apm

How can we hand over projects better?

THE **CHARTERED BODY** FOR THE
PROJECT PROFESSION

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Executive summary

Not all projects hand over successfully. This is frequently attributable to many factors. The purpose of this research is to draw from the experience of previous projects, identify both pitfalls and good practice and distil them into guidance that practitioners can adopt for their own projects. Learning these lessons helps to mitigate the risk of poor handovers and improve the likelihood of a successful project handover.

> "Defining handover is necessary to ensure all parties have an agreed focal point and their efforts are aligned to a common goal"

Defining handover is necessary to ensure all parties have an agreed focal point and their efforts are aligned to a common goal. Dates, priorities and responsibility allocation must be clearly communicated. Assumption of these can put handover at risk. Understanding that handover is a transition period rather than a date is paramount to smooth the change curve and close the gap between project phase and operational/business as usual.

Understanding the need to transfer knowledge and train those who will be 'handed' the project is essential. The following suggestions came from the research to support this:

■ Establish a common data environment.

■ Work with the 'end users' to ensure the right people are being trained at the right time, in the most effective manner, to support the transfer of knowledge and responsibility.

■ Produce documents that are meaningful and useful to the end users.

■ Conduct dry runs to simulate the operational phase.

The research conclusions provide 12 recommendations that have been split into four subcategories, shown on pages 13 and 14.

1. Introduction

Handing over projects from the project phase to the business as usual environment is often perceived as the end of the job by project practitioners and the start of the job by the end users who will be assuming the management responsibility afterwards. The output of this research is to capture lessons learned and success factors from projects that have completed that transition (some more successfully than others) and share these with the project management community in the hope that it will help more projects to handover successfully. These have been split into sections that consider:

1. The importance of defining handover
2. Lessons learned from previous projects
3. Training and development
4. Recommendations split into four categories:
   i.   Commercial/contractual
   ii. Process
   iii. Data and knowledge transfer
   iv. People

2. About the research

"Much work has been done to try to establish good, transferable and consistent practices to ensure the project is managed in a way that increases the likelihood of positive outcomes"

The starting point of this project research is witnessing first-hand the inconsistency in transitioning from project phase to the business as usual activities and the impact this has on the ability of the end users to realise the benefits of the project when done badly. The intention is to provide advice and guidance for project management practitioners to support the planning and management of this transition in a way that improves the chances of realising the benefits once in business as usual. Consider project delivery as an enabler of benefit delivery and focus on Warren Buffett's famous quote "Price is what you pay. Value is what we get."

Having worked on both sides of the fence in regards to project delivery – as a client-side project manager who is tasked with getting the supply chain to produce what is needed, and from the delivery side where you are tasked with satisfying the client's requirements – in my experience, most project teams want to deliver the project successfully, no matter which hat they are wearing. Much work has been done to try to establish good, transferable and consistent practices to ensure the project is managed in a way that increases the likelihood of positive outcomes. However, there is less embedded thinking in practitioner practice around how we ensure that, once the project has been delivered, it is then handed over to whoever has commissioned the project and left in their care to derive the value and benefits.

Traditionally and typically, project teams, including project managers, are not involved for any length of time beyond the handover of the project. There are many reasons for this, the main one being that in its very definition as a transient endeavour with defined end points, a project is something that is often packaged up and costed at strategic commissioning level with a project team being brought in to deliver it then quickly move to another project. However if this handover is too abrupt or imperfectly executed or if the client/end user is not ready organisationally, strategically or culturally for the change facilitated by the project, the chance of realising the benefits the project was commissioned to deliver in the first place greatly reduces.

Building on existing research

Not all projects hand over successfully. If we can improve handover, we can increase the chance of delivering the benefits (the 'Why?' of all projects), reaffirm the value of project management to those who employ us, and maximise the return on investment for the vast sums of money that are being spent on commissioning projects. The Latham report[1], which looked at procurement and contractual arrangements in the UK construction industry, targeted savings of 30 per cent on the real cost of construction if the proposals in the report were all to be enacted. A large amount of research and good practice guidance is available, looking at the role of the client, how to initiate projects properly, how to manage their delivery through the project phase and how to derive benefits. The literature reviewed for this research feeds into the findings. However, the intention going into the research was not to produce an academic paper but to learn from the experience of others, to provide practical and implementable steps that help to support the transition from project delivery to business as usual. By focusing on handover there is an inevitable requirement to look either side of the point of handover. However, this is beneficial and supports the approach of not focusing in a blinkered manner at the day and date of the handover, but rather promoting the idea of transition. Just as the project phase should not be viewed in isolation, neither should handover.

