



Government Office for
Technology Transfer

**Scope and
Purpose**

**Key
Recommendations**

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started**

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to Knowledge
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through new
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The Rose Book

guidance on Knowledge Asset
management in government



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Organisations in scope of this guidance are those headed by an Accounting Officer who is responsible for upholding Managing Public Money (MPM). These organisations are primarily those classified to the central government sector by the Office for National Statistics (ONS), but others will be in scope.

The guidance provided in this document is intended to advise and support those organisations in their management of their Knowledge Assets and, in turn, fulfil their responsibilities as set out in MPM. While the guidance clarifies best practice and provides recommendations, these should not be interpreted as additional rules.

The primary audience of the guidance are those who are seeking support and advice on managing Knowledge Assets, including programme and project Senior Responsible Owners (SROs) and subject leads (including: commercial, finance, technology, policy, innovation and data leads). More detail is available in the 'How to get started' section of this document.

Others who should be aware of its main recommendations (as summarised on page 5) include executive and non-executive members of the board; the organisation's Executive Committee, senior leadership, Accounting Officer and Finance Director; Chief Digital Officer; and Chief Scientific Advisers.

The board of organisations in scope should actively seek to recognise their Knowledge Assets and take steps to ensure their appropriate management through identification and appropriate protection and exploitation. It is for each Accounting Officer, supported by the board, to decide how. The board and Accounting Officer should be supported by the Knowledge Assets SRO and other colleagues within the organisation, as needed.

This guidance should be considered alongside the legal frameworks, and other relevant guidance or principles, which may apply to individual organisations.



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Knowledge Assets are valuable public assets, critical to the effective delivery of public services. It is the responsibility of every public servant to manage them in order to ensure that this value is maximised and not lost or under-utilised.

All public sector organisations should have a strategy in place to support the effective management of Knowledge Assets. This will include measures to:

- a) identify Knowledge Assets
- b) consider and execute appropriate protection of Knowledge Assets
- c) support exploitation of Knowledge Assets

Knowledge Assets can have considerable value and impact beyond their original purpose and exploiting this is part of good asset management. This value can be social, economic and financial, and is often a combination of these.

Each organisation should¹ consider how best to apply the guidance based on the extent of their Knowledge Asset ownership and should take a proportionate approach. The following section, '[How to get started](#)', will help identify where to begin.

It is recommended that all organisations:

- a) develop a Knowledge Assets Management Strategy (KAMS), as part of their wider asset management strategy (a requirement of MPM)
- b) appoint a Senior Responsible Owner (SRO) for Knowledge Assets who has clear responsibility for the organisation's KAMS

There is no 'one size fits all' for KAMS and the structure, length and detail will depend on the organisational needs and the number and type of Knowledge Assets (KAs) it owns. More information on what is included in a KAMS is detailed in [Chapter 3](#) of this document.

The SRO should hold a senior leadership position within the organisation and be able to influence the business area(s) and/or resources from which Knowledge Asset management outcomes will be delivered.

In the first instance, the role of SRO may fall to the person responsible for the organisation's overarching asset management strategy. In many cases it may be more appropriate for another person to be designated as SRO (such as a senior person in the area of business that is most Knowledge Asset intensive); this will depend on the nature of the organisation. More information on the role of a Knowledge Asset SRO and how to appoint one is available in [GOTT published guidance](#).

¹ Throughout this guidance:

- the word "should" is used to denote a recommendation; and
- the words "shall", "need(s)" (where the context allows) and "must" are used to denote a requirement



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How to get started

How to navigate this document

The chapters are structured to provide:

- An introduction to Knowledge Assets, why it is important to manage them and how to do so at a strategic level ([Chapter 1](#), [Chapter 2](#) and [Chapter 3](#));
- Guidance and examples of how to identify, protect and exploit Knowledge Assets ([Chapter 1](#), [Chapter 4](#), [Chapter 5](#) and [Chapter 6](#));
- Further guidance and useful resources to help you put into practice the guidance detailed in this document; and
- More detailed information on the types of Knowledge Assets, how to value them, methods for commercialisation, how to consider them in procurement, and routes for talent mobility ([Annexes A-E](#))

It is recommended to read this guidance in full. However, to aid navigation the following sections may be particularly useful to specific roles and professions:

Profession/ specialism	Section
Commercial	<ul style="list-style-type: none"> • Procurement – Para. 4.4 and Annex D • Exploitation of Knowledge Assets - Chapter 6 and Annex C
Finance	<ul style="list-style-type: none"> • Knowledge Asset valuation – Para. 4.42 and Annex B
Technology	<ul style="list-style-type: none"> • Exploiting Knowledge Assets through new applications and markets – Chapter 6 and Annex C
Policy	<ul style="list-style-type: none"> • Knowledge Asset management strategies – Chapter 3
Innovation	<ul style="list-style-type: none"> • Identifying Knowledge Assets – Chapter 4 and Annex A • Protecting Knowledge Assets – Chapter 5 and Annex B • Exploiting Knowledge Assets through new applications and markets – Chapter 6 and Annex C
Data	<ul style="list-style-type: none"> • Data Collection – Para. 4.18 and Annex A



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Profession/specialism	Section
Accounting Officers	• Knowledge Asset management principles – Chapter 2
Senior Leadership	• Knowledge Asset management strategies – Chapter 3
HR	• Talent – Para. 3.37 and Annex E

FAQs

Below are some key FAQs, to help you find the area of this guidance that will be most useful for you.

FAQs	Answers	Resources
What do I need to do?	We recommend appointing a Senior Responsible Owner (SRO) for Knowledge Assets (KAs) who has clear responsibility for the organisation’s KA management strategy.	For more information on how to appoint an SRO and the role see the detailed guidance here.
How do I embed Knowledge Asset management in my organisation?	We recommend that organisations develop a Knowledge Asset Management Strategy (KAMS).	For more information on how to develop a KAMS refer to Chapter 3 of this guidance and some more detailed guidance here.
How do I protect my Knowledge Assets?	There are three levels of Knowledge Asset protection; open access or no protection, access restriction and confidentiality, and registered and unregistered rights. Chapter 5 expands on this.	Chapter 5 Box 3.D Example Triage Process Annex A contains more on the main categories of Knowledge Assets and relevant IP rights and protection likely to be used in government.



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FAQs	Answers	Resources
How do I prioritise Knowledge Assets when exploiting them for wider social, economic, and financial benefits?	<p>You should ascertain what you want to achieve and then decide which Knowledge Assets can help you achieve it. It may be useful to think about prioritisation:</p> <ul style="list-style-type: none"> • Which is most likely to realise, social, financial, or economic benefits? • Which is likely to make the most money and/or, which are likely to produce the most cost-saving benefits to your organisation? • Which is likely to be of most use to your own department, or to other, government organisations? 	<p>Box 3.D Example Triage Process.</p> <p>Annex B – Knowledge Asset evaluation tool.</p>
How do I set out ownership and rights when collaborating with third parties and other organisations?	<p>Box 4.B ‘Ownership of IP’ and ‘setting out rights’ model provides a simplified version of a model that you can use to test your thinking before into contracting with third parties.</p>	<p>Annex D contains more information on Knowledge Assets in procurement.</p> <p>Annex A contains more information on copyright issues.</p> <p>Box 4.B ‘Ownership of IP’ and ‘setting out rights’ model.</p>
How do I measure social, economic, and financial benefits of Knowledge Assets?	<p>Knowledge Assets are difficult to evaluate when compared to tangible assets. However, HM Treasury’s Green Book has frameworks for valuing such assets. Box 6.B provides more detail on appraisal options regarding social, economic and financial value.</p>	<p>Box 6.B</p> <p>Annex B supports in assessment of a Knowledge Asset’s potential.</p> <p>The IPO provides guidance on valuing intellectual property.</p>



