UNIVERSITY of GLASGOW

JISC

espida Handbook

Expressing project costs and benefits in a systematic way for investment in information and IT

making it happen

espida

by getting real

Contents

Executive Summary

The rapid pace of change in Higher and Further Education means that decision-makers and funders are frequently required to evaluate project proposals that have serious implications for their institutions. There are never enough resources available to fund more than a small fraction of the proposals and decision-makers are keenly aware that the size of the resource pool is fixed and that every pound spent on infrastructure and administration is a pound not spent on 'primary production': learning, teaching and research.

A project proposal is an expression of a desire for resources in return for which the funder will receive certain, hopefully positive, outcomes. A good project proposal is therefore a communication between a proposer and funder and is composed of clearly defined costs and benefits. Business models must answer not only the question 'how much does it cost?', but also, 'why do we need this?' and 'why should we spend money on this, rather than on the primary business of the organisation?' And while accurate costs are vital to a good business case, these "why" questions demand very different answers.

The *espida* Approach is a tool that recasts the relationship between decision-maker and proposer as one of alignment and dialogue: the proposer can effectively communicate intangible outcomes, and the funder receives maximum benefit from investment decisions. The Approach encapsulates the process surrounding the allocation of resources and offers a consistent and effective approach that benefits all stakeholders in the process.

Through a well-developed process and use of structured Outcome Scorecards and Cost Templates, the *espida* Approach offers advantages to both decision-makers and project proposers in terms of understanding proposals, ensuring the decision-making process is transparent and based on all relevant information, and allows both sets of stakeholders to communicate effectively, ultimately benefiting the organisation.

The *espida* Approach certainly has direct applicability in Higher and Further Education, Funding Councils, the public sector and organisations that deal with a lot of information. The ability to give transparency in decision-making and furnish funders with clear, concise and germane information is becoming increasingly attractive as the need for accountability grows (both from the public and shareholders). At its most basic however, the Approach offers proposers an effective way of communicating intangible benefits and funders the information they require to make sound investment decisions.

1. What Problem is the *espida* Approach Addressing?

Seeking funding and making decisions about who should receive funding is an often arcane art in organisations where benefits are not generally measured by financial return, particularly in Higher and Further Education institutions. Pages of purple prose detailing exciting benefits jostle with each other, fighting for the right decision from senior management. These same managers try to understand the benefits that proposals have for the organisation, but must rely on often unrepresentative or non-existent financial indicators, the writing skills of the proposer and their own instinct to decide on which investments to make.

While this scenario takes an exaggerated view of the funding process within organisations, it is without doubt that intangible outcomes are very hard to communicate effectively, leading to incomplete information upon which to make investment decisions.

The *espida* Approach is a tool that recasts the relationship between decision-maker and proposer as one of alignment and dialogue: the proposer can effectively communicate intangible outcomes, and the funder receives maximum benefit from investment decisions. The Approach encapsulates the process surrounding the allocation of resources and offers a consistent and effective approach that benefits all stakeholders in the process.

The *espida* Approach allows:

decision-makers to

- make informed decisions on proposals that offer intangible returns,
- understand proposals for specialist undertakings,
- see the likelihood of positive and negative outcomes,
- measure the performance of the investment;

and **project proposers** to

- assess and align their proposal to meet the strategic agenda of the organisation,
- use the language of decision-makers to convey the value in their proposal,
- communicate intangible benefits effectively.

2. Background to the *espida* Approach

Within specific types of organisations, funding is being made available to undertake actions that will help preserve digital materials (Schweizerisches Bundesarchiv, TNA, NARA). Typically these are large-scale memory institutions with a remit to preserve particular types of information and the management teams in these organisations have been convinced that investing in such actions is of benefit to the organisations. Clearly, these organisations have an intimate understanding of the value of the particular types of information that they are charged with managing. However, how do staff within organisations whose primary business is not preservation begin to demonstrate value in digital objects? And even within organisations that may be classed as the 'pioneers in the field', activities must still vie with other services for funds: will solid funding for the activities last beyond the novelty period of 'Digital Preservation'?

A good business case is a communication between a proposer and funder and is composed of clearly defined costs and benefits. As there is already a large body of literature and research on the costs of digital preservation, the *espida* project has put the majority of its work into benefit articulation.[1] Costs for 'digital preservation' actions include the financial cost of the actions needed to a) put in place a system that can provide longevity for digital assets[2]; and, b) upgrade technology, run the service(s), train staff in new practices, and assess the processes over the long-term.[3] There are also various models available to aid in the creation of these costs.[4] However, the methods employed do not take into account the actual assets that need to be preserved (managed). The work has concentrated on cost models not business cases with the assumption, seemingly, that the assets **must** be preserved. Business models must answer not only the question 'how much does it cost?', but also, 'why do we need this?' and 'why should we spend money on this, rather than on the primary business of the organisation?' And while accurate costs are vital to a good business case, these "why" questions demand very different answers.

Strategic thinking is not driven by cost and financial issues alone. It is driven by vision and insight with organisations taking risks when investing in new ideas in order to develop. The *espida* project is seeking to ensure that where required, organisations recognise the value of their information assets and have the foresight to see that their persistence should be a matter of decision rather than technological determination. This requires an explicit recognition of the value of information assets and its relationship with the strategic plan[5]. The challenge is in expressing value in terms that senior managers understand. If digital assets can be shown to

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[1] Most work has looked at the elements of cost that must be accounted for (ERPANET 2003, Russell & Weinberger 2000; Hendley 1998). Work is being done in great detail at the Cornell Institute (see most recently Kenney 2005). Lavoie (2004) explores preservation as an economic activity and begins to look at making practices sustainable.

[2] The word 'system' does not necessarily mean one unified technological system for holding and managing the assets. Rather, it is taken to be the processes, actions **and** technological infrastructure(s) needed to be put in place.

[3] Oltmans has compared the cost implications of choosing one method of preservation over another (emulation and migration) and finds that the cost pattern differs. However, there is still a cost in the future, which must be taken into account. Erik Oltmans & Nanda Kol, 'A Comparison Between Migration and Emulation in Terms of Costs', *RLG DigiNews*, 9:2 April 15 2005 http://www.rlg.org/en/page.php?Page_ID=20571.

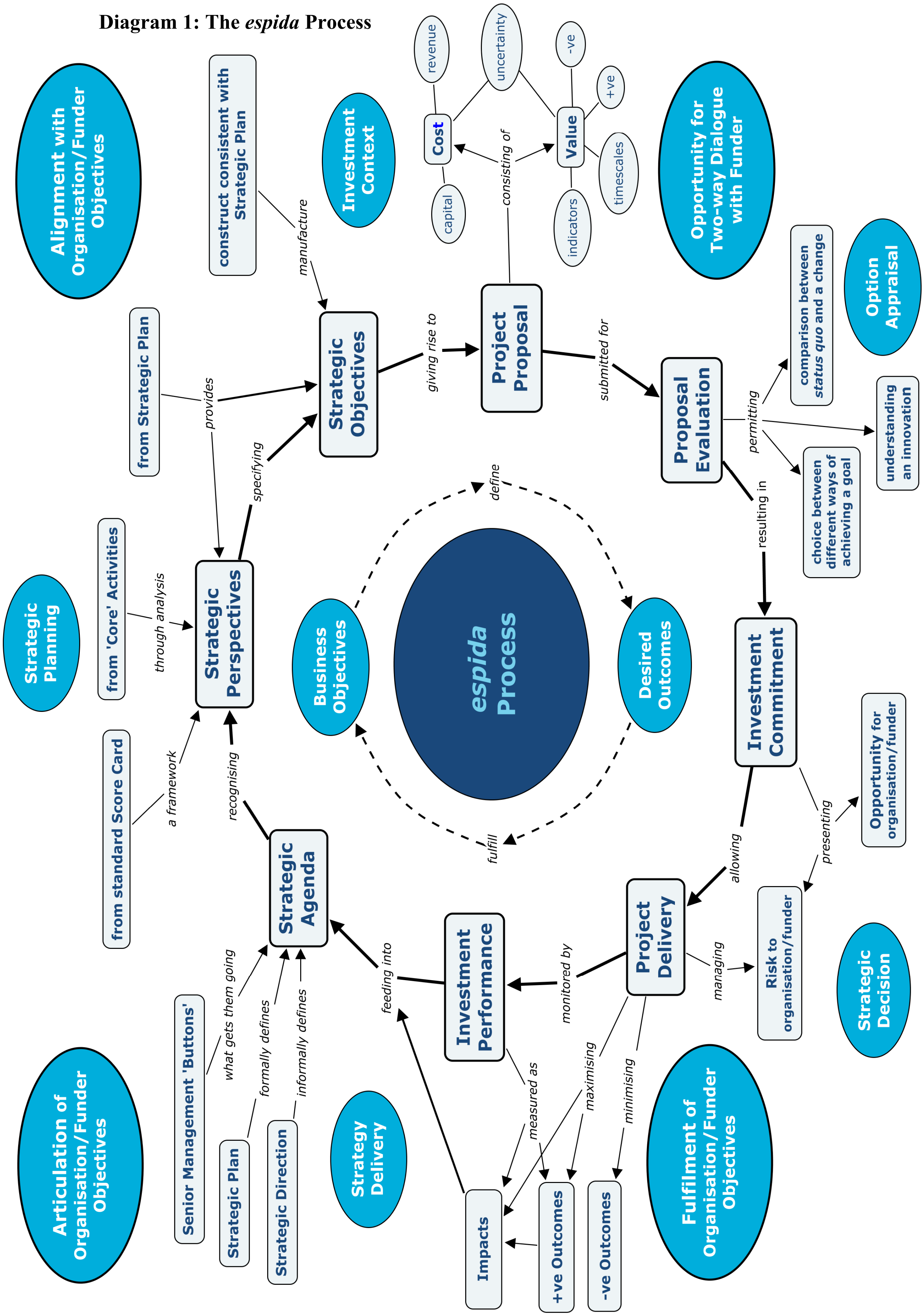
[4] Two such models are those of the LIFE Project (www.ucl.ac.uk/ls/lifeproject/) and the Digital Duurzaamheid Project at the Nationaal Archief van Nederland (http://www.digitaleduurzaamheid.nl/home.cfm).

[5] Their value is often termed 'intangible' and brings great issues for accounting for that value. See Appendix 1 below for a discussion on methods of dealing with intangible outcomes.

bring value (which is multifaceted) in strategic terms then there is a greater chance of receiving resources for their retention, so as to capitalise on that value.

It is not an exaggeration to suggest that most work exploring the issue of digital longevity has been undertaken with either external grants or with internal project funding. Common to both is the short-term nature of the funding: one to three years at a time. This is at variance with the nature of the problem. While funding bodies see the need for work to be carried out, they can provide funding only for ‘pump-priming’, not for the long-term. Now that for the most part the technological solutions have been, or can be, solved, the focus has to be on creating an environment where digital longevity is an organisational goal.

Diagram 1: The *espida* Process



3. Building a good business case: the *espida* Approach

The issue is one of clearly and effectively communicating value and benefit in terms that senior management can understand. The *espida* Approach does not pit the proposer against the decision-maker, but encourages them to enter into a dialogue on investment opportunities. This means supplying answers to the following questions that management many ask:

- How much do you want?
- What do I get for it?
- How will I know that I've got it?
- How likely am I to get it?
- What determines success or failure?
- How will you manage it for success?

This chapter breaks down the Approach into some principal sections that deal with these questions. Within the Approach, the Outcome Scorecard and Cost Template are tools that can be used by the stakeholders to facilitate the dialogue and help ensure that proposals are fully understood by all. The two sets of stakeholders (funders and proposers) play certain roles throughout the Approach and Table 1 suggests a 'traditional' view of these roles. Of course, this may change in different organisations, with, for example, proposers engineering the specific objectives themselves or funders setting targets.