The approach has been a three stage process:

1. A literature study of articles written about project handover to build up a list of assumptions of good practice (see Appendix 1).

2. A survey, issued to all of APM via social media and the APM website, as well as contacts beyond the project management community, to test the theories put forward in stage one above. The approach of the survey was to seek agreement or disagreement to statements in projects that have been deemed successful. For example: "Do you agree that in a successful project you have been involved with you have always done...". To date there have been 25 responses to this survey.

3. Eighteen interviews, conducted with key individuals who have worked on projects and programmes of varying sizes, complexity and in different sectors. The list of interviewees can be found in the 'Acknowledgements' section on page 3.

[1] **Latham, M. (1994),** *Constructing the Team*, **London: HMSO.**

Aim

The intention was to find common and emergent themes that are not limited to projects of certain value or in certain fields, hence the mix of types and sizes of projects represented in the list on page 3.

What is handover?

The *APM Body of Knowledge 6th edition* defines handover as: "The point in the life cycle where deliverables are handed over to the sponsor and users."

PRINCE2® states: "The project should have a clear end with a correct handover of information and responsibility."

"The project should have a clear end with a correct handover of information and responsibility"

Taking these definitions as a start point, defining handover is crucial both in relation to this research and in helping to manage it properly. In construction it might be practical completion. It might also be the end of the defects and liability period (essentially the first year's warranty period of a building). It could be when the on-site support from the project team leaves site, when there are no more snags noted on the snagging list and all are signed off as complete, or once the last of three post-occupancy evaluations is completed. It could be when no members of the project team are involved on a scheme anymore and the project has completely transitioned to business as usual operations. Perhaps it is financial close, or it might even be argued that it is when the benefits established at the outset have been delivered (which could be when the project deliverables have completed their lifespan and been decommissioned). The crucial requirement is to agree in advance and ensure all parties are working to the same definition and understand their responsibilities accordingly.

"There can be a tendency in project delivery to take a midwifery approach of passing the child on at birth and wishing the parents good luck"

A lack of clarity around the definition is frequently exacerbated by the fact that most people working on a project will have a clear idea in their head as to when they think the project hands over, but it is highly likely that if you asked all the stakeholders on your project when the project handover was and what that means, you might get different answers. None of the answers listed above are wrong per se. The problem it highlights is that key project team members might be working to different goals. Handover therefore needs to be considered as a process not a date and the natural inclination to focus on date must be fought. There can be a tendency in project delivery to take a midwifery approach of passing the child on at birth and wishing the parents good luck. This places the benefits realisation very much at risk because it does not focus on preparing the client/end user for their responsibilities and change requirements in order to fulfil these benefits. Pre-handover preparation and post handover support form a key part of transition preparation.

3. Findings

The recommendations noted in this section have been split into four stages of the project life cycle for simplicity:

- Front
- Middle
- End
- Continuous

> "If a project manager inherits a project during delivery, there may still be an opportunity to consider 'front end' recommendations or at least ask some strategic questions that will support the handover"

These are crude categorisations but deliberately so. Projects are delivered using different methodologies and the recommendations need to be transferable. They also need to be sufficiently flexible to support stage reviews and 'sense checks'. The intention is to promote planning for handover from the very start, and the recommendations should not be considered as gateways that cannot be considered beyond their stage. If a project manager inherits a project during delivery, there may still be an opportunity to consider 'front end' recommendations, or at least ask some strategic questions that will support the handover. Consider the recommendations as a way to carry out a handover readiness assessment. The sooner some of the recommendations are enacted, the better the results. Conversely, some recommendations may be better implemented later in the project life cycle, hence the categorisation, but don't become unnecessarily preoccupied with this phasing.

Survey results

Below are the results of the survey, ordered by the amount of consensus agreement in the statement.