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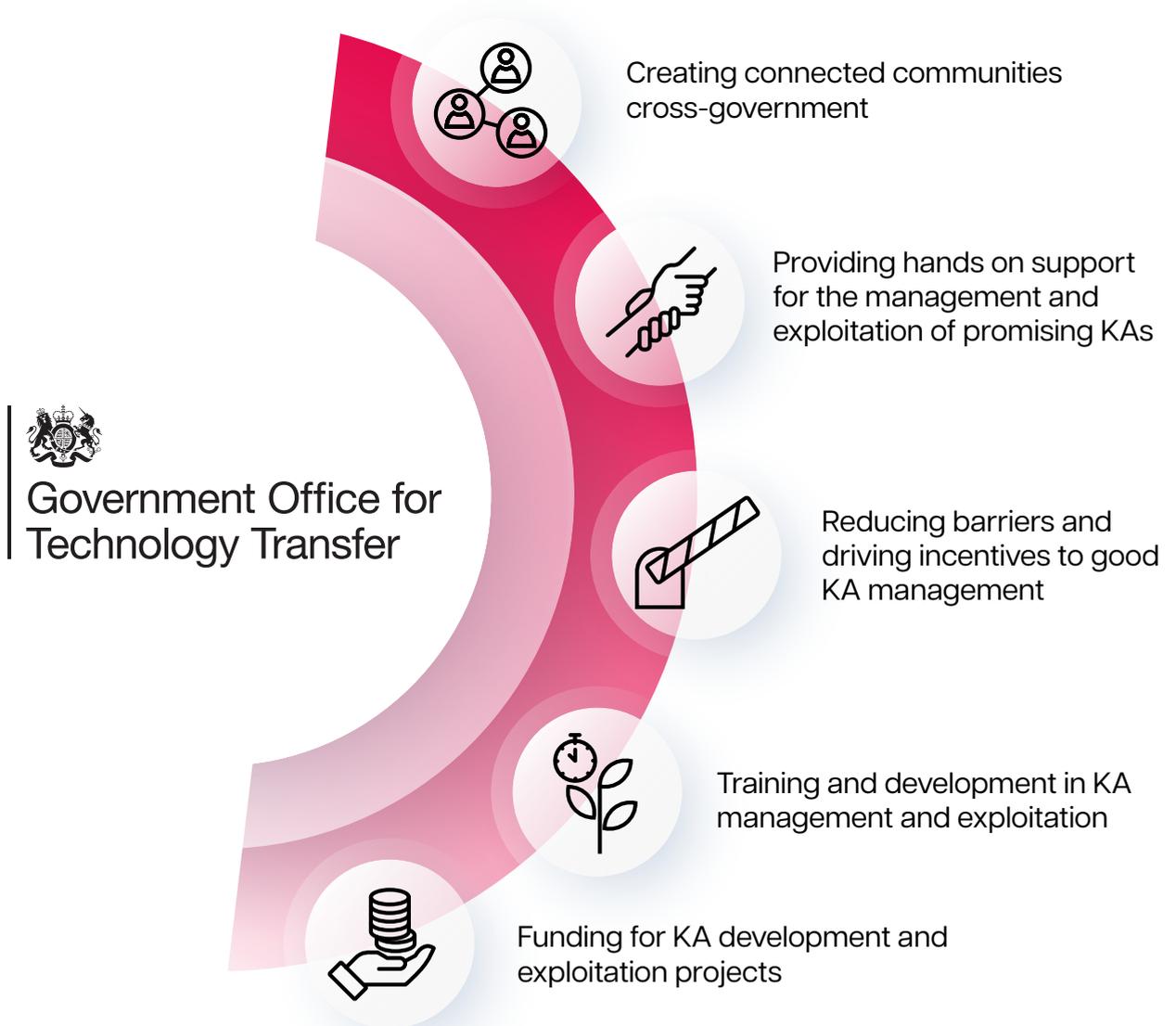
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Support from the Government Office for Technology Transfer

The Government Office for Technology Transfer (GOTT) was established in April 2022 to deliver on the recommendations set out in the Mackintosh Report. It supports the UK public sector to unlock the potential of its Knowledge Assets to deliver value to the UK economy and society and to enable a more productive public sector, including via commercialisation as well as applications across the public sector.





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The Government Office for Technology Transfer supports the better management of public sector Knowledge Assets. It provides guidance to central government departments and their public sector bodies through good practice, funding, incentives and support. GOTT can provide support to public sector organisations in a range of ways, including:

Networks – Connecting people through the Knowledge Assets Network, a growing community for those working with Knowledge Assets or who would like to learn more about the subject. Members from across the public sector share experience, best practice and expertise.

Financial support – Through the Knowledge Assets Grant Fund, GOTT helps public sector organisations unlock the potential for development and exploitation of their Knowledge Assets. This funding supports organisations through funding staff time, expert advice, resources to support proof of concept and market assessment work, and more. The public sector seed fund, [UKI2S](#), is a potential source of early-stage equity investment for spin-out companies from the public sector that are based on Knowledge Assets.

Direct support – GOTT experts provide targeted interventions to organisations to support them through the management and exploitation process and, in some cases, help develop opportunities to an investment-ready stage.

Training and development – Training is available to organisations, helping them to understand how to work with Knowledge Assets, including a skills toolkit, face-to-face training and e-learning.

Guidance – Knowledge Asset specific guidance, tools and other resources are available on the [GOTT GOV.UK](#) page.

Promoting success – GOTT provides promotional support to celebrate the impact public sector organisations deliver through their Knowledge Assets, helping raise the internal and external profile of innovators and supporting greater uptake and benefits of successful Knowledge Asset exploitation.

If you think that you, your team or organisation could benefit from any of the support above, more information can be found on the [GOTT GOV.UK](#) page or by contacting the team directly at GOTT@dsit.gov.uk



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Other public sector organisations with domain-specific experience, resources or capabilities, including unique sectoral or product expertise and existing relationships (such as with investors or experts), include:

- Intellectual Property Office: training, education and awareness events; general advice on the IP system, IP audits and rights granting
- Government Legal Department: commercial, litigation and IP legal advice
- The National Archives: source of expertise on Crown copyright, database rights and re-use of public sector information

It may be the case that the services required to handle a specific opportunity may not be able to be provided by either GOTT or its partnered organisations. In this case, it may be appropriate to procure these services from elsewhere. Over time GOTT will work to develop a supplier list, but organisations should consult with their own commercial leads before entering into procurements.



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Introduction to Knowledge Assets

Why has this guidance been published?

- 1.1. One of the key findings of the report ‘Getting smart about intellectual property and other intangibles in the public sector’², published at Budget 2018, was that there was little clear strategic guidance on how to realise value from Knowledge Assets. This meant that, while the work identified good practice within the public sector, this was limited to some pockets, and the report recognised that better guidance could help disseminate this practice more widely.
- 1.2. This version is the first update to the Rose Book, first published in December 2021. The guidance was developed in response to stakeholder feedback from public sector organisations.

What are Knowledge Assets?

- 1.3. It is easy to recognise the physical assets held by public sector bodies – they are the buildings, land, equipment and other physical infrastructure in which an organisation invests. Knowledge Assets can be more challenging to identify. They are the intangible assets that an organisation holds. These include inventions, designs, certain R&D outcomes, data and information, creative outputs such as text, video, graphics, software and source code, know-how and expertise, business processes, services and other intellectual resources as well as the reputation of the organisation itself.
- 1.4. Knowledge Assets often arise from innovation programmes, examples of which might include new IT software developed or new scientific knowledge generated as the result of investments in research and development (R&D).

² ‘Getting smart about intellectual property and other intangibles in the public sector: Budget 2018’, HM Treasury, 2018.



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- 1.5. These assets can be instrumental to the effective operation of any organisation, including in the public sector. Moreover, they are growing in importance, as the role of technology and data in public service delivery increases, and as the public sector delivers more through partners, where an understanding of the ownership of the underpinning Knowledge Assets is vital to continued success. Identifying and understanding these assets, and managing them effectively, is fundamental to the effective and efficient management of public resources.
- 1.6. Effective management of Knowledge Assets is, firstly, about ensuring that the organisation can efficiently utilise those assets to achieve their primary purpose. But it is also about having the structures to identify and exploit the wider value that they could generate, particularly where the asset is unique or innovative.
- 1.7. This value can be in terms of:
 - **Social**– harnessing Knowledge Assets to deliver better outcomes for citizens and improve the quality of public services
 - **Economic**– making Knowledge Assets available to help stimulate innovation, competition or development in part of the private sector
 - **Financial**– licensing, selling or exploiting Knowledge Assets through other commercial means to secure a financial return for the taxpayer
- 1.8. Often different asset types are combined and produce more valuable Knowledge Assets. But it is helpful to understand the individual asset types, as legal frameworks, in particular use and protection rights, can vary between assets. [Table 1.A](#) on page 16 summarises these asset types, and groups them into thematic categories.



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Table 1.A Knowledge Asset categories and types

Category	Types of Knowledge Asset	Relevant IP rights and other methods of protection
Information 	Data and other information	Database rights; copyright; Crown copyright; Non-Disclosure Agreements; contract; trade secrets.
Innovation 	Inventions and designs	Patents; designs; plant breeders' rights; trade secrets
Creative 	Texts, videos, graphics, software and source code	Copyright, performers' rights, designs; Crown copyright.
Reputational 	Inventions and designs	Trade marks and other badges of origin; goodwill.
Know-how 	Inventions and designs	Know-how could be associated with any or all of the IP rights, but may not be protectable in itself, other than by trade secrecy and appropriate confidentiality practices.



