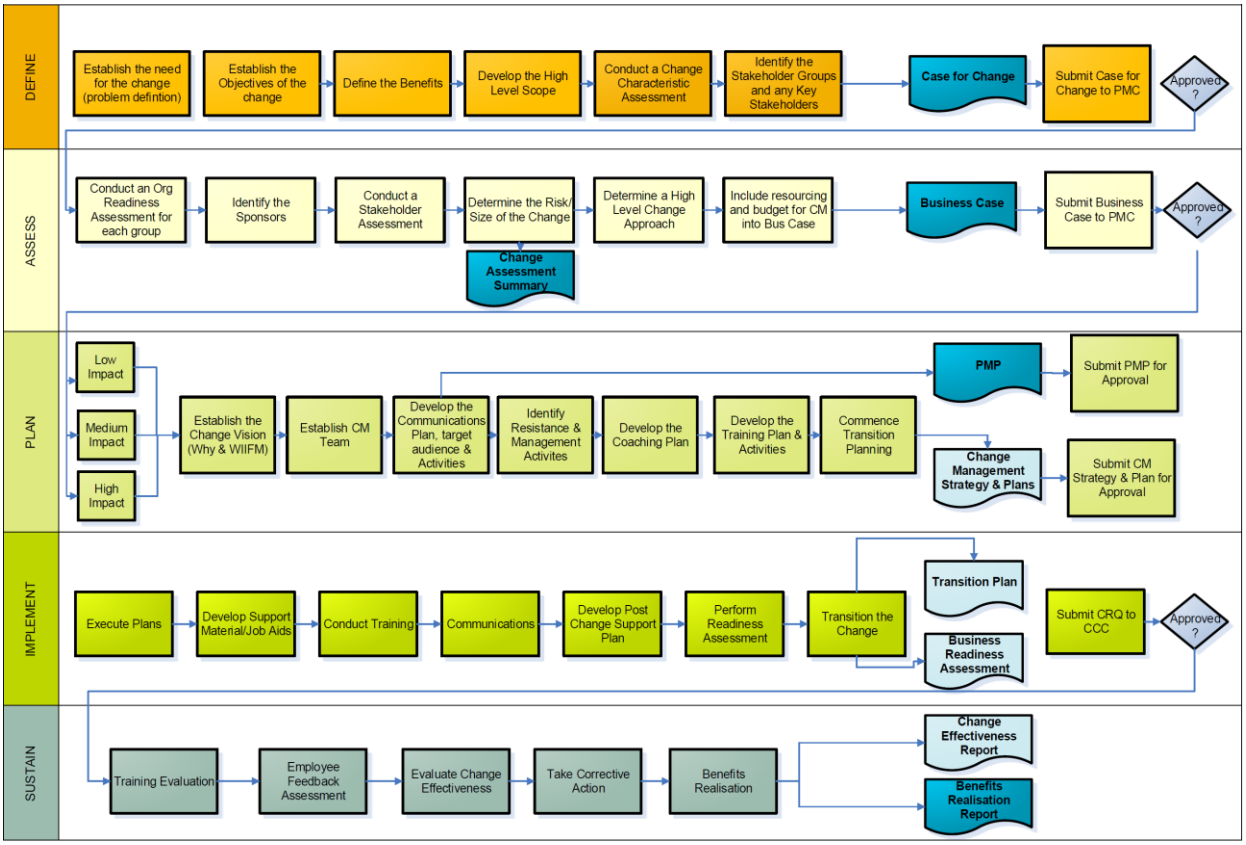
- Ensure business impact and team responsibility is communicated clearly and understood by the Project team to ensure successful delivery
- Establish a collaborative environment across the business to ensure the right people are engaged for the entire Project life.

6.2.7 Change management

At Project commencement, Endeavour's organisation-wide change management framework was utilised. However, it lacked the Project-specific detail required to effectively manage ICT specific issues. These deficiencies were addressed during the Project pause through the creation of an ICT Change Management Framework.

This ICT-specific approach employed a five-phased framework which illustrates a flow chart of each phase's key activities to ensure the correct process has been undertaken. This framework has been provided in Figure 8.

Figure 8 – ICT Change Management Framework



Source: Endeavour (2022)

For each of the four Project Releases, the change management impacts are summarised below in Table 20.