28% of the respondents were clients, 36% were contractors and 36% were third-party providers (e.g. consultants).

The respondents answered from the perspective of successful projects they had worked on.

The statements therefore represent factors the respondents agreed or strongly agreed were in place on successful projects they have worked on:

1. The benefits of the project are clearly established, communicated to ALL stakeholders at the outset and MUST be measurable (85% agreed or strongly agreed).

2. Good performance on a project is likely to lead to repeat work for those involved (85% agreed or strongly agreed).

3. The end users are represented on the project team throughout the project life cycle (75% agreed or strongly agreed).

4. Lessons learned from previous projects are reviewed at the start of this project (71% agreed or strongly agreed).

5. Post handover, on-site support from the project team remained for longer than 2 weeks (65% agreed or strongly agreed).

6. Whole life cost is considered when making project decisions (61% agreed or strongly agreed).

7. Training happens in a concentrated period leading up to handover (61% agreed or strongly agreed).

8. Documents produced as handover materials are bespoke to the client on this project (58% agreed or strongly agreed).

9. Knowledge transfer was planned from the start of the project (58% agreed or strongly agreed).

Survey comments

As well as rating their agreement with the statements, the survey gave respondents the option to add comments. This gave them the opportunity to acknowledge that, while they could agree with the statement in relation to a good handover, they could also acknowledge or suggest areas for improvement or share their experience of projects that have handed over less successfully. The following summarises the comments as they relate to the statements:

The benefits of the project are established by the client at the outset and are communicated to the project delivery team in a format that is clear and measurable:
While most of the respondents support the statement, in their comments they note that they do not find consistency in identifying and communicating measurable benefits from project to project. There is a tendency to focus on cost, time and quality rather than the delivery of benefits. This is as much from the perspective of the client as the contractors.

The end users (those who will be using the project outputs once handed over) are represented on the project team throughout the project life cycle
Respondents agreed that end users should be involved throughout, but highlighted difficulties in achieving this. Limiting factors that were presented included:
- the supply chain structure where end users and sub-contractors were kept apart by the mechanisms and hierarchy of contract delivery and reporting;
- the complexity of differentiating between 'end user' and the client representative on the project team where they are not necessarily the same;
- identifying how many end users should be involved and at which stage of the project;
- a lack of continuous commitment from the client side. The approach of scoping at the beginning and coming in at the end to 'receive' the project output is prevalent but not recommended.

Knowledge, experience and lessons learned from previous projects are available and actively reviewed before the commencement of a new project or project stage.
Respondents recognised the value of learning lessons and continuous improvement but almost all of them stated that in practice, the capturing, recording and reviewing of them was inadequately achieved.

Planning for the transfer of project data and knowledge from the project teams to the end users runs from the start of the project throughout the project's lifecycle.
A phased approach of handing over project data and knowledge in a format that is relevant to the end users was advocated, but it was also noted that in practice what often occurs is a data dump leading up to handover as project teams prioritise completing the project and moving onto the next project.

The format and method of transferring project data (e.g. training materials, handover documentation) is tailored to each project (and client) individually.
The comments noted that unless the client specifies their requirements around project data, the documentation is likely to be produced in a standard format that is the same for each project.

End user training is delivered in a concentrated period just before handover.
It was noted that often end user training is viewed as part of project completion and delivered at the end, but phasing would be better.

Financial decisions are made in the context of total cost of ownership/operation over the lifecycle rather than just the capital value of the project itself.
Consideration of whole life cost was noted as 'hard to join up' due to a split of capital and revenue budgets being allocated to different teams or business units. The onus is on the client to understand the benefits of blending capex costs with opex costs.

A member of the project team remains on site and is available post handover for longer than a two-week period.
It was suggested that a barrier to providing support post handover was the additional cost and that it should be discussed and agreed as part of the initial project requirements and subsequently amended as the project progresses if necessary.

Lessons shared – interview results

When collating the interviews it was noted there were lessons learned that have emerged repeatedly during discussions. These take the form of examples of good practice, or lessons learned the hard way due to project failures or pitfalls encountered. They are summarised below in the following recommendations, split loosely by the project stage as noted earlier in this section.