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- 1.9. Information assets are a body of data, where the data has been put into context to give it meaning. Raw data and confidential information are not usually protected by Intellectual Property (IP) rights. However, databases can be protected by copyright when recognising creative activity in database form; there is also the substantial investment database right, which is recognition of the investment in the organisation and arrangement of the database itself.
- 1.10. Innovation includes new inventions, processes and ways of working, and can be made known to the public alongside protection with IP rights, such as patenting, or kept secret. Design rights protect the shape and appearance of a product, including the layout of integrated circuitry.
- 1.11. Creative assets refer to things like written works (including software and source code), artwork, music and film (and performances in these), which may be protected by copyright or related rights.
- 1.12. Reputational assets refer to ways of distinguishing the goods and services of one entity from those of another, and includes the reputation built up in a brand (including that of the government) as well as specific rights such as trade marks and coats of arms.
- 1.13. Know-how refers to practical knowledge about how to do something, which can be hugely valuable. Know-how might encompass material which could go on to be protected by IP, such as a patentable invention before the patent application has been made. It might be something related to, but not part of, an IP right, such as specialist knowledge required to operate a machine. Know-how might also be something entirely separate from IP rights, such as the competitive advantage inherent in having a more efficient business model than a competitor. Know-how can be treated in much the same way as other IP rights, usually protected by trade secrecy when forming part of a licence or collaboration agreement. It can also be all information not in the public domain held in any form, including without limitation that comprised in or derived from drawings, data formulae, patterns, specifications, notes, samples, chemical compounds, biological materials, computer software, component lists, instructions, manuals, brochures, catalogues and process descriptions and scientific approaches and methods.
- 1.14. More detail on each of these types of asset and the associated IP rights and other methods of protection is set out in [Annex A](#) of this guidance and in the [GOTT Guide to Managing IP and Confidentiality](#).



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Why should those in scope follow this guidance?

- 1.15. This guidance is focused on UK government departments, agencies and public bodies, all of whom generate Knowledge Assets. Where an organisation is headed by an Accounting Officer, responsible for upholding Managing Public Money and managing that organisation's assets, that organisation will fall within the scope of this guidance. These organisations are primarily those classified to the central government sector by the Office for National Statistics, but others will be in scope. These organisations should have a strategy for managing their Knowledge Assets, as covered in [Chapter 2](#) and [Chapter 3](#). It should however be considered alongside the legal framework, and other relevant guidance or principles which may apply to individual organisations. Its scope does not extend to local and devolved government, or to universities, although it may still contain useful information for these organisations.
- 1.16. Within organisations, this affects us all. Every time an organisation invests in itself to become better at its core task, it is investing in Knowledge Assets. Their effective management is part of good asset management which is the responsibility of all civil and public servants. This is particularly important in Knowledge intensive institutions, such as public sector research labs and other bodies that conduct significant levels of public sector R&D.
- 1.17. The primary audience of the guidance is those who are seeking support and advice on managing Knowledge Assets, including programme and project SROs and subject leads (including: commercial, finance, technology, policy, innovation and data leads). It will also be of wider interest to executive and non-executive members of the board; the organisation's Executive Committee, senior leadership, Accounting Officer and Finance Director; Chief Digital Officer; and Chief Scientific Advisers.
- 1.18. This document supports organisations to fulfil these responsibilities, providing guidance to help civil and public servants identify, protect and exploit their Knowledge Assets (including, where appropriate, exploiting them in other markets and applications). The guidance does not define a one-size-fits-all approach to the management of Knowledge Assets and each organisation should consider how best to apply the principles based on the extent of their Knowledge Asset ownership and should take a proportionate approach.

³ See Chapter 3 in Managing Public Money for further detail in on the role of an Accounting Officers in central government organisations. '[Managing Public Money](#)', HM Treasury, 2019



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Case study:
Government Internal Audit Agency – Insights Engine

Background

Collating, summarising and extracting information from large volumes of written documentation is a common and time-consuming challenge across many parts of the public sector. For example, GIAA’s audit function covers 15 departments and over 130 arm’s length bodies (ALBs), with thousands of government documents between them to understand and categorise.

The Knowledge Asset solution

GIAA has developed a tool called the Insights Engine which uses a branch of artificial intelligence, called natural language processing. The Insights Engine summarises, collates, and analyses report content enabling hundreds of documents to be reviewed at speed. The Agency has been using the technology to analyse Annual Opinion reports, which enabled one person to review 102 reports in the same time it previously took a small team to manually analyse 13 reports.

GIAA received funding from GOTT to develop the Insights Engine further, so that it can analyse a wider range of government documents and identify cross-government trends. The Insights Engine is now available to other public sector organisations and has been utilised by multiple government departments, helping to improve public sector productivity.

“Getting the grant from GOTT has enabled us to develop the text network analysis which allows for more refined use of the Insights Engine”

Dr Iain McGregor, Director of Innovation and Development, GIAA



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Knowledge Asset management principles

Knowledge Asset management in Managing Public Money

2.1. This chapter sets out the high-level principles for effective management of Knowledge Assets, which inform the guidance within this document. They are underpinned by existing guidance in Managing Public Money.⁴ The most relevant excerpts from this document are set out below.

(4.10.1): “All public sector organisations own or use a range of assets. Each organisation needs to devise an appropriate asset management strategy to define how it acquires, maintains, tracks, deploys and disposes of the various kinds of assets it uses.”

(4.10.2): “It is good practice for public sector organisations to take stock of their assets from time to time and consider afresh whether they are being used efficiently and deliver value for public funds.”

(7.15.1): “When public bodies have assets which are not fully used but are to be retained, it is good practice to consider exploiting the spare capacity to generate a commercial return in the public interest. This is essentially part of good asset management.”

(7.15.2): “Any kind of public sector asset can and should be considered. Candidates include both physical and intangible assets, for example land, buildings, equipment, software and intellectual property.”

(A4.15): “Each public sector organisation is expected to develop and operate an asset management strategy underpinned by a reliable and up to date asset register. The board should review the strategy annually as part of the corporate business plan.”

Source: Managing Public Money (2023), HMT

⁴ See Annex 4.15 in Managing Public Money for further detail on asset management. ‘Managing Public Money’, HM Treasury, 2023



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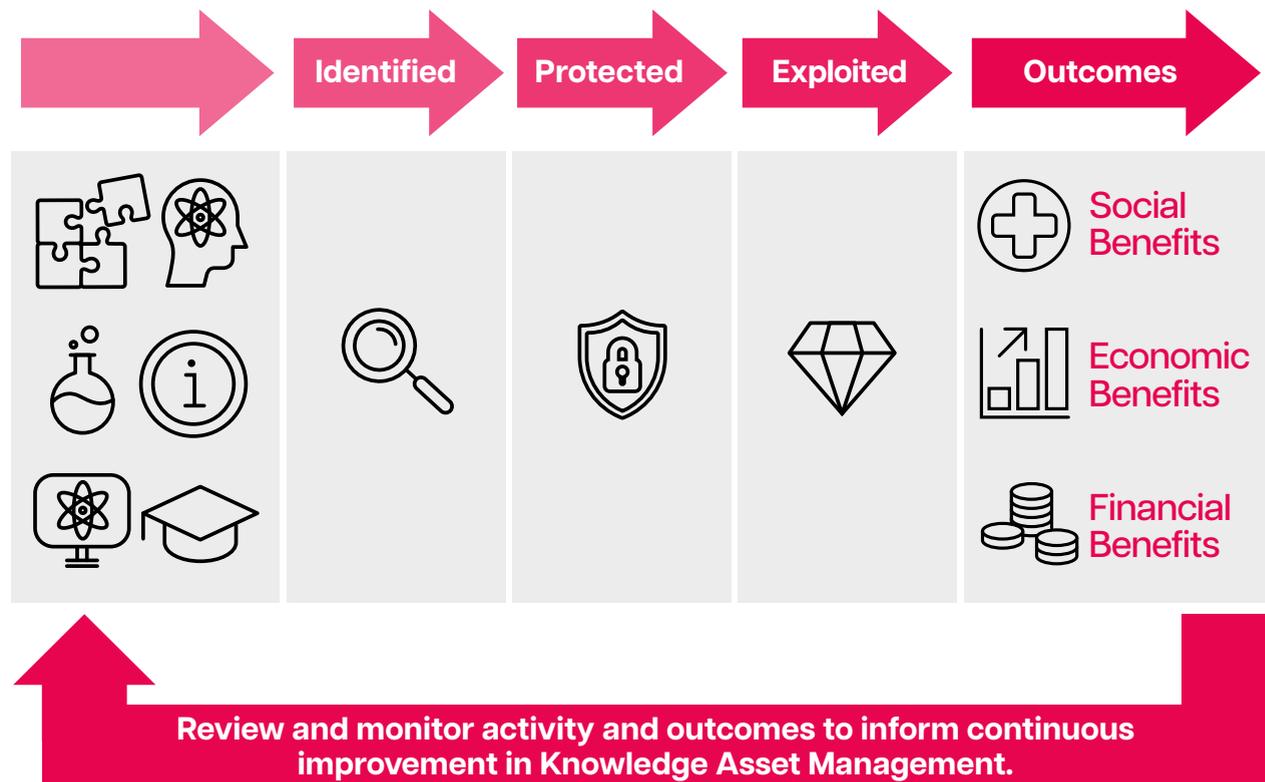
The key principles of managing Knowledge Assets