Table 1. Stakeholder roles in the *espida* Process

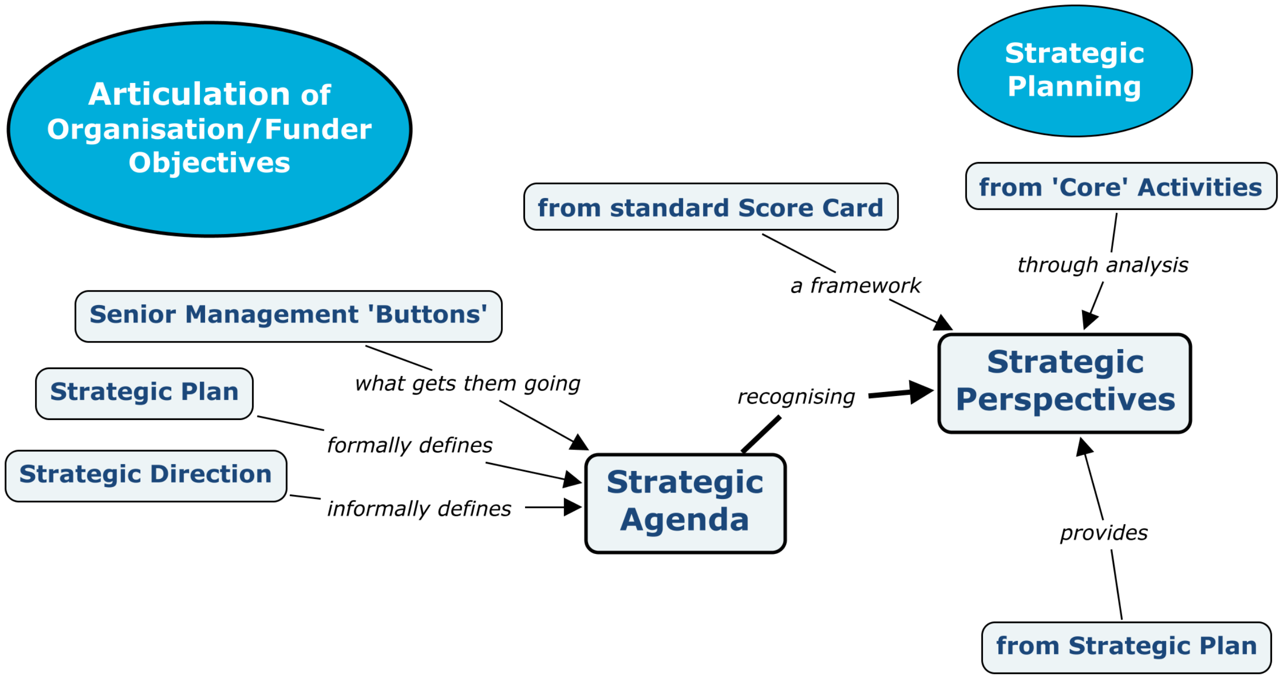
Aspect	Stakeholder
1. Definition of strategy	Funder
2. Dimensions of strategy	Funder
3. Specific objectives in each dimension	Funder
4. Targets to achieve these objectives	Proposer
5. Evidence required of meeting these targets	Proposer/Funder
6. Evaluation of the programme of work	Proposer
7. Summative evaluation	Proposer/Funder

3.1 The strategic agenda

The strategy of an organisation defines what it is, what it does and where it is heading. It is sometimes explicitly defined but other times not. The strategic agenda is a high-level prioritisation and structuring of the direction that the organisation wishes to head and the first link between the high-level strategic outline and detailed articulation of how these strategic goals can be achieved. The agenda is often defined formally from the strategic plan of the organisation, but can also be defined more informally from the predilections of senior management and the strategic direction already being followed (Diagram 2).

Understanding and communicating the strategy of an organisation is vital to the *espida* Approach as it ensures alignment between proposals and senior management's vision of the goals of the organisation.

Diagram 2: The strategic agenda



3.2 Understanding the Investment Context

Value is contextually situated within organisations in much the same way that beauty is situated in the eye of the beholder: it is not a constant, but rather a fluid and dependant notion. Proposals must therefore be aligned with the strategic aims of the organisation to offer any chance of success. These aims are communicated to proposers through the Investment Context, and creating this context is the beginning point of the *espida* Approach (which is encapsulated in Diagram 1 above).

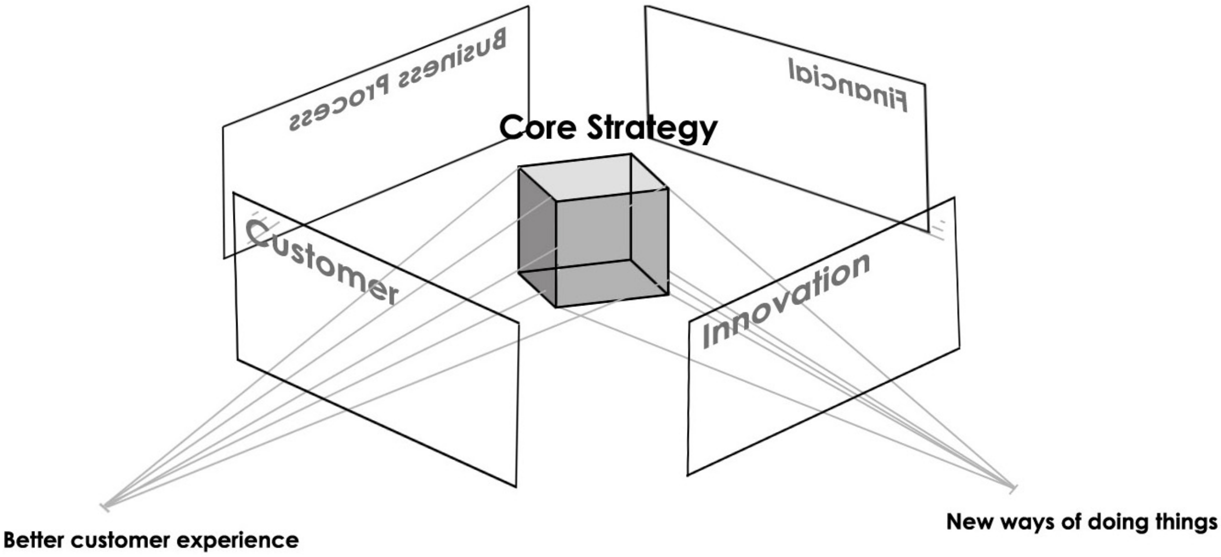
To create an investment context (Diagram 4), objectives must be generated that define the best way to work towards delivering the strategy. These objectives must be very carefully developed: very tightly defined objectives may guarantee relevance of proposals, but may not encourage imaginative proposals or growth opportunities. However, if they are defined too widely, focus can be lost and proposals will have little relevance to the organisation.[6] A successful and widely used method of creating and disseminating the strategic objectives is the Balanced Scorecard (BSC) created by Kaplan and Norton[7]. The BSC uses four distinct perspectives through which to view the strategic plan in order to create the objectives: customer perspective, internal business process, learning and growth and financial. Diagram 3 displays how perspectives can offer different views of a core strategy.

These different views can lead to very different ways of achieving the strategy (the objectives). The perspectives can be thought of in much the same way Richard Dawkins suggests viewing evolution.[8] He takes the example of an eye and suggests that it is common to look at an eye as if atop a mountain that has a sheer cliff all the way up. 'How can this be achieved?' is the obvious question. 'How do we get from a single-cell organism to this incredibly complex piece of

[6] Appendix 2 demonstrates the perspectives the elements used in the Outcome Scorecard for University of Glasgow, which while having some resonance with other organisations will certainly need to be redefined as appropriate.
[7] Kaplan, R.S., and D.P. Norton. 1992. The balanced scorecard - measures that drive performance. *Harvard Business Review* 70:58-63.
[8] Dawkins, Richard. *Climbing Mount Improbable*. London: Viking, 1996.

nature?' The answer is not to proclaim a 'miracle leap' to the top, but rather to change the viewpoint by walking around the mountain from which standpoint a number of very small steps that easily lead up to the top can be seen. This idea of steps is exactly what the objectives are, and by looking at the core strategy from different angles, four distinct routes can be seen. These perspectives form the base descriptors for the *espida* Scorecard.

Diagram 3: Viewing a core strategy through Kaplan and Norton's perspectives



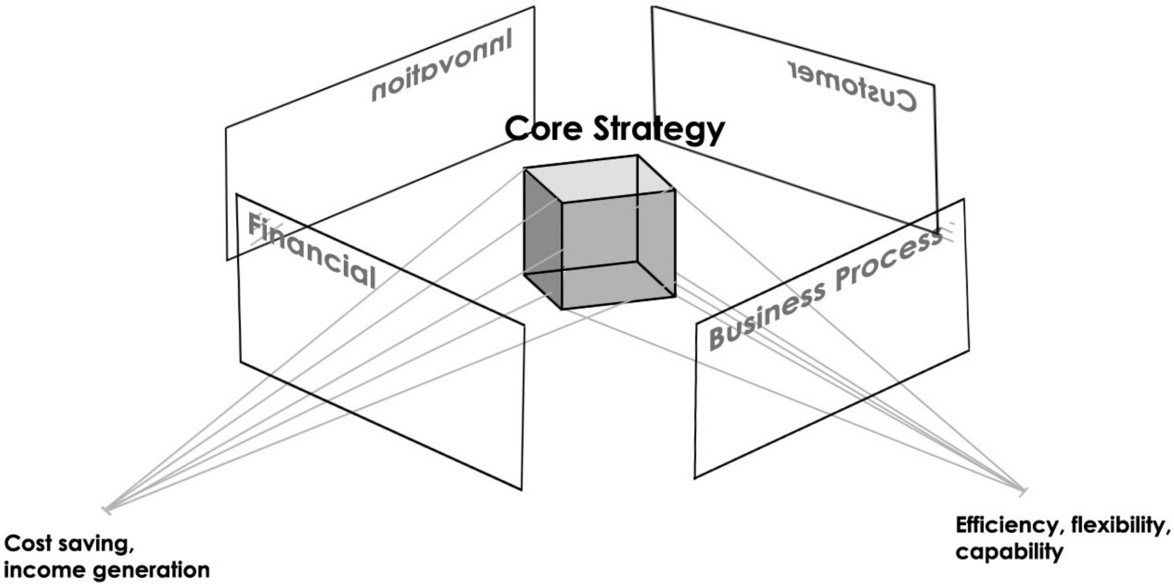
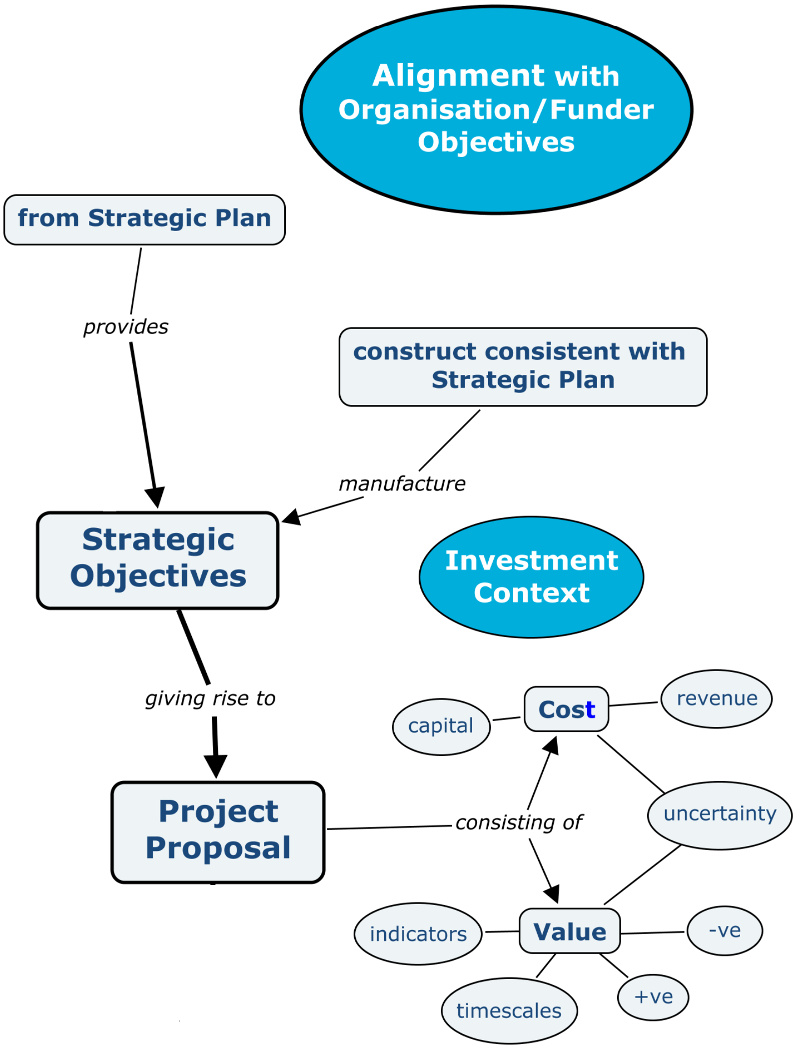


Diagram 4. Understanding the Investment Context



3.3 Producing the investment proposal

A project proposal is an expression of a desire for resources in return for which the funder will receive certain, hopefully positive, outcomes. In essence, the proposer is offering an investment opportunity to the funders framed by the investment context, and for it to be successful the funder must be satisfied that the opportunity is one worth taking. This is influenced by the scale of the investment required (be it financial or another resource), the relevance of the outcomes to the funder, the size of the outcomes, the ability of the proposer to undertake the project and the risk appetite of the funder.