Table 20 - Change management and impact for each Project Release

Release	Change management and impact on the business
Release 1	Impacted the entire business as employees were learning LMS.
Release 2	Bigger impact compared to Release 1 due to the people focused modules of HR and Payroll. A larger focus was on the field team due to COVID-19 shifting training to a virtual environment and to uplift the Trailblazer community to support local groups.
Release 3	Broad impact on ways of working across the organisation (i.e. more role-based rather than generic learning).
Release 4	Smaller business group that is impacted but deeper impact within the business group.

Training was conducted to assist with change management for each Release. Training needed to transition to an online environment given the challenges of the COVID-19 pandemic. This proved to be a challenge for Endeavour for Release 2, as it did not allocate adequate time for users to learn the new technology in a sandpit environment. As a result, this led to adoption and uptake issues upon deployment.

By Release 3, the business had successfully adapted to online training. However, Release 3 revealed its own unique challenges given the broad impact on ways of working and how employees performed their tasks. Training material often failed to integrate the specific business context required to relate each employee's previous process to the new system's functionality.

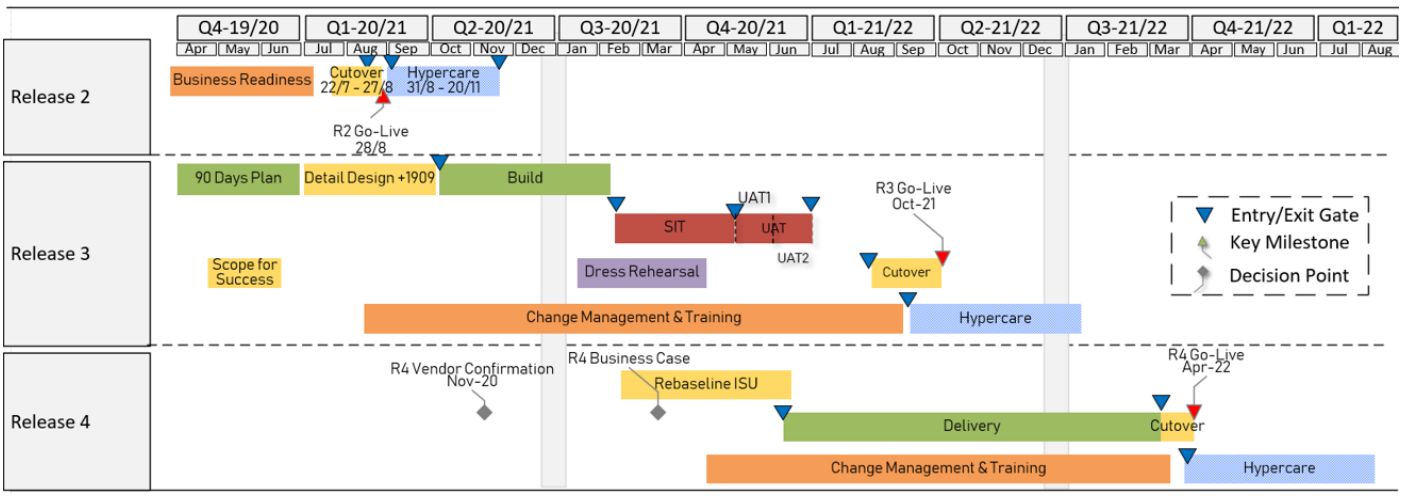
Key lessons learned from Releases 1-3 on change management and training include:

- Early engagement with organisational teams is required to articulate the benefits of Project deliverables and outcomes, particularly for long-term major transformations
- Organisational leaders need to drive the change management to promote a buy-in from all employees at varying levels in the organisation.
- Training should be conducted using real life scenarios (sandpit environment) and be broken up into smaller segments, prioritising use of demonstrations, training environment and animations
- Business context should be clear through training modules
- Communication of a Trailblazer community and senior business sponsorship should be embedded in training and change management.

6.2.8 Implementation approach and methodology

The Project employed different implementation approaches for each Release to reflect the depth and breadth of scope as shown in Figure 9. Implementation improved over each Release, with Release 3 employing the most robust implementation approach given its considerable scope. This was to validate the build and to provide end-users the opportunity to flag any issues that can be rectified before cutover and go-live.