Front End

Below are the results of the survey, ordered by the amount of consensus agreement in the statement.

28% of the respondents were clients, 36% were contractors and 36% were third-party providers (e.g. consultants).

The respondents answered from the perspective of successful projects they had worked on.

The statements therefore represent factors the respondents agreed or strongly agreed were in place on successful projects they have worked on:

- Trimming the wrong costs as a 'value engineering' exercise puts pressure on schedule – need to understand time implication of change as well as financial impact.
- Plan and budget for repeat training and familiarisation once a period of operation has occurred.
- Establish a tiered system of delegated authority for decisions – 'too many cooks' is a risk to the project.
- Establish a responsibilities matrix with ownership and sign off.
- Define operational and maintenance/management concept at the outset.
- A template for how it will work and how it will be looked after needs to inform the spec.
- Plan involvement with maintenance contractors/operators/end user output managers throughout the cycle. Prepare them for the change in their practice as early and effectively as possible.
- The transfer from bid phase to delivery phase is a mini handover in itself and should be planned for in the same way.
- Ensure requirements are specified as deliverables and they are measurable and demonstrable – know how it can be verified that what has been paid for has been delivered.
- Understand and define post-use assessment approach and measurement criteria.

Client role

- Define the client and their role. What organisational change is required of them to support the handover and project delivery? This will likely require the client to create a benefits realisation plan.
- Clients must understand the value and true cost of the project. Too cheap = buying issues. This also encourages the client to consider the benefits they are looking to achieve with the project.
- Understand the separation at client level of funder and end user, should it exist.
- Is the project delivering a new thing or a bigger version of the old thing? Focus knowledge transfer based on the answer.

"The transfer from bid phase to delivery phase is a mini handover in itself and should be planned for in the same way"

"Define the client and their role. What organisational change is required of them to support the handover and project delivery?"

Procurement

- Build engagement models and approach to handover into requirements – specify the training and knowledge transfer requirements at the outset and don't rely on being provided with the industry norm. It may not be appropriate to the end user team.

- Explore financial and contractual models that incentivise delivery of benefits – partnering not punitive.

- Prescribe experience levels of individuals to avoid having bid CVs and then different (less experienced) people provided once the job is won.

- Brief should outline the required benefits, not answer the question for the market.

Middle

- Documentation needs to be meaningful and coherent to the end users, not a data dump in the easiest method possible for the supply chain.

- Populate documentation early and sign off as you go along. Sample check throughout for quality and presentation and feedback any issues.

- Handover is not the time to rewrite the spec, it is signing off what has already been agreed, so ensure the client knows how they will do that (i.e. what metrics they will use) and the contractor knows how they will prove it.

End

- Handover is a process of transition not a date.

- Handover should be preceded by a shadowing period for the end users leading up to the sign off.

- Does the information when added up give an accurate picture of the whole?

- Do not squeeze the commissioning/testing period – buying issues, latent cost and poor performance.

- Knowledge cannot be transferred in a two- day training session across lunch breaks. Clear times in diaries for training.

- Post handover reviews at four months and 11-12 months and then when everything has bedded in. Target new operators initially, then design and calibration later on and finally the design.

- Film training.

- Try for maximum retention of people and skills. Be aware that you won't achieve it – at the end, even a big project is a small project.

- Use commissioning and user acceptance testing as fault finding. Try to make things fail to test that the safety and control systems work. This is the period where the gap between design and operation can be minimised as much as possible.

- Create an operational readiness and a benefits realisation plan.

Throughout

- Standardisation of products – assess when to and when not to. It can limit innovation and increase cost but can reduce the training requirement.

- Communication strategy is essential and this should include a knowledge transfer strategy.

- Promote and incentivise continuity of individuals.

- Lessons learned is constant and iterative – record for future and use pilots and samples as exemplars.

- Project plan must not assume all activities go exactly to plan. To assume every activity goes 100 per cent to time is a fallacy. You will be planning to fail and will lead to rushing the end of the project.

- Demonstrate and incentivise the benefit of effective information exchange with contractors.

- Whole life cost must be considered and targets assigned.

- Risk is priced – does it sit with the correct party? If it's wrongly assigned, the budget is wrong.