A proposer gives the funder two distinct areas of information: the size of the investment required (the cost) and the likely outcomes of the project (value). The cost of the project details both capital and revenue, where capital is the initial outlay for the project and revenue are recurrent costs throughout the life of the project.[9]

In return for these resources, a project must bring value to the funder. The value does not have to be financial, and in the case of information projects it is often far more intangible. The values

[9] These are discussed in further detail below.

that a project brings can be categorised as outcomes and impacts – where outcomes are benefits realised directly from the project work, and impacts are effects felt at more remove. These can be positive or negative. As an example, a proposal to open a medical research centre that will use animal testing as part of its research will have to outline both the positive outcomes of the project – development of medicines, curing diseases – and the negative ones – large-scale negative press, possible attacks on staff and the centre. While this example is at the more extreme end of the spectrum, all projects will have the possibility of bringing negative outcomes and impacts. It may seem anathematic to some to detail possible negative outcomes however, it is necessary for funders to view all relevant information before making an investment decision. It can also give an opportunity for proposers to communicate how they will manage and minimise risks.

There is no guarantee that the proposed outcomes will come to pass, and funders need some indication of what this likelihood is, and whether they will be felt immediately, or some time into the future. Of course, the uncertainty aspect also allows the proposers to fully analyse possible negative outcomes of the work.[10] By outlining timescales (i.e. when the outcomes will come to pass), the proposer can suggest to the funder that short term, short-lived negative outcomes can be balanced by positive outcomes that will bring a greater return in the long-term.

In order for the funders to fully understand the extent of the effect of the work of the project, indicators must be detailed. Indicators allow a funder to answer the question 'how will I know that the outcomes have come to pass?' A good indicator will not only detail the size of the outcome (the project will cut the number of complaints by 50%), but will also detail the areas where it will be felt (human resources will save fifty hours per annum). These characteristics of outcomes are all communicated in the Outcome Scorecard (which are described in greater detail below).

The information that the proposal details forms the basis of a two-way dialogue with the funder. The purpose of communicating these facets of the proposal is to give the funder as much relevant information as possible for them to see areas where perhaps more clarification or negotiation is needed and then to make a final decision.

Funders will always have to choose between investments (aspirations always outweigh the size of enabling resources). Depending on the funder's situation, the evaluation process will have subtly different perspectives: it may be a choice between completely disparate proposals (a change in business process, staff training for customer relations, or work on the fabric of buildings); an evaluation of proposals within the same sphere (archival staff versus an institutional repository); or indeed a choice between different ways of achieving the same goal.[11]

The proposal evaluation results in the funders making an investment commitment to the proposer. The project committed to at this point may differ from the original proposal depending on the outcome of any dialogue between the funder and proposer at the point of evaluation.

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[10] An excellent source for risk analysis (which fits our 'negative outcome' scenario) is JISC infoNet http://www.jiscinfonet.ac.uk/InfoKits/risk-management/index_html.

[11] This final option is the classic definition of Option Appraisal, where the purpose is to test whether a solution actually meets the needs/requirements for as many defined attributes as desired. It can be used to determine which course of action to take (e.g. to buy or lease an asset). The process is detailed in HM Treasury's Green Book, http://greenbook.treasury.gov.uk/. Our interpretation of Option Appraisal is a little more relaxed than purists would define, being defined more by a choice between proposals seeking investment from the same pot of resources.

3.4 Managing project delivery and reassessment

Of course, receiving the investment is only the beginning. Both the proposer (who has now become the project manager) and the funder have further roles to play. The project must be managed effectively (Diagram 5). As the proposal has outlined, outcomes and impacts are not guaranteed, there are only likelihoods of them coming to pass. The delivery of the project therefore aims to minimise the negative outcomes (commonly viewed as risks) and maximise the positive outcomes. Using the outcome scorecard the project manager can analyse the relationships between outcomes, cost and delivery method to effectively plan the progress of the project. [12]

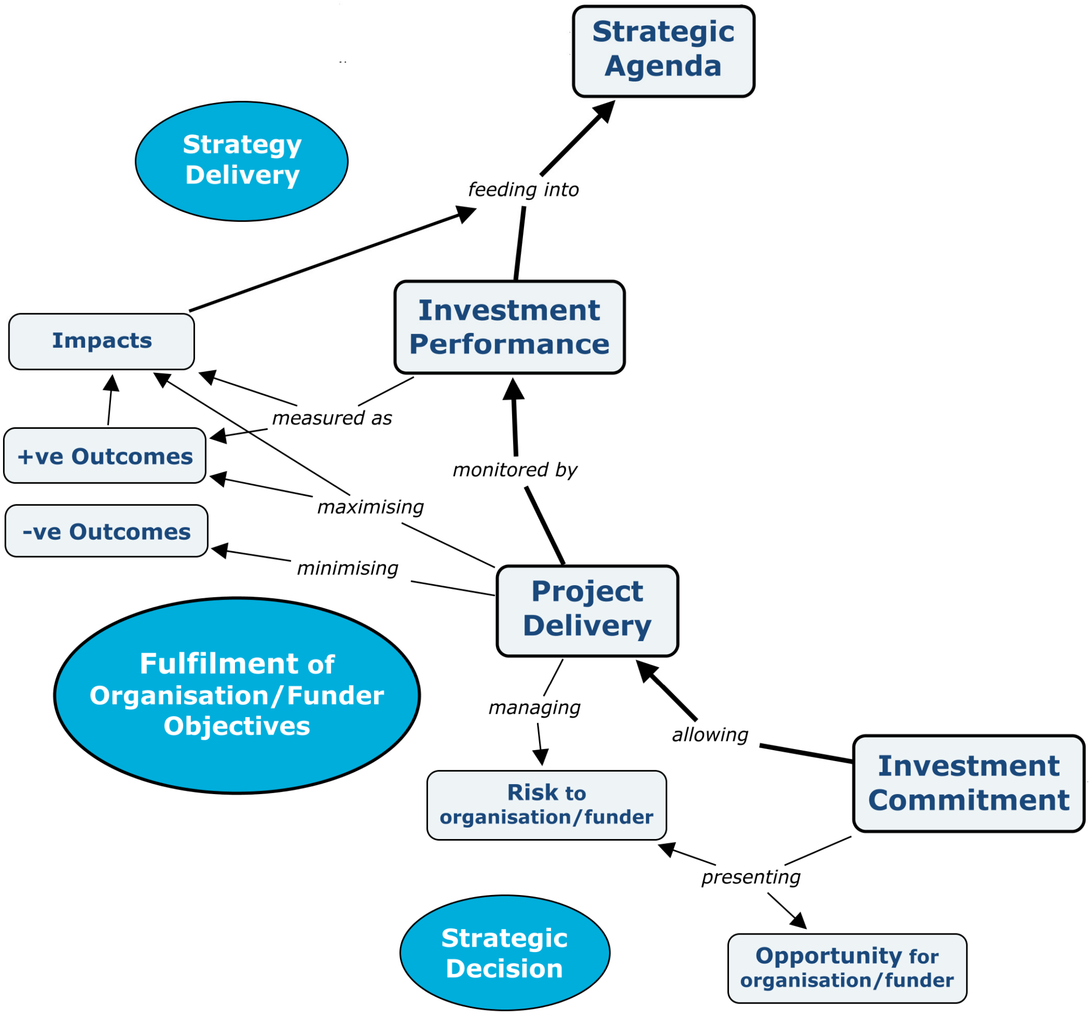
Monitoring the progress of the investment is made easier with the outcome indicators that have already been agreed upon with the funder. Both the project manager and funder can use them, and milestones derived from them, to control the progress of the investment and take timely action to remedy any issues.

Throughout the course of the project and at its completion, evaluation of the investment performance must be undertaken. Formative evaluation is used to ensure the project is achieving its aims and looks at ways of improving. Summative evaluation looks at lessons that can be learned from the work and the quality of the outcomes. These will generally feed back to the proposer, but also to the funder. When undertaking summative evaluation, there are two major distinctions that must be noted. First, outputs and outcomes should not be conflated. If for example, a proposal wished to create an Institutional Repository in a University, an output would be the repository itself, but an outcome would be staff depositing materials within the repository and the subsequent use of the documents by others.

Second is the difference between outcomes and impacts. Generally, impacts are broader and take longer to come to fruition. Impacts may come uniquely from one project, but will in all likelihood be the consequence of a number of outcomes from different projects. Because of this the Scorecard only details outcomes, not impacts. As impacts are ramifications of a number of projects over the longer term, it is these areas that will feed back into strategic planning, ensuring that the organisation moves forward as it makes progress and will only be understood by those taking a more general overview.

[12] One of the most commonly used project management tools is the Prince2 methodology developed by the Office of Government Commerce in the UK (http://www.ogc.gov.uk/methods_prince_2.asp). The *espida* Approach can be used in conjunction with this methodology (see Appendix 4 below).

Diagram 5. Delivering the project



4. Outcome Scorecards and Cost Templates

This chapter discusses the tools that have been developed by *espida* to help funders and proposers enter into a successful dialogue about an investment decision.

4.1 Outcome Scorecards

The Outcome Scorecard is the conduit through which the investment context is expressed and proposals are communicated. It is therefore a top down and bottom-up communication tool. Each of the characteristics of outcomes as described above are represented by a column in the Scorecard (Diagram 7).

- **Outcomes are not all the same size, so have to be categorised**
  Outcomes can be described as either 'primary', 'secondary' or 'additional'. It may be helpful to think of this in terms of earthquakes. The categories define the strengths of earthquakes. However, the *espida* categories are not absolute and are self-referential. This means that if a primary outcome is detailed it means that it is one of the principal outcomes of the proposed work, not that it is the same size as a primary outcome from another, larger proposal. The categories help to focus the attention of those reading a proposal on its main features.
- **They can be either positive or negative**
  For example, a proposal may save an organisation money, but it might have to make staff redundant to achieve it. The scorecard allows funders to view both sides of this issue. Identifying negative risks allows the planning of contingency measures.
- **They are not yet definite, so there is a likelihood of their coming to pass**
  Outcomes, until they come to pass, are not definite and there is no guarantee that the funder will receive all of the outcomes in the proposal. Again, likelihood falls into one of three options: 'probable', 'medium' or 'low'. The question to ask is, how likely is it that this outcome will happen?
- **Outcomes may not all appear immediately**
  There are different time-scales attached to outcomes coming to pass (short-term, mid-term, long-term). Some may happen immediately, and others could happen in the long term. Longevity is also a factor to take into account. Outcomes may be short-lived, or they may have a more permanent nature, and proposers should therefore indicate the period of time that the outcome will continue to have an effect. There are no definite descriptors for *Longevity* as it may not apply in all cases, or be dependant on other factors that need a unique explanation.

4.1.1 Providing Outcome Indicators

An indicator is the piece of information that most effectively communicates the exact nature of the outcomes to decision-makers. They are however hard to pin down. When deciding on appropriate indicators, the guiding question is 'how will we know that the outcome has happened'? The proposers must decide what indicators to use based on:

1) **Their ability to convey an understanding of the outcome**
   Indicators have to be relevant and meaningful to the outcomes that the project will bring.