2.2. The principles are:

- Knowledge Assets are valuable public assets, critical to the effective delivery of public services. It is the responsibility of every public servant to manage them in order to ensure that this value is maintained and utilised.
- All public sector organisations should have a strategy in place to support the effective management of Knowledge Assets. This will include measures to:
 - a) facilitate identification of Knowledge Assets
 - b) consider and execute appropriate protection of Knowledge Assets
 - c) support exploitation of Knowledge Assets
- Knowledge Assets can have considerable value and impact beyond their original purpose and exploiting this is part of good asset management. This value can be social, economic and financial, and is often a combination of these.

2.3. These principles will inform the development of an organisation’s Knowledge Asset Management Strategy, as explained in [Chapter 3](#), [Chapter 4](#), [Chapter 5](#) and [Chapter 6](#) also provide more detail on the good practice involved in identifying, protecting and exploiting an organisation’s Knowledge Assets. Box 2.A illustrates the journey organisations can take their Knowledge Assets on to realise their wider outcomes.

Box 2.A Successful management of Knowledge Assets





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Knowledge Asset Management Strategies

Developing a Knowledge Asset Management Strategy (KAMS)

- 3.1. A core principle introduced in the previous chapter is that organisations should have in place an effective Knowledge Asset Management Strategy (KAMS). This strategy will be tailored to the needs of an organisation.
- 3.2. This chapter describes how to develop a strategy and what a KAMS should look like. To support this, GOTT has published a checklist, "Knowledge Asset Management Strategies: what to include and where to start", which supplements this guidance. It includes the core components recommended for an effective strategy with some points and questions to consider during development and some actions to help identify where to start.

Why is strategic management of Knowledge Assets important?

- 3.3. Strategic management of Knowledge Assets is important to the efficient and effective use of resources within any organisation. In particular, it allows an organisation to:
 - identify their assets and use them fully to meet the organisation's needs
 - save resources by avoiding duplication in the acquisition or creation of Knowledge Assets
 - recognise and reward their staff for innovative work
 - better protect and enforce their IP
 - minimise the risk of infringing the IP of others
 - prove their rights in the event of a contractual or IP dispute
 - capitalise on opportunities for income generation from Knowledge Assets, or to deliver wider social and economic benefits
 - derive value from underutilised Knowledge Assets in accordance with principles of Managing Public Money
 - fulfil financial, record keeping and accountability obligations



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What is a Knowledge Asset management strategy?

- 3.4. Managing Public Money, sets out that for a public sector organisation to manage their assets (including Knowledge Assets) effectively it must have a clear grasp of:
 - the content of its current asset base
 - the assets it needs to deliver efficient, cost effective public services
 - what this means for asset acquisition, use, maintenance, renewal, upgrade and disposal
 - whether any gains could be achieved by working with other public sector organisations
 - whether there is value in the wider application or commercialisation of their assets' capacity
 - how use of assets fits within the corporate plan
- 3.5. A Knowledge Asset Management Strategy sets out how an organisation plans to address these requirements.
- 3.6. There is no 'one size fits all' for a KAMS and the structure, length and detail will depend on organisational needs. For example, a KAMS might be contained in a single document or be a collection of linked policy documents.
- 3.7. The approach taken and level of detail in the structures, policies and processes required within each section will depend on the organisation and the number and type of Knowledge Assets it owns.
- 3.8. Knowledge Assets have particular challenges compared to physical assets that the strategy will need to address, including:
 - the process for identifying and recording Knowledge Assets, this tends to be more challenging for Knowledge Assets than for tangible assets such as property
 - how the Knowledge Assets will be appropriately protected. The intangible nature of Knowledge Assets means that relevant protection measures may be required, through legal and other means, to ensure that they can be used effectively by the organisation
 - how the Knowledge Assets can be used in other contexts, a feature of Knowledge Assets is that they can often be easily scaled; this provides opportunities for wider use without depletion of the original asset in a way that isn't possible for most tangible assets.



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What should a Knowledge Asset Management Strategy include?

3.9. An effective Knowledge Asset Management Strategy should contain three key elements:

Strategic Context and Getting Started	Sets out the organisational context and KA management objectives, who will be accountable for the KAMS and its implementation, responsibilities and how the KAMS will be communicated to the organisation.
Putting KA Management into Practice	How KA management, decision making and governance will be implemented in the organisation, including how the principles of Identify, Exploit and Protect will be resourced and embedded.
Continuous Evaluation	Evaluation of the organisation’s approach to KA management and impact achieved.

3.10. A strategy should be tailored to the individual organisation. However, the following paragraphs, are designed to provide organisations with information about what each of these elements should usually include. The KAMS ‘checklist’ is a practical guide to help commence development of a KAMS once this guidance has been reviewed.

Strategic context and getting started

3.11. The starting point for the development of an effective Knowledge Asset Management Strategy is to articulate the organisational strategic objectives. This will help to identify the most important Knowledge Assets held by the organisation and inform the approach taken to managing those assets.

3.12. The next step is to consider the strategic role of Knowledge Assets in achieving those objectives. For example, the role of specific analytical capabilities in supporting policy development, of databases in delivering services, or of IP rights in delivering long-term value from procured goods and services.

3.13. The broader policy and economic context should also be considered. This should include the principles set out in Chapter 2 of this document, but also how the changing external environment may offer new opportunities and risks in how the Knowledge Assets are used.

3.14. As a result of this analysis, an organisation should be in a position to articulate the strategic priorities for its management of Knowledge Assets.

3.15. Once the strategic context of Knowledge Assets in the organisation has been determined, the scope and ownership of the KAMS should be considered. This will ensure there is clear ownership for the KAMS, its implementation and review.



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- 3.16. A KAMS should set out clear roles and responsibilities to help ensure all organisation staff understand their and colleagues' parts in managing Knowledge Assets.
- 3.17. The amount of responsibility within the roles will vary depending on the number of Knowledge Assets the organisation manages, however the responsibilities will likely be same regardless of the number of Knowledge Assets in an organisation.
- 3.18. The commitment of senior management is integral to embedding the strategy within an organisation. Senior leaders should champion new behaviours and demonstrate commitment to the new approach and there should be a dedicated Senior Responsible Owner (SRO) for the Knowledge Asset Management Strategy. The degree of formality and seniority with which such a role could be allocated will depend on the type of organisation and the role played by Knowledge Assets. For further guidance on the role of the SRO refer to the [SRO guide](#).
- 3.19. Supporting and encouraging individuals to manage Knowledge Assets will help to drive the culture change required to improve Knowledge Asset management, the KAMS should set out how an organisation will encourage and support staff to implement the KAMS. For example, consider whether there will be any mandatory learning for organisational staff to support them with their roles and responsibilities as set out in the KAMS.

Putting Knowledge Asset management into practice

- 3.20. A Knowledge Asset Management Strategy should provide an organisation with an internal guide to decision-making through the life cycle of its Knowledge Assets. It should be tailored to the core activities of the organisation but should also set out how the organisation handles assets which might have a purpose of value outside of that core function.
- 3.21. Given the challenge of identifying Knowledge Assets, any strategy should include details as to how the organisation identifies its Knowledge Assets. An analysis of the types of Knowledge Assets held within the organisation can be helpful to design the appropriate structures to capture these, and to ensure that the organisation has an appreciation of the asset-type specific considerations relevant to each of these. [Chapter 4](#) provides more practical advice on how to identify these assets, for example by understanding where they are likely to be generated or by carrying out a light touch review of the existing stock of Knowledge Assets.
- 3.22. A strategy should also set out how key information about those assets will be recorded as they are generated and identified. This allows the organisation to be able to make a regular judgement on the role of these assets in meeting the organisation's priorities, and the implications of this for their acquisition, use, maintenance, renewal, upgrade and disposal.