- Highlighting failures needs to be positive – dodged a bullet rather than shining a spotlight on poor performance.

- Pit stop with different stakeholder groups – bring specialists together.

- Handover management is underpinned by expectations that have been set.

"Drip feed information in digestible chunks. Avoid death by data"

- Drip feed information in digestible chunks. Avoid death by data.

- Link information exchange and skill transfer to stage boundaries and milestones.

- Always be transparent between parties to promote partnership working ethos.

- Integration to business as usual operations needs to be a key deliverable and a workstream of its own.

- No critical information can be left in the head of an individual.

- Always align deliverables to strategy – is what is being delivered of use?

- Sign off has three facets – work completed, documentation completed and training completed. Do not sign off without all three being completed.

- Simulate using data environment before the project team exits.

Training and development

Training came up repeatedly in the interviews and discussions around handover. How to train is a widely discussed and researched topic in itself, but there were some key takeaways from the research that can be used to support transition as follows:

■ Common data environment. Consider the format and the medium in which information is being transmitted. It is far simpler to request from the outset that information is generated by project teams in a format that the end users are familiar with using and will be maintained and supported as part of the business as usual function. Niche, bespoke or unsupported digital file formats can render the information exchange useless. This can also extend to shared data repositories where information can be uploaded as the project progresses. This enables end users to familiarise themselves with information throughout the project lifecycle rather than just at the end, and reduces the collation effort required by the project team leading up to handover.

■ Readiness to receive training is important. Are the correct people being put forward for training? Are they being asked to squeeze training into an unrealistic window? Are they being asked to assimilate training in a manner that they are unlikely to be able to retain due to the volume, speed or method of delivery? Many of the interviewees suggested filming training, to use in refresher or induction sessions. Training sessions delivered just before handover in a large batch or sessions delivered a long time prior to handover followed by a lull where the trainee is unable to practise what they have been taught are both likely to yield poor results.

■ Meaningful documents. Training documentation should be aimed at those who need training. The length, detail and complexity of the documentation must be considered. Using simple and clear language and keeping documentation as short and succinct as possible is recommended.

■ Dry runs. Simulate operation by getting end users to operate the project output in a controlled environment. Enable practise and simulation to test operation and build end user confidence. Foster a 'hands on' environment of trial and error, testing and fault finding prior to formal business as usual operation.

> "Are the correct people being put forward for training? Are they being asked to squeeze training into an unrealistic window?"

4. Conclusions

The recommendations fall into four broad categories (in no order of importance):

■ **Commercial/contractual**

■ **Process**

■ **Data and knowledge transfer**

■ **People**

In each of the four categories there are three recommendations that emerge from the survey, interviews and literature study as factors that have been in place on multiple projects that have handed over successfully. These are noted on the following pages. Further research would be required to evidence the impact of each recommendation individually and the comments noted in the interview results section below pick up on other variables in addition to these points. Each project is by definition unique and has its own challenges, however the recommendations outlined on the following pages have supported project managers on other projects transition to business-as-usual and as such should be considered lessons learned and fall into the category of 'if you only do three things in each section'.

12 FACTORS FOR THE SUCCESSFUL HANDOVER OF PROJECTS

Commercial/contractual

1. Requirements should be written into tender documentation/contracts in as much detail and as specifically as possible. This should include specifying engagement requirements, data environment and any standardisation of equipment or product that the client requires. The more accurate the specification, the more likely the output to fulfil the needs of the commissioners and the more accurate the costs (unplanned or 'new' workstreams late in the project are unlikely to be commissioned due to the impact on budget). The aim is to ask the right question at this stage rather than specifying the answer – the commissioning needs to support benefits that emerge over the course of the life cycle.

2. Whole life cost must be considered if at all possible. Short-term decisions made to bring down the initial cost outlay can lead to quality, programme and performance issues. All changes need to be considered from a whole life cost perspective as part of their approval process – does spending more now (or not reducing spend by cutting out of the initial spec) have an impact on the overall operating cost of the project throughout its life? This requires the client to have the information to allow them to make such decisions and for this to be auditable.