2) **Their appropriateness**
The more important the outcome the more detailed the indicator of outcome must be. This will help the decision-maker focus on what are the most important outcomes of the proposed work. Conversely, for lesser outcomes, especially additional ones, the indicator does not have to be as detailed.

3) **The cost in creating or collecting the indicators**
Where possible, existing indicators should be used to minimise the resources needed to keep track of the performance of the work. The time spent on collecting and analysing indicators should be in line with the scale of the work.

Certainly, there is no one definite indicator that is 'right', indeed more than one indicator may be used for one outcome and in some cases one indicator could cover two or three outcomes. In addition to being meaningful, indicators need to walk a fine line of achievability. Set them too low, and decision-makers will see them as 'easy' and of little point, but set them too high and there is a risk that they will not be achieved and the project be deemed a failure.

4.2 Using the Perspectives to view Proposals

As described above, perspective are used to understand the Investment Context within which a proposal is made. At the stage of creating a business case, proposers view their proposal using the objectives within each perspective to define which objectives their work will contribute to. This ensures that they are aligning their proposal to the requirements of the funders.

It is certain that most project proposals will not have an effect in all of the perspectives – indeed, it may only bring a contribution to the development of one or two objectives in one perspective.

Diagram 6: Using the perspectives with a project proposal

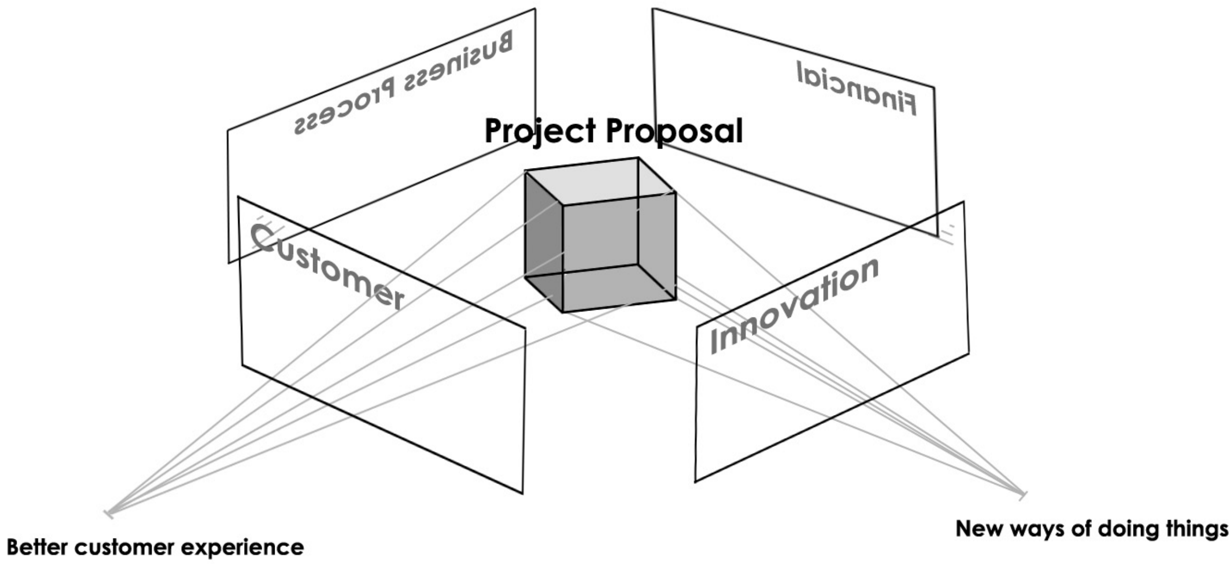
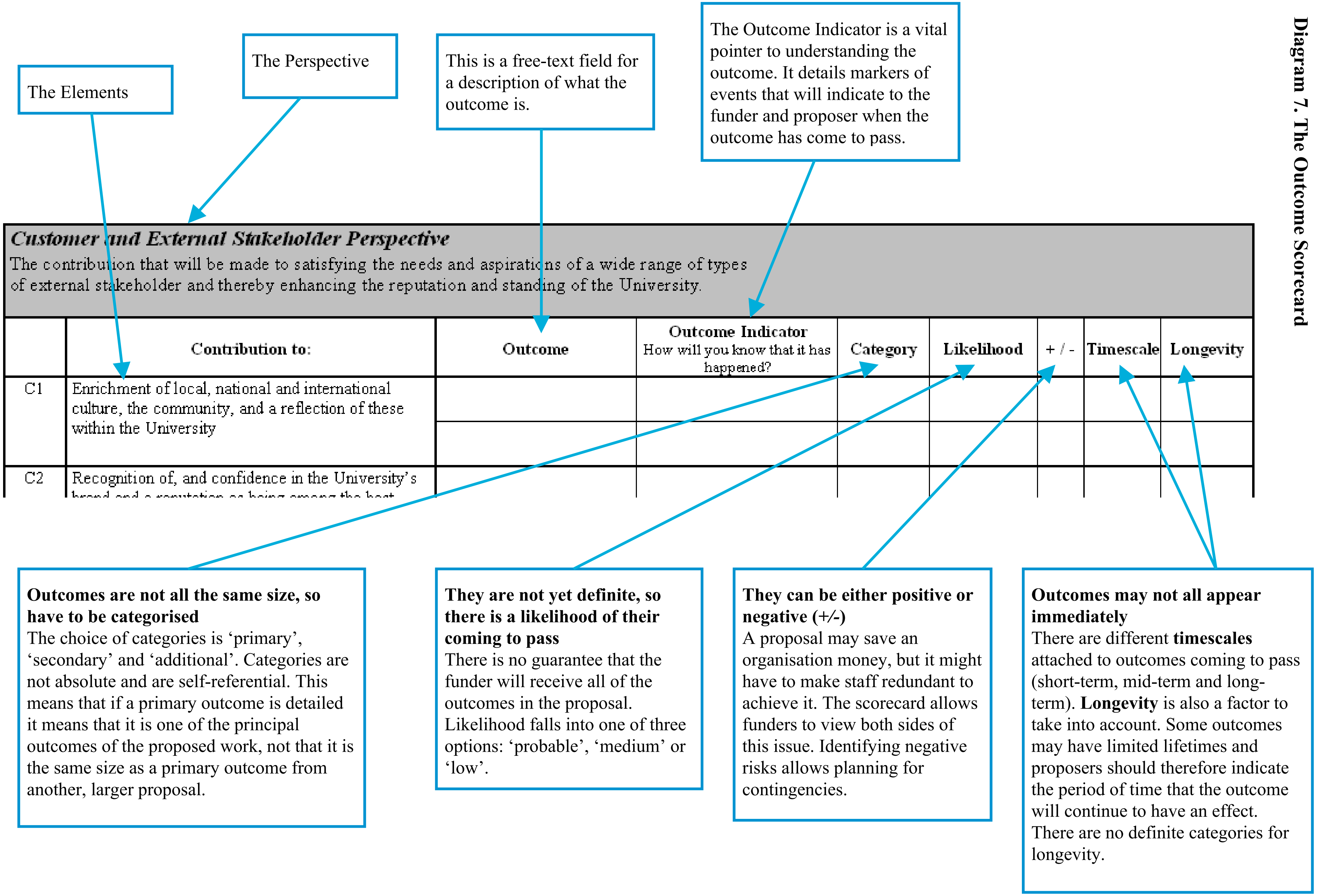


Diagram 7. The Outcome Scorecard



4.3 Applications for the Scorecard Approach

The Outcome Scorecard has four principal roles:

1) to convey the strategic priorities of the organisation in a form that can be understood through perspectives and elements (top-down communication);
2) to help potential proposers internally explore the benefits and disbenefits of their planned work to help understand risks and refine the proposal to ensure it delivers the biggest range of benefits (internal project development);
3) to communicate the outcomes of a particular proposal to funders, from which decision-makers can enter into a dialogue about the proposal and make an investment decision;
4) to measure the performance of an investment.

A complete set of Scorecards developed for the University of Glasgow are detailed in Appendix 2. The elements have been carefully aligned to the University's newly reshaped Strategic Plan, and while some elements may have resonance in other organisations, a detailed examination of applicability of the elements to a particular organisation will be required before implementing the approach.

4.4 Cost Templates

A good business case is a communication between the proposer and funder and is composed of clearly defined costs and benefits. The *espida* project has put the majority of its work into benefit articulation as there is already a large body of literature and research on the costs of digital preservation (as discussed in the 'Background to the *espida* Approach' chapter above). This is not to suggest that the costing of project proposals in general is always satisfactory, but rather to highlight that within the Digital Preservation community there are project outputs and papers from which a list of costs that need to be considered can be pulled. Outwith the specific area of digital preservation, there are of course a great number of models that can be used to understand the costs involved in different types of work.

While this body of work exists with which to consult, the accurate projection of ongoing costs can be difficult and often not fully understood. To this end, the *espida* Cost Template has two fundamental aspects that help address these issues.

In the Template, costs are split into either Capital or Revenue and thus start-up costs and ongoing costs are dealt with separately. Capital are the costs required to set up a project. These will typically include any equipment needed, the creation or modification of physical space and any other assets or resources required. These costs may of course be spread over more than one year and depending on the accounting preferences of the organisation, may be written off or depreciated.

Revenue costs are recurrent costs throughout the term of the project (and in some cases beyond). They include maintenance of any equipment or facilities, licences or other types of recurring fees and overheads. They also include the largest cost a project will typically have; staff costs. Proposers must carefully address the issues of staff costs and the retention time of the staff, bearing in mind organisational commitments to staff (such as redundancy pay at the end of the project life, or an undertaking to retain the member of staff within the organisation). Revenues are the least well-understood aspects of project costs and demand the most reflection and detail.

While costs are relatively easy to communicate (there is an agreed structure and language) there are still uncertainties attached to them. These include bad estimations, rising costs and calculations based on wrong assumptions. For the most part, the Template takes care of these by asking the proposer to detail the 'Basis of Costing' – where do the costs come from, what are they made up of, upon what are they based? This field allows the decision-maker to understand the assumptions and decisions made while compiling the costs and come to their own conclusions about their accuracy.[13]

Diagram 8: The Cost Template

The cost required in the category.

A note on assumptions made for the costs and any sources used to create them. This allows decision makers to judge the accuracy of the costs.

Type of cost	*Amount*	*Basis of Costing*[3]
Capital[1]		
Equipment		
Space/building modification		
Assets/resources/materials		
Sub-total		
Revenue[2]		
Equipment Maintenance Facilities Rentals/access fees		
Staffing Staff 1 Staff 2 ……		
Overheads Further breakdown if necessary (FEC)…		
Sub-total		
TOTAL		

Capital are the initial, one-off, start-up costs. They can of course be incurred over more than one financial year.

Revenue are recurrent costs expected over the life of the project. The highest of these are generally staff costs. Revenue are often the least well-defined costs in business cases.

[13] This aspect of the Template came from discussions with a Head of Accountancy in the public sector.

4.5 Option Appraisal

Option appraisal is the process of deciding on a course of action that will best match the end result required. The *espida* Approach can be used to inform decision-makers on the best course of action to reach a desired outcome. This was tested in the study on eTheses (see Appendix 5b).

In the study, one scorecard was used to explore the outcomes of the different options. Aligning the options in this way, rather than on separate scorecards offers a quick view of comparison for the decision-makers. Of course, classic option appraisal is a top-down process where staff explore the different outcomes arising from certain courses of action, rather than a bottom-up creation of a business case given to decision-makers. In the eTheses study for example, it is assumed that a decision has already been taken on the value of eTheses and that the scorecard is exploring the best way to exploit that value.

It is good practice in all option appraisal exercises to always show ‘do nothing’ as an option. However, in the studies, this option is never explicitly displayed. This is because the scorecard displays outcomes as relational to the status quo, so the ‘do nothing’ option is always implicitly included.

The advantage of using the scorecard for option appraisal is that it can help stop the use of any sort of ‘summing up’ of benefits and costs, and displays the relationships between outcomes and strategic objectives in an undiminished way.

5. The Approach in Practice

In developing and testing the Approach, potential pitfalls have been identified. This chapter will clarify some of these possible pitfalls with reference to the studies.