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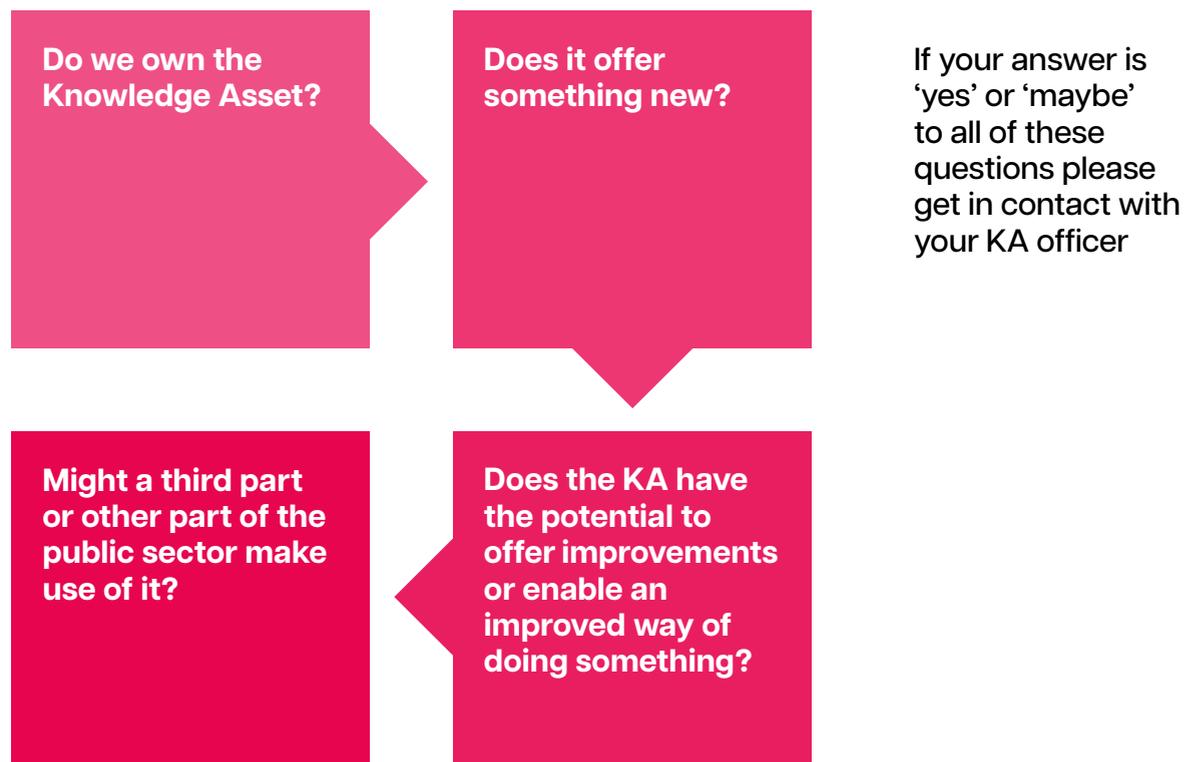
3.23. The approach to recording assets should also include consideration of how the organisation will allow this information to be shared, and how it will make use of others' shared information to understand how it can work with other public sector organisations to improve the efficient and effective use of these assets.

3.24. The strategy should include how the organisation will identify and develop opportunities, including how decisions through the Knowledge Asset lifecycle will be made, particularly on whether to develop further.

3.25. The strategy should also consider how management of Knowledge Assets can be integrated into existing processes, such as procurement, and project and programme management.

3.26. It may be beneficial to draft a decision tree (this could be simple and inform staff when and how to contact a Knowledge Asset officer or the SRO's team). See Box 3.A for an example.

Box 3.A Decision Tree





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- 3.27. To help an organisation decide on whether and how to protect their Knowledge Assets once identified, a protection strategy should be considered. The intention may be to make available for use by the public, but protection of any relevant assets still needs to be considered together with any applicable guidance and rules such as those relating to Crown copyright and public sector information (further guidance can be found on [The National Archives' website](#)).
- 3.28. The KAMS should identify how the organisation will develop and exploit its Knowledge Assets. This should also include the organisation's IP policy, which ideally should be developed in parallel to the KAMS. [Box 3.C](#) contains an example triage process to support organisations with making development and exploitation decisions for its stock of Knowledge Assets.
- 3.29. It may be helpful for a Knowledge Asset Management Strategy to consider the organisation's approach to risk management, in the context of the wider exploitation of Knowledge Assets. This is described further in [Chapter 6](#) and provides a framework against which to assess options to exploit the assets and ensure that activity does not undermine the organisation's core purpose and objectives.
- 3.30. This section is not designed to be an exhaustive list of considerations for a Knowledge Asset Management Strategy. Relevant considerations will vary significantly between organisations.
- 3.31. Once the approach to Knowledge Asset management has been developed, a strategy sets out how it will be implemented within the organisation. This should consider relevant governance structures to support decision-making about Knowledge Asset management at the appropriate level within the organisation. These structures will differ between organisations depending on their size and the role of Knowledge Assets within them. A sample structure is provided in [Box 3.B](#) as an illustration, which may be proportionate where Knowledge Assets play a significant role in an organisation.



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Box 3.B Sample governance structure for Knowledge Asset intensive organisations

Note: Organisations should employ a governance structure that is appropriate for their size of Knowledge Asset holdings. The below is an example of what a high-level governance structure would look like for an organisation where Knowledge Assets play a significant role. Further guidance and more detailed role descriptions are available in the [SRO guide](#).

Knowledge Assets management committee

- chaired by Senior Responsible Owner (see [para 3.18](#))
- membership from key parts of the organisation, for example finance, commercial, scientific, technology
- meets quarterly
- decides on strategic or high risk Knowledge Asset matters, such as acquisition or disposal of assets
- approves activity to for development of Knowledge Assets for wider purposes
- oversees work of Knowledge Assets Officer

Knowledge Assets Officer

- responsible for the management of Knowledge Assets as part of their existing day-to-day role (distinct from the SRO)
- provides regular reports to Knowledge Assets management committee
- may make recommendations to Knowledge Assets management committee
- provides support to Knowledge Asset user/developer

Knowledge Assets user/developer

- all employees, contractors and agents that use or develop Knowledge Assets
- regularly provides details of Knowledge Asset use (such as type, quantity, frequency) to Knowledge Assets officer
- regularly provides details of Knowledge Asset development (type, form, purpose, value) to Knowledge Assets officer
- reports to Knowledge Assets officer



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3.32. A further consideration is the resource requirements of a strategy and ensuring that these are in place. This should consider what people may be needed to oversee the implementation of the strategy, as well as other potential costs. For example the cost associated with formal protection measures, the initial phases of development of high potential opportunities or how matters of infringement will be approached.

3.33. When assessing resource requirements, an organisation should consider what capabilities it requires, and how to accessed. Specialist expertise may not be available internally, and so the strategy should consider how that will be accessed externally, either from within or outside of the public sector. How to get started provides some further information on the support that GOTT and other public sector organisations can provide.

3.34. The individual Knowledge Asset generators and owners within an organisation will also be crucial to effective Knowledge Asset management. The effective implementation of a strategy should include consideration of how the organisation will encourage and support the behaviour at an individual level required to identify and develop these assets. For example, in some organisations it may be helpful to put in place incentive schemes to recognise, reward and support innovators.

3.35. These incentive schemes can support a range of valuable activities, including identification and recording of Knowledge Assets. Not all schemes will be appropriate for all organisations, depending on the nature of their activity and their organisational purpose and culture. However, there are a range of options, financial and non-financial.

3.36. Financial rewards are known to act as motivators, and provide positive reinforcement for a low cost. However, peer and organisational recognition can often be more important than financial incentives for civil and public servants. [Box 3.C](#) sets out some of these options in more detail.



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Box 3.C Individual incentive schemes

Financial

- Incentive schemes can be linked to a variety of Knowledge Asset management activity. For example, organisations can reward innovators by giving them a share of any financial returns from a commercialisation activity such as licensing or revenue share in a spin out company and/or may offer a milestone related award, for example, if a patent application is filed.
- Financial incentives for Knowledge Asset management activity, may be paid by the organisation by performance-related pay awards, end-of-year bonuses or special in-year bonuses typically in the form of discrete cash payments. These frameworks differ by organisation, and within different directorates. All non-Senior Civil Servant pay and reward is delegated to departments (and typically onwards to agencies and Arm’s Length Bodies).
- For an organisation that is likely to have a more irregular stream of IP or Knowledge Assets exploitation opportunities, awards as part of the existing bonus framework may be a more appropriate route.