3. Incentivise success. If a scheme is well delivered, this should reward all parties. Contractual models that promote partnering and commercial arrangements where further opportunities are provided for good performing partners foster collaborative working and mitigate the risk of 'cut and run' scenarios.

Process

4. Handover is a process not a date. Planning for it should be from the start of the project and it should be viewed as an incremental transfer of knowledge and operation from project team to business as usual. Incorporate a series of mini-handovers throughout the project phase (sample rooms, dry runs, simulations, data readiness tests).

5. The benefits and deliverables must be measurable and communicable from the start. Why are we doing this project and how will we know when it is done? 'Softer' benefits are still measurable – such as satisfaction surveys or recruitment and retention data as long as they are benchmarked at the start and targets are set for success criteria. "What gets measured, gets managed".

6. Involve end users from the outset. Through stakeholder analysis, understand who will benefit from the project, who will be required to facilitate the delivery of the benefits and how the project outputs will impact their role. Then integrate them into the project schedule to ensure they are consulted and engaged before it is too late. They may not be required throughout but they should be brought it at key times to support decision-making. The more involved they are, the more they will become project champions moving into business as usual phase.

Data and knowledge transfer

7. Documentation must be written for the end users. It may require different sets of documentation for different users but for documentation to support knowledge transfer it needs to be meaningful, applicable and relevant to the end users. It also should be interesting and readily accessible, if at all possible.

8. Collate lessons learned as the project progresses. It provides more meaningful data for future projects, it can be tied to stage gateways or key deliverables. It also provides a form of decision log and a history of the project written at the time by the people involved. Staff 'churn' results in personnel changes and information can be lost if not recorded as the project progresses.

9. Agree the information requirements at the outset. This ensures all parties have a clear deliverable, know what is expected of them and work towards achieving the goal from the start of project. It avoids abortive work and helps with data and knowledge transfer.

People

10. Get good people on your project and keep them for as long as you are able. Perhaps the most simple and intuitively correct statement, but often overlooked or taken for granted. The project does not exist in stasis and neither do the people working on it. Attempt wherever possible to understand the drivers from outside of the project that could lead to performance levels dipping or people moving on from the project and take steps to mitigate against them. Fight for the project team you want and fight to keep them.

11. Definition of stakeholders should be carried out throughout and in detail. Take time to understand who is impacted by the project and who is needed to make the project a success – not just leading up to the point of transition, but beyond – in the business as usual environment and ensure they are engaged at the appropriate time. Obvious examples on a construction project would be facilities managers and IT support, both roles that may not necessarily be represented by the skillset of the end user rep on a project board but who will be integral to business as usual delivery. Don't assume a single end user representative is sufficient or will yield the best outcomes.

12. The client role is pivotal. Not necessarily in a 'customer is always right' way although that is a factor. In the transcripts of the interviews the word that was most frequently repeated was 'client'. The context changed, in some instances it referred to client engagement, in others design, budget, brief, client-related responsibilities. What frequently happens is that a project team works together to deliver a project for a client or clients and relies on their input at intervals to sign off key decisions and to take receipt of the project outputs at the end. Understanding the project from the client's perspective, being clear on who the decision makers are and how the project fits into the business as usual and overall strategy as well as what benefits the client is looking to achieve in commissioning the project keeps the focus on the key metrics. Working with the client from the outset so they are aware of their responsibilities and how they can help in the development, implementation and transition closes the loop and mitigates against the risk of the 'not getting what was paid for' comment or the client not understanding or preparing for the changes required of them organisationally or operationally to support the handover and subsequent operation of the project outputs.

5. How does this research fit with project management thinking?

The literature review noted in Appendix 1 highlights articles and existing research or works that are pertinent to this research. Focusing on handover inevitably requires a broadening of the view. Many of the pitfalls around failures to handover successfully could be avoided if the project had been initiated differently or if the role of the client were more clearly defined or if a more benefits driven approach were prevalent, to note only a few that have featured most prominently. The areas on the following page are APM's definitions, groups or special interest groups who have a natural overlap with this research but this list in neither exhaustive nor restrictive.