5.1 Undertaking outcome modelling (or, “filling in the scorecard”)

The case studies, by necessity, centred on a single core meeting with members of staff throughout the University of Glasgow. While core meetings of the primary stakeholders will be a central part of any proposal process, three other steps should be taken by the proposers:

1. Initial individual preparation for the ‘outcome modelling’ meeting.
   All those with a stake in putting together the proposal should reflect on the possible outcomes of undertaking the work before a general meeting with all stakeholders. This allows for the potential of many more outcomes to be discussed and reflected upon, and may throw up some interesting angles that a larger group may not have thought of. This is basic preparation.

Outcome Modelling Meeting

2. Individual reflection/research on outcomes and indicators.
   After the meeting, further research will be needed to explore potential outcome indicators that could be used – finding ones already used within the organisation, or investigating the potential of new ones.

3. Refinement of the modelling.
   Refinements will need to be made to the outcomes and scope of the project in light of the modelling meeting and research into indicators. Experience shows, that this stage is more effective if carried out by one ‘representative’ of the proposal team.

The timescale for these steps can vary and the detail required in each step will depend on the importance and size of the case being made, but the preparation and refinement are crucial to the success of communicating outcomes.

During the case studies on Institutional Repositories (Appendix 5a) and eTheses two discretely different ways of modelling outcome were explored: one worked from the bottom-up and the other top-down. In the bottom-up method, participants in the meeting brainstormed potential outcomes, with discussion unhindered by perspectives and elements in the scorecard. These unstructured and under-developed benefits are then matched to elements in the scorecard and finalised.

The top-down method takes the outcome scorecard as its starting point, with proposers working through the perspectives and the elements. This method focuses the proposer’s mind from the beginning on the benefits that the organisation will find attractive. This method can then be supplemented with further thought on benefits that are more outlying. A danger of this option, which came to light in one of the meetings, is that participants may tire of the structured thinking while filling out the scorecard and rush through the rest of the template. An option to address this may be to begin at the perspective that seems to be most relevant first.

Which method to use depends on the make-up of the team and their preferred way of working. Ultimately the scorecard exists as a framework of communication between proposers and decision-makers and allows proposers to work towards the needs of the decision-makers: it describes the ‘buttons’ to be pressed to get a good decision and in both methods the scorecard ultimately frames the outcomes of the proposal. Certainly the top-down method focuses thinking on outcomes, which in turn helps structure the shape of meetings to help use time efficiently.

5.2 Possible pitfalls

Proposers must be careful to keep in mind to whom they are making the business case. For example, in the Institutional Repository study the outcome scorecard and the outcomes would change if the case were being made to the Director of the Library rather than the Senior Management Group of the University (an additional outcome for the Director of Library Services for example, may be the kudos within the Library community of implementing a successful institutional repository). The question of 'to whom is this case being made' must be kept in mind.

It can be easy to confuse benefits to the organisation with facets of the project that would be good to undertake. In the Institutional Repository study it had been suggested that having 'distributed access' to the IR would be a primary outcome to the organisation. While this may indeed be of benefit once the IR is implemented, it is not itself a benefit to the organisation, it is rather an undertaking that would bring more advantage to the Repository. Consider the business case for funds to build a new research centre. It would not be a selling point to senior management and other funders that this building would have more than one front door – this may be a desirable option for the building, but not one that will convince them to fund the build.

Communicating potentially negative benefits can seem to many as something that should never be done. However, negative outcomes demonstrate to decision-makers that the proposers have taken account of all possible outcomes that the proposed work may have, and open a dialogue on how these can be mitigated against. To look at it a different way, it is always easier to imagine worst-case scenarios, and in many cases decision-makers will do just that as they want to ensure their investment pays off. Through describing and communicating possible negative outcomes, the proposers convey the real likelihood and degree of outcome (which may be far less than the decision-makers imagine), rather than letting fear of the unknown sway decision-makers.

5.3 Reductionist issues

The primary rationale of the *espida* Approach is that the value of something, be it an information object or a new member of staff undertaking research, cannot always be reduced to a final figure (financial or otherwise). To attempt therefore, to reduce the scorecard to a final answer, is to defeat the purpose of the Approach. The perspectives of value will be lost. Table 2 below highlights the dangers in reducing the template to a final 'answer'. In this example the evaluators at a University use a technique that will give the category of outcome a number in order to produce a single score by which they can decide between two proposals – 'primary'=3, 'secondary=2, 'additional'=1. (In the example, only the columns detailing the negative or positive nature of the value and its priority are shown.)

Project 1 has strong benefit to the customer and external stakeholder, and internal business perspectives. Its final score is high. Conversely, **Project 2** offers a very high benefit to the intellectual capital of the University and its research and teaching potential. However, the research will also incur a negative outcome from the community and potential donors. Its overall figure is therefore low. A decision based on these figures would ignore the lower scoring proposal and put forward Project 1 for funding. This 'automatic' decision-making would miss the very strong benefits of Project 2 for the apparently more beneficial Project 1 with no positive reflection on the risk of undertaking Project 2. It may be that the benefit of the intellectual property gain is more strategically pressing than improving customer relations, or that senior management would be willing to take a short-term dip in reputation in order to reap other rewards.

Of course, evaluators sometimes have many hundreds of proposals to whittle down to a small number of successful applications, they may feel that some degree of reduction analysis will have to take place. For this to have any chance of success, very careful application of a weighting system would have to be implemented. The weighting would mean that low scoring projects that bring value under a crucial area of strategic importance can be measured against proposals that offer benefit across a wide range of the objectives of the organisation. Such a weighting system would take an investment in time by the evaluators and would be dependant on the priorities of the organisation at any one time – for example it could be that in light of the Sarbannes Oxley Act, compliance was a primary focus. The time spent on this weighting system is perhaps equivalent to the time that an evaluator would spend on single proposals using their skills to judge the merits of the different perspectives.

It should be remembered, that the purpose of the outcome scorecard is to aid the art of the decision-maker. Revealing all perspectives of benefit to the organisation allows the decision-maker to allocate resources with as much relevant information as possible without resorting to the somewhat blind and automatic process of reduction.

Table 2. Example of problems in reducing the template

Scorecard Elements	Project 1		Project 2	
	+ / - Outcome	Category	+ / - Outcome	Category
Customer and External Stakeholder Perspective				
Enrichment of local, national and international culture and community and a reflection of these within the University	+	3		
Recognition of the University's brand, reputation as being among the best Universities in the world and customer confidence in that brand and reputation	+	3	-	3
Strong customer satisfaction and high quality service delivery (students, parents, public, etc.)	+	3		
Academic attractiveness to potential students, staff, academic partners and funding agencies	+	2	-	2
Commercial attractiveness to potential sponsors and collaborators			-	3
REDUCTIONIST TOTAL	+11		-8	
Internal Business Process Perspective				
Information accessibility and open communications with staff and customers	-	1		
Operational efficiency and productivity (within existing resources)	+	1		
Effectiveness of decision making and responsiveness of leadership	+	2		
Process potential and organisational flexibility to take advantage of future change	+	1		
Compliance with legislation and regulation				
REDUCTIONIST TOTAL	+3			
Innovation and Development Perspective				
Intellectual capital of staff and the organisation through internal generation or external procurement			+	3
Motivation, fulfilment and satisfaction of staff and development of a climate of continuous improvement				
Quality and potential of research activities and outputs			+	3
Quality and potential of teaching			+	3
Responsiveness to change (flexibility and ability to manage change)				
REDUCTIONIST TOTAL			+9	
Financial Perspective ***Income Generation through:-***				
selling assets				
licensing/rights to assets				
teaching and research				
contracts, grants, fees, donations			-	2
Cost Saving in relation to:-				
labour, time				
space	+	2		
direct expenditure				
REDUCTIONIST TOTAL	+2		-2	
FINAL REDUCTIONSIT TOTAL	**16**		**-1**	

6. Conclusion

While the initial impetus for the work that was undertaken by the *espida* Team was to provide a tool for the digital preservation community with which they could make successful business cases, the resulting *espida* Approach has far wider applicability. At the heart of the work is an understanding that the relationship between funder and proposer should be shaped by the strategic objectives of the funder. By modelling the process of the creation of an investment context within which the funder and proposer can communicate and understand positive and negative outcomes, the *espida* Approach benefits a range of organisation types, helping them better understand benefits that are more complex than financial returns.

The *espida* Approach allows:

decision-makers to

- make informed decisions on proposals that offer intangible returns,
- understand proposals for specialist undertakings,
- see the likelihood of positive and negative outcomes,
- measure the performance of the investment;

and **project proposers** to

- assess and align their proposal to meet the strategic agenda of the organisation,
- use the language of decision-makers to convey the value in their proposal,
- communicate intangible benefits effectively.

The *espida* Approach certainly has direct applicability in Higher and Further Education, Funding Councils, the public sector and organisations that deal with a lot of information. The ability to give transparency in decision-making and furnish funders with clear, concise and germane information is becoming increasingly attractive as the need for accountability grows (both from the public and shareholders). At its most basic however, the Approach offers proposers an effective way of communicating intangible benefits and funders the information they require to make sound investment decisions.

Appendix 1: Methods of dealing with economic performance and intangible benefits

In creating the *espida* approach, the first hurdle was to find a suitable underlying economic approach that would offer a framework to help communicate intangible value. Recent research in the heritage sector has used contingent valuation as a method of discovering and communicating intangible outcomes. Used by the British Library to help justify its use of public funding, contingent valuation (CV) uses questionnaires to place a monetary value on services and outputs. CV is a complex undertaking and reduces intangible values to a single financial figure. Because of this, it was decided that it is too reductionist, complex, prone to error, costly and unwieldy for use in the *espida* approach.

Cost Benefit Analysis (CBA), another economic method examined, is an aid to decision making. It analyses all factors of undertaking a programme of work to comment on its efficiency, with the primary objective of funding the most efficient method of achieving the goal. It incorporates negative benefits with traditional capital outlay under 'costs'. The *espida* Approach prefers to keep these two types distinct and employs the terms 'dis-benefit' for the former and 'costs' for the latter. The Approach details the relationship of these benefits (both positive and negative) within the remit of the work. That is, some benefits will be a major outcome of the work, and others will be of less consequence.

CBA's initial purpose to minimise Management 'discretion' can benefit from the *espida* Approach. Where intangibles are unclear CBA uses various methods to create a monetary sum for them (willingness to pay and cost of life being two such examples). Integrating the Outcome Scorecard into a CBA could offer a consistency to the treatment of intangibles and transparency of how they are dealt with.

Other economic methodologies, including 'return on investment' generally ignore intangible benefits, or place arbitrary financial figures on them. It was decided that a derivation of Kaplan and Norton's Balanced Scorecard would best fit the needs of the project.[14] The balanced scorecard (BSC) is a performance measurement tool that uses different perspectives to look at the performance of an organisation beyond a strictly financial outlook. The scorecard is a great tool for the communication of strategic objectives, and it is this ability coupled with the multi-directional views from which to view assets that makes it an attractive framework to develop. In addition, it is an internationally recognised tool, used in a great variety of organisations.

We have repurposed Kaplan and Norton's concept in a fairly cavalier way, using it as a tool for making evaluating and proposals in addition to its performance measurement capabilities, and those that have used BSCs before will discover many differences in the approach. However, the concept of perspectives introduced by the BSC is one that still underpins the *espida* approach.

[14] See Kaplan, R.S., and D.P. Norton, (1992), 'The balanced scorecard - measures that drive performance', *Harvard Business Review* **70**:58-63; & Kaplan and Norton (2001). *The Strategy-Focused Organization. How balanced scorecard companies thrive in the new business environment,* Boston: Harvard Business School.

Appendix 2: Outcome Scorecards for the University of Glasgow

This Appendix presents the four Scorecards that the project developed for the University of Glasgow.

Each scorecard details the objectives of one of four perspectives (customer and external stakeholder; innovation and development; business process; and financial). As the project was being undertaken, the University of Glasgow was carrying out a strategic review and this presented an opportunity to engage with the architects of the new Strategic Plan to develop the objectives within each perspective. A great deal of time was taken to ensure full alignment between the new plan and the investment context described in the Scorecards. The following Scorecards reflect the aims of a research-intensive higher education institution. While some of the objectives may have relevance to other research institutions, a detailed review of their relationship to the strategic plan must be undertaken: the creation of a meaningful investment context is vital for the success of the organisation.