Non-financial

- Peer and performance recognition is an important part of incentivising public sector workers who, are rarely driven principally by financial rewards to their work.⁵ Being able to ‘make a difference’ and have their impact recognised is a key driver for individuals in the public sector.
- Non-financial rewards have the power to do this, whether as part of:
 - formal appraisal guidelines, for example, having Knowledge Asset work included and rewarded as an explicit work objective that contributes to the overarching goals of the organisation
 - informal departmental recognition, for example, success stories and individuals who have shown good Knowledge Asset management being featured through departmental intranet blogs and articles
 - formal bespoke departmental awards programmes or inclusion in organisational or cross-organisational awards programmes
 - cross-organisational recognition or take-up.

⁵ <https://www.nesta.org.uk/report/why-motivation-matters-in-public-sector-innovation/>



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3.37. Another consideration is whether the organisation's HR policies provide the necessary flexibility for innovators to move into and out of the organisation, in the form of secondments or other talent mobility arrangements. It is often appropriate for Knowledge Assets with wider, potentially commercial, applications to be developed outside of the organisation that generated it and there should be flexibility for people to move with their ideas in these circumstances. In addition, movement between organisations within the public sector can help build and share skills as well as deepen networks across government and create opportunities for identification of Knowledge Assets.

3.38. Further detail on facilitating Knowledge Asset collaboration opportunities can be found in [Annex E](#).

Continuous evaluation

3.39. The strategy should be regularly evaluated and reviewed to understand whether the priorities identified remain relevant, and to understand how far the approach to Knowledge Assets management has been effective in achieving those strategic objectives.

3.40. The strategy should set out how and at what frequency this will be done. The organisation should decide what criteria to use to evaluate the approach, and these will vary depending on the strategic goals of the organisation. Some examples of evaluation criteria could be:

- number of assets reported to the Knowledge Assets officer
- number of opportunities reviewed for exploitation
- number of assets successfully exploited
- benefits (social, economic, financial) realised
- awareness of strategic importance of Knowledge Assets management across the organisation
- integration of Knowledge Asset management into core management processes
- publicity and recognition of individuals and departments and their contribution to Knowledge Asset management



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Box 3.D Example Triage Process

As a first step of the Triage Process, it is worth protecting the Knowledge Assets you choose to own or retain (more guidance found in [Chapter 5](#)) on a case-by-case basis. If these Knowledge Assets were not protected and another organisation were to infringe this or protect it themselves in the future – it could lead to the development of illicit or counterfeit versions, or inhibit your or others’ freedom to operate. It is not always about the commercialisation value or financial value that a Knowledge Assets can generate which should influence whether you should protect it, wider benefits such as the economic and social benefits that can be generated should be considered

You should ascertain what you want to achieve and then decide which Knowledge Assets can help you achieve it. It may be useful, depending on your organisation’s resources and the number of Knowledge Assets at your disposal, to think about prioritisation:

- Which is most likely to realise, social, financial, or economic benefits?
- Which is likely to make the most money through longer term licencing agreements, or one-off sale; and/or, which are likely to produce the most cost-saving benefits to your organisation?
- Which is likely to be of most use to your organisation?

Key takeaways:

- A. Strategically managing Knowledge Assets can lead to the realisation of several benefits such as derivation of value from underutilised Knowledge Assets, saving resources by avoiding the duplication in the acquisition or creation of Knowledge Assets, and lowered risk of IP infringement.
- B. Knowledge Asset management strategies can be appropriately tailored to the needs of an organisation and integrated into an organisation-wide process of asset management.



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Identifying Knowledge Assets at point of creation

- 4.1. It is valuable for an organisation to have in place mechanisms that help to identify Knowledge Assets at the point of their creation or even in anticipation of their creation. By identifying them at this early stage, an organisation will be much better placed to make strategic decisions, for example around ownership, protection and potential wider uses to maximise their value. It can also provide an opportunity to consider whether the organisation already holds or has access to existing Knowledge Assets that could be leveraged or repurposed to deliver greater value for money than creating a new asset.
- 4.2. An organisation should therefore consider its processes and activities that are likely to give rise to significant Knowledge Assets. It is not possible to be comprehensive, given the wide range of circumstances under which Knowledge Assets can arise. However, any work involving the creation or compilation of information is likely to result in the generation of some Knowledge Assets. Some of the most common routes include:
 - procurement
 - data collection
 - research and development activity
 - IT projects
 - major and novel projects and programmes
 - not for profit collaborations and joint ventures
- 4.3. The following sections provide more detail on these activities and how Knowledge Assets identification and management can be integrated.

Procurement

- 4.4. Public sector procurement plays an essential part in the delivery of public services and driving innovation. Knowledge Assets, including a range of IP rights, are often a significant feature in such procurements, particularly when they are tackling unique challenges.



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- 4.5. There is a requirement to agree ownership of IP rights within procurement contracts and to include a clause that deals with ownership when IP rights are being transferred. There is a distinction between existing IP rights brought to the contract (typically referred to as 'Background IP rights'), and IP rights generated under the contract (typically referred to as 'Foreground IP rights'). IP ownership should be considered on a case-by-case basis to maximise long-term value and social, economic and financial benefits.
- 4.6. Ownership of IP rights carries responsibility for its protection and the potential liabilities, should there be a claim from a third party that the IP rights infringes their own IP rights. These responsibilities can have significant cost and risk implications, for which it is advisable to seek additional support
- 4.7. Box 4.A below sets out some examples of public sector procurement projects giving rise to significant Knowledge Assets.

Box 4.A Examples of public sector procurement that are likely to be rich in Knowledge Assets

Digital

- cloud-based services, Artificial Intelligence solutions and other software procurement by the government will be largely based around the pairing of public sector data with supplier software, which will be primarily protected by copyright

Equipment

- some departments procure for hardware and other physical assets, which whether 'off the shelf' or bespoke will often be protected by design rights, patents and trade marks

Infrastructure

- large infrastructure programmes, such as roads and rail will involve almost all forms of Knowledge Assets at some point, such the design of overhead gantries (patents, designs), new digital signalling systems (copyright, patents), mapping information (databases), and user-interfaces (copyright)

- 4.8. Failure to identify these Knowledge Assets and integrate them into the procurement strategy can undermine efforts to secure best value. The consequences can be:
 - that an organisation does not think through what IP rights it needs to either own or have guaranteed access to at the end of the contract period. The result of this can be that the organisation is effectively locked into an existing supplier, as they do not have the rights to move the product over to a new supplier at the end of



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the contract period. It can also have implications beyond asset management, for example being unable to access or preserve information and data assets in compliance with Freedom of Information, public records and other accountability requirements

- that the value of the IP and future ownership is not adequately factored into the commercial deal to get best value

4.9. Procurement functions should consider in particular:

- how will the tender safeguard existing Knowledge Assets?
- what are the key Knowledge Assets that are likely to be involved in the tender process?
- how will new Knowledge Assets created by the tender be managed, protected and exploited, and by whom?

4.10. Third Party IP is existing IP that is used in a collaboration but owned by a party that is not involved in the collaboration. Before the collaboration, relevant licences should be obtained by each collaborator who needs to use this IP either during the course of the collaboration or to commercialise any results of the collaboration.

4.11. If third party owned Knowledge Assets are to be used in any tendering/public procurement exercise, steps should be taken to ensure that this is properly protected and respected, and that it is only used and disclosed in accordance with the rights granted in it. Doing otherwise could lead to claims for infringement of IP and will reduce confidence in the public procurement process.

4.12. If the rights to Third Party IP are not resolved before starting a collaboration, this could culminate in a situation where an organisation would have no rights to use the results from the collaboration. If the IP were to be used without a necessary licence, the IP would be infringed and the user would potentially be liable to pay damages or repay the profits made from its use. The collaborators may have to stop using the IP, which may jeopardise the project as well as any future commercialisation.

4.13. It is essential that the formulation of the procurement strategy, options and eventual procurement sourcing plan are developed in conjunction with Commercial and IP specialists at the start of the process. For complex contracts, one may wish to obtain specialist legal advice on the most suitable Knowledge Assets arrangements.

4.14. ‘Ownership of IP’ and ‘setting out rights’ model illustrates a model of key phases to consider before entering contracts that will generate IP or other Knowledge Assets.