Figure 9 - Release 2-4 Timelines



Source: Endeavour (2020)

Feedback from internal stakeholders indicate the following key lessons learned from Releases 1-3, which are being implemented for Release 4:

- Ensure dependencies across Releases are being monitored and mitigation plans are being developed in case of delays to Release 3 or common data issues e.g. decoupling or enabling the Releases to co-exist on separate build paths
- Ensure there are a variety of testers with training and testing communications to be made
- Provide sufficient notice of the implementation and testing schedule in addition to a roster of participants
- Provide clearer understanding of roles and responsibilities across different implementation phases through providing walkthroughs, task summaries and milestone dates.

7 Other opportunities and next steps

Chapter 6 identified the lessons learned from Releases 1-3. It is understood the business is aware of these and intends to implement the lessons learned in Release 4 and in future projects. It is recommended that a further review occurs following the implementation of Release 4 to determine the extent to which Endeavour successfully implemented the lessons from Release 1-3.

The sections below outline the importance of communicating the findings of this PIR to both the AER and customers, areas where new benefits could be identified from Release 4 including by capturing improvements in network performance.

7.1 Identification of new benefits

Through the PIR consultation process, key business leads identified areas of realised benefit following Release 3, which had not previously been captured. These have been summarised in Table 21 below.

Endeavour should seek to validate and document these benefits, including quantification where possible. As Release 4 shifts the Project's focus to a customer-focused solution, further analysis could also be undertaken to identify how the functionalities delivered in Releases 1-3 integrate with the network ICT environment and how they have assisted in delivering improvements to Endeavour's network performance.

Table 21 – Additional Areas of Benefit

Category	Benefit	Description
Learning and Development	Increased uptake of learning and development	The online delivery capability and its self-serve nature, increases employee uptake of learning and development modules.
	Decreased travel time	The online delivery capability reduces travel time as participants are no longer required to travel to a physical location for course attendance.
	Availability to revisit and repeat modules	Employees are able to access modules at any time which improves accessibility, amenity and productivity.
Finance	Reduced volume of manual processing	The volume of manual journals has decreased by approximately 23% since the implementation of the Finance ERP.
Data	Improved efficiency through a single data repository	The consolidation of data from multiple legacy systems into a single ecosystem with integrated modules allows for a more integrated view of data and efficient completion of tasks.
	Improved decision making through data quality and availability	Improved quality and availability of data leading to more valuable insights and empowering employees to make better business decisions, e.g. optimising asset replacement schedule and investment plan.

The above list is only a preliminary view of potential unidentified benefits from the Project. Further stakeholder consultation is required to validate that these benefits have been realised. Additionally, ongoing stakeholder consultations will be important to identify any new benefits realised from Release 4.

7.2 Linking the Project to network performance

For Releases 1-3, the benefits attributed have primarily related to the improvement of Endeavour's non-network internal processes. As Release 4 shifts the Project's focus to a customer-focused solution, further analysis could be undertaken to attribute how the functionalities delivered in Releases 1-3 integrate with the network ICT environment and how it has assisted in delivering improvements to Endeavour's network performance. This link will further strengthen the prudency assessment through stronger alignment to AER's capex objectives outlined in Section 2.1.

Appendix A: Benefits by release

Release 1: Click and Learning Management System (LMS) related benefits

Deployment of Click through Release 1 has enabled Field Operations to achieve large productivity gains through improved scheduling and management of the field force.

The August 2020 business case forecast 89 FTE headcount reductions, however an additional 49 FTEs have been reduced to date resulting in an annual benefit of $23.6 million. This is a $10.2 million higher annual FTE reduction benefit compared to the 2020 business case. These FTE reductions have occurred across multiple areas of the business including frontline staff, supervisory staff, administration and system operations.

An additional annual productivity benefit of $4.9 million has been realised which was not originally forecast within the August 2020 business case. This is primarily driven by enabling insourcing of previously outsourced activities. Surplus labour has been better utilised by insourcing work previously performed by external contractors or suppliers, thereby reducing external contract spend by $3.3 million annually.

Concur and LMS have also both realised minor additional benefits originally not forecast through enhanced functionality and improved efficiency, which is partially offset by minor reductions in avoided technology expenses such as vendor software renewals.

A summary of Release 1 benefits in comparison to the August 2020 business case is provided in Table 22.

Table 22 - Release 1: Click, Concur, LMS Benefits (FY18 – FY29, $m, nominal)

Benefit Category	August 2020 Business Case	Actual / Forecast*	Variance
FTE Reductions	132.4	246.2	113.8
Productivity	0.0	57.0	57.0
Technology Expenses	0.8	0.0	(0.7)
Total	**133.2**	**303.2**	**170.0**

Source: Endeavour (2021) *Represents the value of existing benefits to date and those forecast to FY29.