Benefits management

'Benefits management is the identification, definition, planning, tracking and realisation of business benefits.' *APM Body of Knowledge 6th edition*, section 3.2.1

Knowledge management

Knowledge management is the systematic management of information and learning. It turns personal information and experience into collective knowledge that can be widely shared throughout an organisation and a profession.'
APM Body of Knowledge 6th edition, section 1.1.5

Programme management

Programme management is the co-ordinated management of projects and change management activities to achieve beneficial change.'
APM Body of Knowledge 6th edition, section 1.1.2

Porfolio management

'Portfolio management is the selection, prioritisation and control of an organisation's projects and programmes in line with its strategic objectives and capacity to deliver. The goal is to balance change initiatives and business-as-usual while optimising return on investment.' *APM Body of Knowledge 6th edition*, section 1.1.3

6. Appendix – literature review

The following documents/articles were reviewed for this research:

■ 20|20 Business Insight (2015), Project close-out and handover – a general overview. 20|20 Business Insight, Dundee.

■ Association for Project Management (2006) – *APM Body of Knowledge 5th edition*. APM London.

■ APM Governance of Project Management Specific Interest Group (2011) Directing Change – A guide to governance of project management. APM, London

■ BSRIA (2014) Soft Landings Core Principles, BG38/2014 BSRIA Limited, Bracknell.

■ Bradley G (2010) Fundamentals of Benefit Realization. The Stationery Office (TSO), London. Franklin M (June 2008) Focus on Skills: Leadership Skills for Project and Programme Managers. TSO, London.

■ Cabinet Office (2012) Portfolio, Programme, and Project Management Maturity Model (P3M3).

■ Designing Buildings Wiki (2016) www.designingbuildings.co.uk/wiki/Handover_construction_site_to_the_client

■ Egan, J (21 May, 2008). "I'd give construction about four out of 10". Sir John Egan on how the industry responded to Rethinking Construction: full transcript of speech at Commons reception marking 10th anniversary of report.

■ Government Construction Strategy (July 2012) – Final Report to Government by the Procurement/Lean Client Task Group

■ HMT (2004) The Orange Book – Management of Risk, Principles and Concepts. Her Majesty's Stationery Office (HMSO), London.

■ ICE Best Practice Panel (2009) Client Best Practice Guide. Thomas Telford, London.

■ ICE Intelligent Client Capability Framework (2014). Thomas Telford, London.

■ Imperial College London (2016) – Project procedures. ICL, London.

■ Infrastructure UK, HM Treasury and Lord Deighton (July 2014) Improving Infrastructure Delivery: Project Initiation Routemap Handbook www.gov.uk/government/uploads/system/uploads/attachment_data/file/330374/0208_Routemap_Handbook.pdf IUK, London

■ Infrastructure UK, HM Treasury and Lord Deighton (July 2014) Requirements Module – Improving Infrastructure Delivery: Project

■ Initiation Routemap www.gov.uk/government/uploads/system/uploads/attachment_data/file/330361/Requirements_Module.pdf IUK, London

■ Infrastructure UK, HM Treasury and Lord Deighton (July 2014) Governance Module - Improving Infrastructure Delivery: Project Initiation Routemap www.gov.uk/government/uploads/system/uploads/attachment_data/file/330378/Governance_Module.pdf IUK, London

■ Infrastructure UK, HM Treasury and Lord Deighton (July 2014) Execution Strategy Module – Improving Infrastructure Delivery: Project Initiation Routemap www.gov.uk/government/uploads/system/uploads/attachment_data/file/330364/Execution_Strategy_Module.pdf IUK, London

■ Infrastructure UK, HM Treasury and Lord Deighton (July 2014) Organisational Design and Development Module – Improving Infrastructure Delivery: Project Initiation Routemap Handbook www.gov.uk/government/uploads/system/uploads/attachment_data/file/330366/ODD_Module.pdf IUK, London

■ Kloppenborg, T., Manolis, C., Tesch, D, (2009) – Successful Project Sponsor Behaviors During Project Initiation: An Empirical Investigation. JOURNAL OF MANAGERIAL ISSUES Vol. XXI Number 1 Spring 2009.

■ Latham, M. (1994), Constructing the Team, London: HMSO

■ Levene, P. (1995) – The Levene Efficiency Scrutiny into Construction Procurement by

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