4.15. Further detail on the effective management of Knowledge Assets in procurement is provided in [Annex D](#), including roles and responsibilities of professions and the key Knowledge Asset considerations at each stage of the commercial lifecycle.



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Box 4.B 'Ownership of IP' and 'setting out rights' model

A. Start

Preparing for a procurement that will generate IP or other intangible assets

B. Key Questions

1. What Background IP (existing IP) already exists that will be used by the project?
2. What Foreground IP (resulting IP) will be created?
3. Do any organisations already have rights to the IP that might impact its use for this contract?
4. What rights do all parties have to the IP, now and in the future?
5. Is use of IP likely to be needed across government (the Crown)?
6. Are the 'Re-use of Public Sector Information Regulations 2015'* engaged?

C. Form of IP

Background IP

Foreground IP

D. Owners

Typically owned by the organisation supplying it unless otherwise stated

Public Sector Organisation

Jointly Owned

3rd Party

E. Setting out rights

Consider:

- Exclusive non-Exclusive or open:
- Duration
- Fees
- Automatic or on-request
- Type of use (Commercial, R&D, sub-licensable)
- Obligations on reporting

Consider:

- Exclusive non-Exclusive or open:
- Duration
- Fees
- Automatic or on-request
- Type of use (Commercial, R&D, sub-licensable)
- Obligations on reporting
- Terms of any revenue sharing and interactions between owning parties
- Field of use

Consider:

- Does the government (the Crown) need ongoing rights to the 3rd party IP?
- Field of use

*More information about the Re-use of Public Sector Information Regulations 2015 can be found in [chapters 5](#) and [6](#), and [Annex A](#)



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Data collection

- 4.16. There are a huge number of organisations that collect data to support their activities across the public sector. Wherever there is systematic data collection, a potentially valuable Knowledge Asset may be generated.
- 4.17. There are many challenges to making better use of government data that stem from the way it is collected. It is frequently stored and used only within the organisation that collected it, in ways which do not facilitate easy transfer between organisations. Data can be a valuable Knowledge Asset, and care should be taken to ensure that it is collected, its value to the organisation and others is understood, and it is managed in a way that reflects its value.
- 4.18. Organisations must comply with the law governing personal data and ensure data is treated safely, securely and ethically within appropriate governance frameworks. When personal data is shared, it must comply with the law and relevant codes of practice.

IT projects

- 4.19. Digital delivery is an important part of our public services, and this is often underpinned by the provision of specialist software. Such software can be central to the delivery of an organisation’s objectives and can be expensive to develop or buy. These make it a valuable Knowledge Asset. The Government Digital Service provides a ‘[Technology Code of Practice](#)’ which should be used for all technology projects or programmes.⁶

Research and development

- 4.20. Government is a large driver of research and development (R&D) in the UK economy. It provides significant funding to universities and others to provide this R&D through grants but the public sector also undertakes a significant amount of R&D itself. Knowledge Assets are the primary output of this R&D and proper identification, protection and exploitation of these often valuable assets is key to ensuring that the R&D is being effectively managed.
- 4.21. It is expected that organisations with significant R&D activity will have more significant and intensive Knowledge Asset management strategies, policies, processes and resourcing. For example, they might consider their policy around the keeping of invention disclosure forms.
- 4.22. Organisations that provide R&D funding to third parties should consider what Knowledge Assets the funding recipients may generate through the funded activity. The funding organisation may be able to increase the impact of their funding by providing guidance to the funding recipients to ensure effective Knowledge Asset management and the exploitation potential is considered from the outset of funded projects and programmes.

⁶ [‘Technology Code of Practice’, Government Digital Service, 2023](#)



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Major and novel projects and programmes

4.23. Most major projects will involve new Knowledge Assets being generated, particularly if they are tackling a new problem, or an old problem in a new way. Consideration of the Knowledge Assets that such projects and programmes are likely to generate can support the objectives of the project itself, by ensuring that it is structured in such a way that provides the necessary access to these assets. This includes consideration of how relevant procurement activities are approached.

4.24. In addition, early consideration of the Knowledge Assets that a project will generate can enable an organisation to understand at an early phase the potential wider applications. While it would not be right for an organisation to generate additional assets solely with a view to their future exploitation in other markets, projects should be designed to maximise value for money, which may include the ability to more widely exploit Knowledge Assets, or for the organisation to benefit from such uses by a project delivery partner.

Other collaborations and joint ventures

4.25. Collaborative relationships, for example with third sector specialists or academics, or with the private sector, can be a key driver of new thinking and approaches, and therefore of Knowledge Assets. It is therefore a useful type of activity to consider when looking at how an organisation's Knowledge Assets are generated.

4.26. They require consideration of ownership for the resulting Knowledge Assets. The Lambert Toolkit, hosted by the Intellectual Property Office to support collaborations between business and academics, which provides resources to help agree IP ownership in the context of such collaborations.⁷ These include model agreements for different types of collaborations and a decision guide to support organisations in determining which of these agreements is most likely to be an appropriate starting point.

Identifying existing Knowledge Assets

4.27. While identifying Knowledge assets as they are generated is the ideal, many organisations putting in place a Knowledge Asset Management Strategy will be doing so for the first time and will have an existing range of Knowledge Assets. In addition, it is likely that any ongoing processes to capture and record Knowledge Assets at the time they are generated will have some gaps as Knowledge Assets can be generated, and value can arise in unexpected places. For this reason, it is useful when putting in place a new Knowledge Asset Management Strategy, to conduct a light touch review aimed at identifying existing Knowledge Assets.

⁷ 'University and business collaboration agreements: Lambert Toolkit', Intellectual Property Office, 2019



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- 4.28. Organisations will have to determine how extensive a review is appropriate for them. A first step might be to carry out an IP Health Check, a tool for which has been created by the Intellectual Property Office.⁸ By answering the questions in the tool you will be prompted to consider whether you have generated IP and whether the appropriate steps to protect it have been taken.
- 4.29. If deemed necessary, a more comprehensive approach would require an interdisciplinary team, including colleagues from innovative areas of the business, as well as colleagues in corporate roles such as finance, strategy and legal.
- 4.30. Key questions for any review will be:
- What do you deliver?
 - products
 - services
 - What enables you to do this better/cheaper/quicker etc. than others?
 - tools – physical and knowledge-based
 - know-how
 - data
 - Where have you recently invested in new capabilities (internally and externally)?
 - what was created that was new?
 - What do people come to you to do that they can't?
- 4.31. Once these questions have been answered, the next step is to look at establishing what Knowledge Assets are held as a result of this activity and establish whether and how they should be protected and exploited.
- 4.32. A review like this could be complemented by a more comprehensive IP audit, potentially expanded to look at Knowledge Assets that cannot be easily protected through IP rights, such as know-how. This may require expert support.
- 4.33. After a review of Knowledge Assets is complete, an organisation should have a better understanding of its Knowledge Assets and be able to identify risks and opportunities and take appropriate action in response.

⁸ To access the IP Health Check, visit: <https://www.ipo.gov.uk/ip-support/iphealthcheck>



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Ownership of Knowledge Assets generated by employees

- 4.34. Some of the previous sections on how Knowledge Assets are generated have considered issues of ownership, particularly where those Knowledge Assets are generated working with other organisations.
- 4.35. In general, Knowledge Assets generated by civil servants in the ordinary course of their duties will belong to their employer, the Crown, unless there is a specific term to the contrary in their contract of employment.
- 4.36. For other public sector staff, (i.e. those working for non-crown bodies) it is likely their organisation owns any IP they create, unless there is a specific term to the contrary in their contract of employment, however this will be dependent on arrangements with parent bodies.
- 4.37. Where Knowledge Assets are generated by civil or public servants in their own time, or in pursuance of work that is not their job, the Knowledge Asset will usually belong to that individual.
- 4.38. It is worth being aware that all copyright works created by employees of the Crown in the course of their official duties vest in the Crown. Under letters patent, the Crown's copyright and database rights are held by the Keeper of Public Records, not individual departments.

Recording Knowledge Assets

- 4.39. Once identified, organisations should have a method of recording these systematically, with key information relevant to their effective management. There should be a centralised register owned by the KA officer or SRO (see [SRO checklist](#) for detailed description of these roles) and a clear process for how identified assets are added to the central Knowledge Asset register.
- 4.40. This system should include recording of all types of Knowledge Assets e.g. Know-how, not just those with associated IP rights. A [Knowledge Asset register excel template](#) is published on GOV.UK. Note, there may be other registers in the organisation as a way for all staff to identify Knowledge Assets. These 'local' registers can be used by the centralised register owners to prioritise opportunities to be added to the centralised register for further evaluation and development.
- 4.41. In the case of Knowledge Assets with associated IP rights, it is important that such records are able to accommodate key information about those rights, such as dates for review. [Box 4.C](#) provides more detail about what such systems might look like in the public sector, drawing on existing practice in more mature and Knowledge Asset intensive organisations. More detail on how to monitor and review IP rights is provided in [Chapter 5](#) on Knowledge Asset protection.