Release 2: SuccessFactors and Kronos related benefits

Release 2 focussed on core HR systems relating to recruitment, onboarding, payroll processing and personal information management, all provided through SAP SuccessFactors, as well as time and attendance management through Kronos.

The deployment of these modules has supported a higher quality of HR service provision in recruitment, onboarding and performance management in addition to productivity gains through automation of manual processes.

This has resulted in a modestly higher than forecast benefit as summarised in Table 23.

Table 23 - Release 2: Kronos, SuccessFactors Benefits (FY18 – FY29, $m, nominal)

Benefit Category	August 2020 Business Case	Actual / Forecast*	Variance

FTE Reductions	3.7	7.7	4.0
Productivity	0.0	3.6	3.6
Technology Expenses	2.2	1.1	(1.2)
Total	**5.9**	**12.4**	**6.5**

Source: Endeavour (2021) *Represent the value of existing benefits to date and those forecast to FY29.

Release 3: EAM, ERP, SCM and EHS related benefits

The extensive scope of Release 3 is forecast to deliver benefits across Endeavour's asset management, finance, supply chain and health and safety functions.

Given Release 3 went live in October 2021, Endeavour will continue to periodically monitor the benefits realised against the August 2020 Business Case's original forecast.

Endeavour is currently forecasting a $11.2 million favourable variance to the original forecast, primarily driven by additional benefits for risk avoidance from additional safety benefits as a result of EHS. It is anticipated that improved near miss reporting facilitated via Click will lead to better safety outcomes.

This is partially offset by a reduction in other financial benefits where maintenance optimisations of various complementary systems such as vegetation management and major incident avoidance have been difficult to quantify, particularly when trying to compare the outcome of decisions prior to the technology investment to decisions after the Project was implemented.

Table 24 - Release 3: EAM, ERP, SCM, EHS Benefits (FY18 – FY29, $m, nominal)

Benefit Category	August 2020 Business Case	Actual / Forecast*	Variance
FTE Reductions	0.0	18.4	18.4
Other Financial	58.1	11.6	(46.5)
Productivity	6.1	8.4	2.4
Risk Avoidance	5.0	49.2	44.2
Technology Expenses	18.6	11.3	(7.3)
Total	**87.8**	**99.0**	**11.2**

Source: Endeavour (2021) *These represent the value of existing benefits to date and those forecast to FY29.

Release 4: EAM, ERP, SCM and EHS related benefits

Deployment of SAP's Industry-Specific Solution for the Utilities Industry (ISU) module as Release 4 provides Endeavour with more effective and integrated tools to support our 'meter to cash' processes, across metering, B2B, Transfers, life support customer management, and billing and finance.

Endeavour is currently forecasting a 37 FTE headcount reduction through the automation of processes and removal of interfaces between multiple current systems. This will be continued to be monitored following Release 4's scheduled go-live in July 2022.

Table 25 - Release 4: ISU Benefits (FY18 – FY29, $m, nominal)

Benefit Category	August 2020 Business Case	Actual / Forecast*	Variance
FTE Reductions	16.9	40.5	23.6
Technology Expenses	22.5	31.4	9.0
Total	**39.4**	**71.9**	**32.6**

Source: Endeavour (2021) *These represent the value of existing benefits to date and those forecast to FY29.

Project Wide Benefits

In addition to the benefits categorised by release, Endeavour has identified other benefits attributable to the broader outcomes of the Project. These benefits primarily relate to optimisation of corporate structure and individual roles following the completion of the Project.

Endeavour has reduced their forecast of FTE Headcount Reductions by 22, which offsets the favourable forecast FTE reduction forecast for Release 4. Additional technology savings were identified by calculating the reduction in computing hardware, software, mobile phones and printing per FTE. These benefits will be continued to monitored following the Project's completion and ongoing operation.

Table 26 – Project-Wide Benefits (FY18 – FY29, $m, nominal)

Benefit Category	August 2020 Business Case	Actual / Forecast*	Variance
FTE Reductions	48.4	18.2	(30.2)
Technology Expenses	0.0	6.4	6.4
Total	**48.4**	**24.6**	**(23.8)**

Source: Endeavour (2021) *These represent the value of existing benefits to date and those forecast to FY29.