Notes on the Impact Scorecard

Outcome
A description of the proposed outcome for the particular objective.

Outcome Indicator
This is an indication of how it shall be known that the outcome has come to pass.

Category
This suggests the degree of outcome proposed. This can either be 'primary', 'secondary' and 'additional'.

Likelihood
The likelihood of impact coming to pass is measured as either: low (<25%), medium (25-75%), probable (>75%).

+/-
Is the proposed outcome a positive or negative one?

Timescale
The return can either be in the short-term, mid-term or long-term.

Longevity
This field indicates if the outcome will be short-lived or remain in place for a longer time period. There are no definite categories for this characteristic.

[Note: the description of these perspectives (and the perspectives themselves) may have to be changed to suit other organisations.]

Customer and External Stakeholder Perspective

The contribution that will be made to satisfying the needs and aspirations of a wide range of types of external stakeholder and thereby enhancing the reputation and standing of the University.

	Contribution to:	**Outcome**	**Outcome Indicator** How will you know that it has happened?	**Category**	**Likelihood**	+ / -	**Timescale**	**Longevity**
C1	Enrichment of local, national and international culture, the community, and a reflection of these within the University							
C2	Recognition of, and confidence in the University's brand and a reputation as being among the best Universities in the world							
C3	Strong customer satisfaction and high quality service delivery (students, parents, public, etc.)							
C4	Academic attractiveness to potential students, staff, academic partners and funding agencies							
C5	Commercial attractiveness to potential sponsors and collaborators							
	EVALUATORS' SUMMARY							

Internal Business Process Perspective

The contribution that will be made to the way that the University does things and its capacity to change and/or expand to take advantage of new opportunities.

	Contribution to:	Outcome	Outcome Indicator How will you know that it has happened?	Category	Likelihood	+ / -	Timescale	Longevity
P1	Information accessibility and open communications with staff and customers							
P2	Operational efficiency and productivity (within existing resources)							
P3	Effectiveness of decision making and responsiveness of leadership							
P4	Process potential and organisational flexibility to take advantage of future change							
P5	Compliance with legislation and regulation							
	EVALUATORS' SUMMARY							

Innovation and Development Perspective
The contribution that will be made to the intellectual capital of the University and to a working environment in which the generation of new ideas is the norm for both individuals and groups.

	Contribution to:	Outcome	Outcome Indicator How will you know that it has happened?	Category	Likelihood	+ / -	Timescale	Longevity
I1	Intellectual capital of staff and the organisation through internal generation or external procurement							
I2	Motivation, fulfilment and satisfaction of staff and development of a climate of continuous improvement							
I3	Quality and potential of research activities and outputs							
I4	Quality and potential of teaching							
I5	Responsiveness to change (flexibility and ability to manage change)							
	EVALUATORS' SUMMARY							

Financial Perspective

The contribution that will be made to the 'bottom line' of the University, either through revenue generation or savings in operating costs.

	Contribution to:	Outcome	Outcome Indicator How will you know that it has happened?	Category	Likelihood	+ / -	Timescale	Longevity
	Income Generation through:-							
F1	selling assets							
F2	licensing/rights to assets							
F3	teaching and research							
F4	contracts, grants, fees, donations							
	Cost Saving in relation to:-							
F5	labour, time							
F6	space							
F7	direct expenditure							
	EVALUATORS' SUMMARY							

Appendix 3: Cost Template

Type of cost	*Amount*	*Basis of Costing*[3]
Capital[1]		
Equipment		
Space/building modification		
Assets/resources/materials		
Sub-total		
Revenue[2]		
Equipment Maintenance Facilities Rentals/access fees		
Staffing Staff 1 Staff 2 ……		
Overheads Further breakdown if necessary (FEC)…		
Sub-total		
TOTAL		

Notes:
[1] Capital are the initial set up costs (by their very nature, one off). They can also be depreciated.
[2] Some recurrent costs could be discounted or depreciated.
[3] Basis on which the figures are provided so that it is clear what is included and what uncertainties are inherent in the figures

Appendix 4: *espida* and PRINCE2

This chapter explores the relationship between the project management tool PRINCE2 and the *espida* Approach. Many organisations use PRINCE2 and it has been suggested that the work of *espida* may not be compatible with the Approach. This is far from the case and the chapter details how the *espida* Approach can be used effectively with PRINCE2.

PRINCE 2 is a project management tool that has been developed by the Office of Government Commerce in the UK (www.ogc.gov.uk/prince2/). It helps organise and manage projects, and defines responsibilities in order that the flow of progress is unhampered by confusion or lack of understanding. Importantly, the ultimate goal of the PRINCE2 methodology is the successful completion of a project, not necessarily the furtherance of the organisation – although this of course may happen through the successful completion of the work.

The *espida* model is primarily a method for the creation of business cases. The model allows proposers of business cases to communicate in a framework that is bound by the objectives of the organisation. This model therefore fits perfectly within the PRINCE 2 methodology. "A PRINCE2 project is driven by the project's business case which describes the organisation's justification, commitment and rationale for the deliverables or outcome" (www.ogc.gov.uk/prince2/). The *espida* Approach can be used to inform the creation of the business case.

The Approach that *espida* has developed begins by defining the objectives of an organisation from four perspectives: customers, business processes, innovation and learning of the organisation, and the financial situation. It then asks that project proposals be made through alignment with these objectives. Through this articulation of the project's benefits and disbenefits against organisational aims, decision-makers and proposers can ensure that the project will benefit the funding organisation rather than that it will be 'completed'.

Risk is a major factor in projects (and dealt with in PRINCE2). The *espida* Approach explores risk from the angle of benefits to the organisation, rather than the risks of completing the work (which are two very different perspectives). The first looks at, for example, the likelihood of negative publicity arising from a project. The second is far more internal and introspective and could ask; what is the likelihood of the project manager leaving and how would it be addressed? Both types of risk must be defined, but it in our experience it is the risks of project completion that are predominantly focussed upon. Understanding the wider risks can help to maximise benefits for the organisation.

This alignment of a project's benefits and disbenefits with organisational objectives and the descriptions of the likelihood of them coming to pass offer an organisational context for the PRINCE2 methodology and keeps the project committed to benefiting the sponsoring organisation.

Once the project is initiated, the *espida* Approach can again help inform the PRINCE2 method. The creators of a business case in the *espida* model must define how they and senior management will know when the proposed benefits and disbenefits have come to pass – an indicator of achievement. This indicator can then be used to track the performance of the project during its lifetime and would be part of the regular review of the business case objectives which is part of the PRINCE2 method.

Diagram 1: How *espida* aligns with PRINCE 2

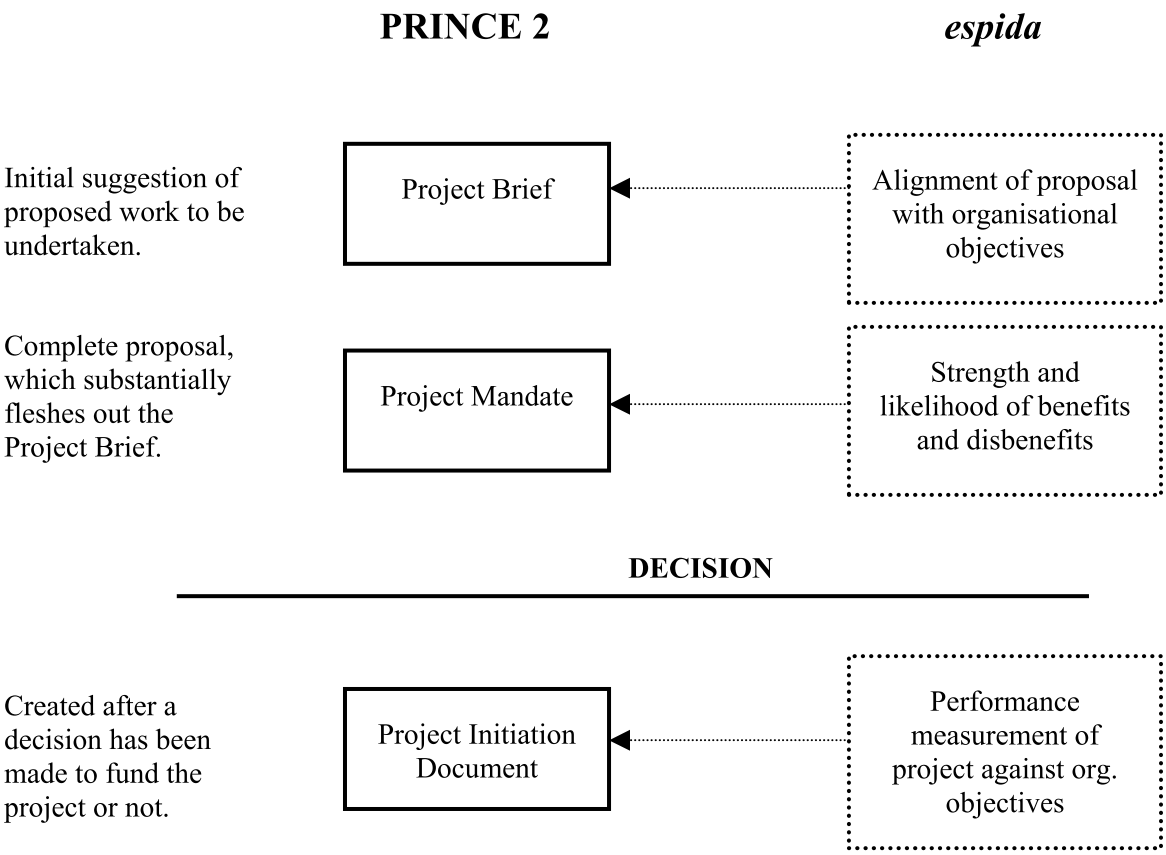


Diagram 2: PRINCE 2 process in detail with *espida* feed-in

Project Brief (PB)

espida feed-in

Project Brief (*italics* indicate also included in PM)

- Background
- Project definition
  - *Objectives*
  - *Scope*
  - Outline deliverables/desired outcomes
  - Exclusions
  - *Constraints*
  - *Interfaces*
- *Outline business case*
  - *How project supports business strategy, plans or programme*
  - *Reasons why project is needed*
- *Customer quality expectations*
- Acceptance criteria
- Known risks

Pre-project

Project Mandate (PM)

Decision

Start-up

Project initiation

Project Initiation Document (PID)

Appendix 5: Case Studies

As part of the development process of the *espida* Approach and as an aid to a deeper understanding of the work, a number of case studies were undertaken.

The process of carrying out the case studies tested the Approach and ensured that all the relevant characteristics of outcomes were communicated and the perspectives and elements captured every angle of the proposal. Various issues revealed during their creation fed directly into developing the Approach further and some remaining potential pitfalls are discussed above.

The aims of the following case studies are to demonstrate how the *espida* Approach can be used in different scenarios and to explore some examples that may hold some resonance for areas within HE/FE.

The studies were created with the help of stakeholders within and external to the University of Glasgow. For the Institutional Repository study for example, the Project Team that had developed the University's own repository helped explore the benefits and dis-benefits that can arise from setting up a repository to manage and disseminate academic outputs. In addition the costs within the study are pulled from an example in Edinburgh University Library.

The eTheses study examines how three different options can be appraised using the Scorecards. By presenting the options together, decision-makers can quickly compare the three options and understand the risks and benefits of each.

The final study looks at the cataloguing of archival holdings of a museum. This was developed with the help of external experts and offers a rich example, where benefits are quite slow to be realised.

The studies, while based in part on real-life scenarios, are not actual business cases and meant for explanatory purposes only.

Appendix 5a: Institutional Repository Case Study

Scope of the Study

The scenario of this study is the creation of a business case for funds to build an Institutional Repository within a Higher Education institution. The business case is to be presented to the Senior Management Group within the University, and if successful, the repository is to be implemented and managed by the University Library and IT Services department. Content of the repository is to be restricted to peer-reviewed published materials.

The study deals with the specifics of a proposal, rather than generalities and lessons. That is, the study could have been used to explain how to go about filling in the scorecard and the various issues associated with finding indicators or describing aspects. It was decided though, that a demonstration of an actual proposal with definite aspects and specific indicators would be of more use.

Discussion on the Outcome Scorecard

Customer Perspective

A prominent feature of an institutional repository is the access it offers the public. Open access itself is not a benefit nor a positive outcome, but rather a means of achieving benefits, so this perspective focuses heavily on benefits that can be derived from this access.

The two positive outcomes are the opportunity for cultural engagement of the community and an increase in the reputation of the institution through higher exposure of academic papers. To define these outcomes fully, the indicators must be carefully framed. While metrics such as the number of external users of the repository indicate usage of the repository, they do not assess engagement with the work, nor any increase in reputation. For the enrichment of culture and community two outcome indicators are suggested: non-academic usage of the repository numbering 1,000 per month, with an additional increase in correspondence from members of the public.

For an increase in recognition of the University brand and reputation a good indicator would be a growth in the use of University staff as experts by the media at the same time as an increase in invitations to speak at conferences. While a definite figure of increase possibly could be given for both of these indicators, it would be difficult to gauge such a figure and find a strong precedent on which to base it. It is likely that any increase would be welcomed by senior management and so it is left as 'an increase'. Growth would be benchmarked against a snapshot taken before implementation of the repository.

Such indiscriminate access to academic outputs does bring the possibility of negative outcomes. There is a likelihood that material of a sensitive nature could be made available, thus impacting on the reputation of the University and confidence in its brand. While a well-managed repository would have processes in place to ensure sensitive materials would not be released, indicating the negative outcome allows any fears that the decision-makers may have to be allayed. Indicators for this are defined as an increase in complaints to the University referencing pieces of academic output.

Business Process Perspective

There are possible benefits that come under this perspective, and in some of the early iterations of the scorecard they were indeed incorporated. These outcomes came under ‘effectiveness of decision-making’, where the IR would help manage some of the academic output of the University, and the concept of corporate memory which would benefit ‘information accessibility’. However, during the refinement stage it was felt that including them in the scorecard, overstated their importance, which in turn detracted from the primary outcomes under the customer and external stakeholder perspective. This decision may differ in other organisations.

Innovation and Development Perspective

The motivation and satisfaction of staff will change for the better with the implementation of the IR, at least, there is a high chance of this change. Monthly figures of the number of downloads of their work will give insight to staff about usage of their work and hopefully increase their satisfaction –this type of feedback is practically impossible in journals. The converse of this is the time that academics may have to spend depositing their materials, which will act as a de-motivator. Indicators of these outcomes are an increase in downloads of papers (which are the figures that the staff will receive) supplemented by the negative results of annual surveys about the repository.

It is thought that the IR will encourage trans-disciplinary working within the University, as well as collaboration across institutional boundaries. Access to the IR will allow for both deliberate and serendipitous discovery of opportunities for this collaboration. This is made more likely as metadata from the IR will be harvested by search engines such as Google. The increase of intellectual capital through new collaborations can be indicated by keeping figures on multi-departmental papers and multi-institution papers (part of the metadata captured at deposit) benchmarked against current collaboration figures.

Financial Perspective

There are very few positive outcomes identified in the financial perspective, as the IR will not be used to generate income, nor indeed will it save money for the University.

A final note is that only five of the twenty-two elements are used in this study. There is no attempt to find ‘spurious’ or indirect benefits under the other seventeen elements. This keeps the business case clear and unambiguous.

Customer and External Stakeholder Perspective

The contribution that will be made to satisfying the needs and aspirations of a wide range of types of external stakeholder and thereby enhancing the reputation and standing of the University.

	Contribution to:	Outcome	Outcome Indicator How will you know that it has happened?	Category	Likelihood	+ / -	Timescale	Longevity
C1	Enrichment of local, national and international culture and community and a reflection of these within the University	Giving increased access to the public	- External users of the repository reaching 1,000 per month. - Increase in correspondence from members of the public.	S	Probable	+	short	Long-term
C2	Recognition of, and confidence in the University's brand and a reputation as being among the best Universities in the world.	Higher profile of Glasgow research	- Increased use of Uni. staff as experts by the media. - Increase in invitations for staff to speak at conferences.	P	Med	+	short	Long-term
		Exposure of contentious or controversial materials	- Increase in complaints to the University citing academic output	P	Low	-	short	Relatively short
C3	Strong customer satisfaction and high quality service delivery (students, parents, public, etc.)							
C4	Academic attractiveness to potential students, staff, academic partners and funding agencies							
C5	Commercial attractiveness to potential sponsors and collaborators							
	EVALUATORS' SUMMARY	The repository seems to have achievable benefits for the University's exposure in the world academic market. Should also help us achieve some engagement with external community.						

Internal Business Process Perspective

The contribution that will be made to the way that the University does things and its capacity to change and/or expand to take advantage of new opportunities.

	Contribution to:	Outcome	Outcome Indicator How will you know that it has happened?	Category	Likelihood	+ / -	Timescale	Longevity
P1	Information accessibility and open communications with staff and customers							
P2	Operational efficiency and productivity (within existing resources)							
P3	Effectiveness of decision making and responsiveness of leadership							
P4	Process potential and organisational flexibility to take advantage of future change							
P5	Compliance with legislation and regulation							
	EVALUATORS' SUMMARY							

Innovation and Development Perspective

The contribution that will be made to the intellectual capital of the University and to a working environment in which the generation of new ideas is the norm for both individuals and groups.

	Contribution to:	Outcome	Outcome Indicator How will you know that it has happened?	Category	Likelihood	+ / -	Timescale	Longevity
I1	Intellectual capital of staff and the organisation through internal generation or external procurement	Transdisciplinary collaboration and multi-institution collaboration fostered.	- 10% rise in number of papers that are from multi-departments (benchmarked from the number of multi-departmental publications at the moment). (Over 5 years) - Rise in multi-institution papers.	P	Med	+	Mid	Long-term
		Plagiarism more of an issue	- Increase in materials found through JISC's plagiarism software.	P	Low	-	Mid	Short term
I2	Motivation, fulfilment and satisfaction of staff and development of a climate of continuous improvement	Work more widely disseminated, leading to a more positive impression of impact of academic work.	- Increase in views of authors' works (use indicator in I3). - Positive response in annual survey.	P	Probable	+	Short	Long-term
		Time spent on deposit demoralising staff.	- Decrease in materials being deposited. - Increase in complaints about time spent depositing.	S	Probable	-	Short	First year only
I3	Quality and potential of research activities and outputs	Increased academic visibility	- Measure of hits for papers in the repository (compare with readership stats of journals they publish in if possible) - An average of 500 views for each piece of work in the repository after a year in the repository.	P	Probable	+	Short	Long-term
I4	Quality and potential of teaching							
I5	Responsiveness to change (flexibility and ability to manage change)							
	EVALUATORS' SUMMARY	Is this a viable way to encourage collaboration? Visibility is good, but are there figures breaking down the readership?						

Financial Perspective

The contribution that will be made to the 'bottom line' of the University, either through revenue generation or savings in operating costs.

	Contribution to:	Outcome	Outcome Indicator How will you know that it has happened?	Category	Likelihood	+ / -	Timescale	Longevity
	Income Generation through:-							
F1	selling assets							
F2	licensing/rights to assets							
F3	teaching and research							
F4	contracts, grants, fees, donations							
	Cost Saving in relation to:-							
F5	labour, time							
F6	space							
F7	direct expenditure							
	EVALUATORS' SUMMARY							

Costs for the Institutional Repository[15]

Type of cost	*Amount*	*Basis of Costing*[3]
Capital[1]		
Equipment	18,506	5 years at 3,701 (2 servers and red-Hat licence)
Space/building modification		
Assets/resources/materials		
Sub-total	18,506	
Revenue		
Equipment Maintenance Facilities Rentals/access fees		
Staffing		
System Developer	56,512	(Grade X) 1 year at 0.8 FTE, 1 year at 0.5 FTE and 3 years at 0.3 FTE
Liaison Officer	106,022	(Grade X) 5 years at 0.8 FTE
Metadata Editor	19,611	(Grade Y) 1 year at 0.1, 1 year at 0.3, 1 year at 0.5 FTE
Management	18,318	(Grade Z) 5 years at 0.07 FTE
Overheads Further breakdown if necessary (FEC)…		
Sub-total	200,463	
TOTAL	**218,969**	

[15] These costs are taken from John MacColl's presentation 'Financial Aspects of Institutional Repositories' given at Open Scholarship 2006 (http://www.lib.gla.ac.uk/openscholarship/).

Appendix 5b: eTheses Case Study

Scope of the Study

This case study examines the benefits of two different methods of exposing doctoral theses to the wider academic community. The first option is to do nothing and accept only bound paper versions of the theses and use inter-library loans to access theses from other institutions. The second option is for the University to switch to electronic deposit of theses rather than paper deposit. The third is to sign up to a centralised, online service being developed by the EThOS project (www.ethos.ac.uk). At the heart of the service is a repository of electronic theses submitted for examination in Higher Education Institutions across the UK. The primary aim of EThOS is to re-structure the current process of delivering eTheses to institutions. It will be able to immediately deliver electronic versions of theses. Where institutions do not have electronic copies, the service will digitise them.

Signing up to the EThOS service will offer repository space for those institutions that do not already have an eTheses repository, guidance on setting up individual repositories and a harvesting service to collect discovery metadata from repositories in Institutions already with eTheses.

The study rests on whether theses have a reuse value beyond their use in examination.

The three options are:

1) Not doing anything
2) Using an existing Institutional Repository for eTheses
3) Signing up to full EThOS service

Option 1 is not explicitly detailed in the scorecard. This is because it is the status quo, and the Scorecard is demonstrating changes to the status quo.

Discussion on the Outcome Scorecard

Customer Perspective

There are a number of outcomes under the customer perspective as students are classed as customers of the University.

Both option 2 and 3 are fully open access repositories and therefore offer potential for wide dissemination of the students' theses. There is therefore a chance that the community can benefit from engaging with the output. However, this likelihood does appear to be rather low for Option 2 as no work will be undertaken to advertise the theses and their availability. Option 3 has a slightly higher likelihood since the EThOS service will be carrying out a lot of advertising with the potential for exposure in national media.

As with all indicators, those for the contribution to the 'global knowledge pool' need to be able to demonstrate a good return to the decision-makers, but not be too expensive to collect so as to make them counter-productive. While detailed statistics on usage will not convey any actual contribution to this knowledge pool, they will show whether or not interest in the theses increases, and if the relevant institution is playing a role in it. As this is an additional outcome, the indicator is relatively lightweight, and not a direct measure of engagement, but rather of numbers of non-academics using the service.

The University brand and reputation could be affected by both options – the materials in both repositories will be branded as originating at the University. The potential is that the quality of Glasgow's doctoral students will be showcased. A definite percentage increase of views of theses will measure this higher profile.

Certainly the existence of either option 2 or 3 will be a welcome addition for students completing doctorates. It gives their work potential to reach a far wider audience and be discovered more readily than the traditional paper copies deposited in the library. Surveys of graduating doctoral students will be used to collect information on the success of this outcome.

Internal Business Process

There are no outcomes from the perspective of the internal business process. There are possible time savings of certain processes, but these are mentioned from the view of the financial perspective.

Innovation and Development

Attitudes and working practices of academics create a division in this perspective. Who will reuse the theses and are they of value? While the EThOS service and Universities can set up repositories for eTheses, they cannot dictate a cultural shift in the uses of theses. Only academic communities can do this. The outcomes in this perspective depend on whether academics would use theses if they became readily available, or if they only see a thesis as a means to an end. If it is the latter, then submission of theses in a suitable form will be low, placing the institution's agreement at risk, or at least, making it pointless.

The flip side is that academic staff wholeheartedly embrace the concept of widening access to their students' theses. This side sees reuse value and argues that theses are not cited terribly often at the moment mainly because of discovery and access issues.

Both of these outcomes will have major effects on the validity of the services offered and therefore are classed as primary – if staff do not see use for this service, this dissatisfaction will be passed on to students who will not deposit. The indicators are therefore internal staff usage of the service, the number of deposits by students (by department) and staff surveys.

Financial

This is where the principle difference between the two options (apart from the cost) arises. Option 3 offers the chance for all theses held by the University to be digitised. The potential space savings could therefore be large. In the scenario for the case study we do not envisage the University digitising any theses, rather the repository will be populated with theses submitted after its creation. The space saved by option 2 will therefore not be as great.

Option 3 also offers the potential of cutting the time that staff spend on creating and processing Inter-Library Loans for theses in other institutions.

Customer and External Stakeholder Perspective

The contribution that will be made to satisfying the needs and aspirations of a wide range of types of external stakeholder and thereby enhancing the reputation and standing of the University.

	Contribution to:	Option	Outcome	Indicator How will you know that it has happened?	Category	Likelihood	+/-	Timescale	Longevity
C1	Enrichment of local, national and international culture, the community, and a reflection of these within the University	2	Fully open access repository, therefore transparency of outputs	Detailed usage statistics of non-academic usage	Additional	Low	+	Mid	Long-term
		3	Fully open access repository, therefore transparency of outputs	Detailed usage statistics of non-academic usage	Additional	Med	+	Mid	Long-term
C2	Recognition of, and confidence in the University's brand and a reputation as being among the best Universities in the world.	2	The repository will be a showcase of the quality of PG education in the University.	100% increase in numbers of views of theses (benchmarked against current usage)	Primary	Probable	+	Mid	Long-term
		3	Higher profile of Glasgow theses (branded in the EThOS service)	100% increase in numbers of views of theses (benchmarked against current usage)	Primary	Probable	+	Mid	Long-term
C3	Strong customer satisfaction and high quality service delivery (students, parents, public, etc.)	2	Student satisfaction with potential of higher profile work	Positive feedback in surveys of users	Primary	Probable	+	Mid	Long-term
		3	Student satisfaction with higher profile for work	Positive feedback in surveys of users	Primary	Probable	+	Mid	Long-term
C4	Academic attractiveness to potential students, staff, academic partners and funding agencies								
C5	Commercial attractiveness to potential sponsors and collaborators								
	EVALUATORS' SUMMARY								

Internal Business Process Perspective
The contribution that will be made to the way that the University does things and its capacity to change and/or expand to take advantage of new opportunities.

	Contribution to:	Option	Outcome	Indicator How will you know that it has happened?	Category	Likelihood	+/-	Timescale	Longevity
P1	Information accessibility and open communications with staff and customers								
P2	Operational efficiency and productivity (within existing resources)								
P3	Effectiveness of decision making and responsiveness of leadership								
P4	Process potential and organisational flexibility to take advantage of future change								
P5	Compliance with legislation and regulation								
	EVALUATORS' SUMMARY								

Innovation and Development Perspective

The contribution that will be made to the intellectual capital of the University and to a working environment in which the generation of new ideas is the norm for both individuals and groups.

	Contribution to:	Option	Outcome	Indicator How will you know that it has happened?	Category	Likelihood	+/-	Timescale	Longevity
I2	Motivation, fulfilment and satisfaction of staff and development of a climate of continuous improvement	2	Staff value eTheses	- Positive response in staff surveys - High number of deposits per faculty as a percentage of graduations - Increase in internal staff usage of the service.	Primary	Med	+	Short	Long-term
		2	Staff do not value eTheses	- Negative response in staff surveys - Low number of deposits per faculty as a percentage of graduations - No, or little use by staff of the service.	Primary	Med	-	Short	
		3	Staff value eTheses	- Positive response in staff surveys - High number of deposits per faculty as a percentage of graduations - Increase in internal staff usage of the service.	Primary	Med	+	Short	
		3	Staff do not value eTheses	- Negative response in staff surveys - Low number of deposits per faculty as a percentage of graduations - No, or little use by staff of the service.	Primary	Med	-	Short	
	EVALUATORS' SUMMARY								

Financial Perspective

The contribution that will be made to the 'bottom line' of the University, either through revenue generation or savings in operating costs.

	Contribution to:	Option	Outcome	**Indicator** How will you know that it has happened?	Category	Likelihood	+/-	Timescale	Longevity
	Income Generation through:-								
F1	selling assets								
F2	licensing/rights to assets								
F3	teaching and research								
F4	contracts, grants, fees, donations								
	Cost Saving in relation to:-								
F5	labour, time	3	Staff time spent on ILL decreases	No staff time used to administer ILLs for theses (current time is 20% of all ILLs)	Primary	Med	+	Mid	Long-term
F6	space	2	Physical shelf space. No more expansion of space needed for theses.	No increase in shelf space for theses.	Primary	Probable	+	Short	Long-term
		3	Physical shelf space. Decrease in shelf space as older theses are digitised and paper de-accessioned.	Metres of shelving used for Theses decreased by 80%	Primary	Probable	+	Mid	Long-term
F7	direct expenditure								
	EVALUATORS' SUMMARY								

Appendix 5c: Museum Archival Collection Case Study

Scope of the Proposal

The proposal is to catalogue the archival holdings of a museum, which are predominantly in manuscript form. Only a small proportion currently have electronic catalogue records beyond box level. The archival collections are of such a size that the project is likely to be carried out in prioritised phases over a ten-year period. Catalogue records will be available for searching online and certain parts of the collection will also be digitised to provide a richer discovery and learning experience for users.

Discussion on the Outcome Scorecard

Customer and External Stakeholder Perspective

The cataloguing of the archival collection will make the majority of materials directly discoverable by members of the public for the first time. There is a high likelihood that this will in turn encourage greater use of the archival holdings by members of the public – numerous examples support this outcome. Keeping catalogue and other usage data will demonstrate the popularity of the resource as it grows in coverage and depth, and the outcome it is likely to have, for instance, on the number of enquiries about the archival holdings and numbers of visitors to the museum wishing to consult archival materials. Such indicators will show the extent to which the museum's target communities have engaged with the archival collections. To achieve comprehensive coverage of collections (i.e. high percentage of archival materials included in the online catalogue) within a reasonable timescale, some compromise on levels of detail, checking of factual accuracy and authority in the catalogue records will be required. The museum runs the risk of public trust in its authority being eroded if any inaccuracies are exposed or the authority of a record challenged as a direct result of making the records publicly accessible. While the likelihood of this outcome is low, the category of outcome is primary as any loss of trust among key audiences would be a blow to the institution. This potential outcome could be felt relatively quickly if materials of high current interest were prioritised for cataloguing.

Internal Business Process Perspective

The expansion of the museum catalogue to cover archival materials is recognition of the value of the assets that it will record: they are important and should be made accessible to the public. From the museum staff perspective, a more comprehensive electronic catalogue of collections will allow improved collections management, which is likely to lead to better care of the collections and the inclusion of a wider range of archival items in exhibitions and research outputs.

Innovation and Development Perspective

Improved online access to a wider range of catalogued archival materials will bring the collections into use in outreach, lifelong learning and education programmes undertaken by the museum, and in research undertaken internally and externally.

Lifelong learning, education and research are at the heart of the museum's mission, and are therefore of primary importance. Indicators include records of inclusion of archival materials in education and other programmes and feedback from programme participants, educational and other staff on their experience of using the resources. For research, the indicators must reflect both the internal and external nature. Internal research drives exhibitions, understanding and interpretation of museum collections, while use of the collections by external scholars and other researchers enriches and extends their research. The number of scholars and other researchers using the materials will be logged and, where possible, citation in publications and other research outputs noted.

The expansion of the online, publicly accessible catalogue to include a growing proportion of the museum's archival holdings, enabling the introduction of a range of enhanced search and discover options for online users and visitors, is likely to have an effect on staffing models, competency and skill requirements. The potential negative outcome in this perspective is an apparent down-skilling of staff (also discussed under the Financial perspective) with less emphasis on curatorial and in-depth subject expertise. The effect on staff moral may lead to deteriorating management – staff relations and unwillingness to embrace innovation.

Financial Perspective

Wider exposure of manuscript and other archival assets will have the potential to bring a modest degree of financial return to the museum through the sale of reproductions. There are likely to be increased opportunities for licensing reproduction rights to some of the material and this would be a primary outcome of the cataloguing work.

Savings in staff time will be a long-term effect of the cataloguing work, with the increased potential for user-directed search and discovery and enquiries being dealt with more quickly. There is also the potential for savings through the lowering of professional knowledge and skill levels among staff (the inverse of this outcome arises under the Innovation and Learning perspective).

Customer and External Stakeholder Perspective

The contribution that will be made to satisfying the needs and aspirations of a wide range of types of external stakeholder and thereby enhancing the reputation and standing of the Museum.

	Contribution to:	**Aspect**	**Outcome Indicator** How will you know that it has happened?	**Category**	**Likelihood**	**+ / -**	**Timescale**	**Longevity**
C1	Enrichment of local, national and international culture, the community, and a reflection of these within the Museum	Expose significant collections to view and therefore give 'ownership' to the community and encourage use.	- Use of catalogue records - Use of the museum holdings increases (measured through geographical indicators, etc.) - Enquiries about collection increases	P	High	+	Medium	Long-term
C2	Recognition of, and confidence in the Museum's brand and a reputation as being among the best Museums in the world	Potential for erosion of trust in the Museum's knowledge and expertise if catalogue records expose inaccuracies or challenges to interpretation	- Adverse press or public comment - Harder to attract sponsorship	P	Low	-	Short	Short-term
C3	Strong customer satisfaction and high quality service delivery	Change completely the way users search, discover and use the collections	- Online catalogue user survey - Usage stats on catalogue and digitised resources	P	Med	+	Short	Long-term
C4	Commercial attractiveness to potential sponsors and collaborators							
	EVALUATORS' SUMMARY							

Internal Business Process Perspective

The contribution that will be made to the way that the Museum does things and its capacity to change and/or expand to take advantage of new opportunities.

	Contribution to:	Outcome	Outcome Indicator How will you know that it has happened?	Category	Likelihood	+ / -	Timescale	Longevity
P1	Information accessibility and open communications with staff and customers							
P2	Operational efficiency and productivity (within existing resources)	Collections management gains/improved care and mining of collections	- Extended scope & content for museum exhibitions - Increased conservation/ preservation activity in relation to archival collections	Primary	High	+	Medium	Long-term
P3	Effectiveness of decision making and responsiveness of leadership							
P4	Process potential and organisational flexibility to take advantage of future change							
P5	Compliance with legislation and regulation							
	EVALUATORS' SUMMARY							

Innovation and Development Perspective

The contribution that will be made to the intellectual capital of the Museum and to a working environment in which the generation of new ideas is the norm for both individuals and groups.

	Contribution to:	Outcome	Outcome Indicator How will you know that it has happened?	Category	Likelihood	+ / -	Timescale	Longevity
I1	Intellectual capital of staff and the organisation through internal generation or external procurement							
I2	Motivation, fulfilment and satisfaction of staff and development of a climate of continuous improvement	Down skilling of staff taken to be negative management policy	- Reduced willingness to work extra hours. - Increase in staff on lower grades	Sec	Low	-	Med	Short-term
I3	Quality and potential of research activities and outputs	Beneficial outcome on scope and quality of research. Increase in museum's research and research undertaken by external scholars.	- Museum research references/uses of archival collection. - Number of scholars requesting materials increases.	Primary	High	+	Medium	Long-term
I4	Quality and potential of education	Increase in range of materials used in education, outreach and other museum programmes.	- New materials successfully incorporated into education and other outputs - Positive feedback from programme participants, education and other staff	Primary	Med	+	Medium	Long-term
I5	Responsiveness to change (flexibility and ability to manage change)							
	EVALUATORS' SUMMARY							

Financial Perspective

The contribution that will be made to the 'bottom line' of the Museum, either through revenue generation or savings in operating costs.

	Contribution to:	Outcome	Outcome Indicator How will you know that it has happened?	Category	Likelihood	+ / -	Timescale	Longevity
	Income Generation through:-							
F1	selling assets	Additional outcome on selling images	- 2% Increase in sales over 3 years	Secondary	Low	+	Medium	Long-term
F2	licensing/rights to assets	Beneficial to licensing activity	- 10% increase in licensing revenue over 3 years	Primary	Medium	+	Medium	Long-term
F3	education and research							
F4	contracts, grants, fees, donations							
	Cost Saving in relation to:-							
F5	labour, time	Savings in time	- Quicker turn around for enquiries/shorter time to completion	Primary	Med	+	Med	
		Savings in staff skill requirements	- Increase in lower grade staff.	Sec	Low	+	Long	
F6	space							
F7	direct expenditure							
	EVALUATORS' SUMMARY							

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