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Box 4.C Examples of systems to record Knowledge Assets

Some organisations have found it beneficial to have a dedicated internal case management system that tracks invention and/or technology opportunities. When an invention disclosure or other generated work is received, it is recorded as an opportunity on a database. This enables the IP and commercialisation or exploitation information to be recorded for each opportunity entered on the system. For example, for a given opportunity it can be specified that:

- whether any non-disclosure agreements (NDAs) are in place
- updates and general notes on commercial negotiations
- licensing information
- the IP associated with the opportunity
- whether any registrable rights have been applied for or granted, and associated renewals
- any other notes of information it is felt are of use and interest to the system users

These sorts of database are particularly useful where unregistered rights have been licensed or where source code has been openly acquired (enabling the decision-making process in this regard to be clearly recorded for future reference). Even the decision to treat the invention as a trade secret can be recorded clearly.

Evaluating Knowledge Assets

4.42. In order to support a standardised approach to recording Knowledge Assets, a Knowledge Asset evaluation tool has been developed. The tool comprises a questionnaire that should help public sector organisations elicit the information required to fill out an assessment of the potential social, economic and financial value of their Knowledge Assets, to help identify and prioritise Knowledge Assets with potential for further exploitation. Further detail on this tool, including instructions on how it can be used, are provided in [Annex B](#).

4.43. While this tool is designed to support organisations in making an assessment of the asset's value, it supports this assessment at a high level, acknowledging the challenge of a more precise valuation of Knowledge Assets. However, there may be cases where a more precise valuation is required. [Box 4.D](#) provides more detail on some of the approaches to valuation in these circumstances.



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Box 4.D Knowledge Asset valuation

Knowledge Assets are challenging to value in comparison to tangible assets. They can be difficult to identify, and once identified it can be hard to define and set the boundaries of the asset. Their value is often highly dependent on the availability of wider technologies and can be extremely sensitive to changes in the market in which they operate.

This challenge is amplified in the public sector because consideration should be given to their wider economic and social value, rather than just focus on financial value. [Box 6.C](#) in [Chapter 6](#) provides more detail on appraisal options regarding social, economic and financial value, while [Annex B](#) of the guidance helps organisations consider whether it is best to exploit a Knowledge Asset in pursuit of social, economic or financial returns (or a combination of the three).

Where organisations do engage in transactions involving Knowledge Assets, the following three main approaches can help arrive at a valuation for them:

- Market-based – this approach arrives at a market price for the Knowledge Asset in question, based on comparable assets currently or recently transferred in the open market. While this is a relatively direct and systematic approach, and relatively easy to calculate in theory, in practice it can be hard to find suitable comparators due to the large variety in the shape and character of Knowledge Assets.
- Cost-based – this approach assumes that there is a correlation between the value of a Knowledge Asset and the cost of generating that asset. The advantage of this approach is that it is relatively easy to calculate, but the significant drawback is that there is often little correlation between the cost and value of a Knowledge Asset.
- Income-based – this approach estimates the economic benefit that might derive from the Knowledge Asset, net of the costs. While this provides the most accurate assessment of value, it is hard to calculate, as it is hard to forecast future revenue streams. This means that such valuations can be highly subjective.

See the Intellectual Property Office’s [IP Finance Toolkit](#) for more detailed guidance on these approaches.

The challenges of Knowledge Asset valuation mean that a deep understanding of value is likely to require significant expert input, which can be expensive. In addition, market comparators, which can often provide a useful benchmark for valuation, are often more difficult to identify. For this reason, a detailed valuation only tends to be appropriate in certain, more limited, circumstances.



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Key Takeaways:

- A. Ownership can be a contentious issue, particularly if there is a partnership with other organisations or private sector companies. It isn't necessarily a blocker to protecting or exploiting the Knowledge Asset, but should be considered on a case-by-case basis, as blanket solution do not account for variety of Knowledge Assets and their potential social, economic and financial benefits. It may be helpful to speak to your commercial and legal teams or Knowledge Asset manager.
- B. The right to use Knowledge Assets and IP is often more important than ownership, and a party can have a licence to use IP even if they do not own it. Box 4.B outlined in this chapter provides a simple model, which may help in factoring in who will have what rights to the Knowledge Assets and IP generated.
- C. Failure to identify Knowledge Assets and integrate them into a procurement strategy can undermine efforts to secure best value.



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What is protection in the context of Knowledge Assets?

- 5.1. Knowledge Assets are fundamental to economic activity, can be hugely valuable, and modern business invests heavily in their development to secure competitive advantage. A modern and successful economy is dependent on this. The nature of Knowledge Assets, unlike most physical assets, is that they are often non-rival and can be easily replicated or used by others simultaneously, which can result in positive spill overs that benefit people other than the original producer who invested in developing the asset. This can be a disincentive to investment in their development as competitors can effectively copy or benefit from an innovation without having expended the same effort in its creation. This in turn is a driver for steps to be taken to protect that asset, by restricting and controlling its use in some way.
- 5.2. One approach to protecting the asset is to keep it closed, for internal use only. However, this is not always a good outcome for the wider economy and can prevent others from building new innovations around the asset thereby hindering potential new economic activity. IP rights are designed to overcome this and therefore encourage investment in innovation and creativity. In return for making the idea available to others, the owner is granted a legal monopoly over the idea for a specified period, allowing them to take legal action to prevent others from replicating, using, importing or selling their creation during this time.
- 5.3. GOTT has published a [guide to Managing Intellectual Property and Confidentiality](#) that explains the basics of intellectual property including the IP framework, how it is owned, protected and can be commercialised. It also outlines when and how to maintain confidentiality as well as responsibilities of civil and public servants.



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Why is protection important for public sector Knowledge Assets?

- 5.4. The objectives of public sector organisations are different to commercial organisations. Their focus is not solely on maximising financial returns for that business, but on the wider benefit to UK society. However, this does not make protection any less important for the following reasons:
- the public sector relies on Knowledge Assets to deliver public services; if these are not appropriately protected there is a risk that a third party, either through appropriation or because they have separately developed the same invention, put in place protections themselves, which may then restrict the organisations ‘freedom to operate’
 - public sector organisations should be seeking to ensure that UK society receives a fair share of the benefits in the Knowledge Asset that have been built up through public sector investment; unless they are appropriately protected, an organisation will not control the Knowledge Asset and are not in a position to make decisions about how the asset is managed and exploited to ensure this.
- 5.5. Protection of Knowledge Assets in the public sector is sometimes mistakenly perceived as in tension with government’s commitment to be open and transparent. However, protection does not necessarily mean the asset is withheld from the public. Rather, it means that the necessary level of control is placed around the asset so that the responsible government body can maximise its benefits for the public good, whether that means ensuring access to a technology for wider business, generating revenues which can flow back into the public sector and so reduce the taxes required to fund certain activities, or simply ensuring that an asset intended for the public domain does not end up being commercialised by a third party in such a way that restricts access to it in future.
- 5.6. Of course, there are many cases where the public interest is better served by the open licensing of a Knowledge Asset in accordance with existing standards such as Open Government Licence (OGL) and data protection legislation. For example, if an organisation has concluded that the costs of protection are not outweighed by the potential benefits, and there are no issues around privacy. In addition, there are circumstances where open licensing supports wider economic or social objectives, for example by stimulating a new and beneficial market or holding public services to account. However, a decision to release in this way should be based upon analysis of the associated costs, benefits and risks.



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5.7. The concept of protection can feel counter to the culture of public service that exists across the UK public sector. There is a natural and understandable instinct among civil and public servants to share their good ideas, so that others can benefit from them. However, as described above, doing so without a proper consideration of protection can give rise to significant costs or lost opportunities. It is therefore incredibly important that a Knowledge Asset Management Strategy (as set out in Chapter 3) ensures asset holders assess the need for protection and put in place any relevant protection measures before they release their assets more widely.

Personal and sensitive information

5.8. There are considerations around protection of personal and sensitive data and the relevant legislation relating to these assets e.g. data protection legislation. This guidance does not supersede any existing government guidance around how to handle such information, and it is expected that every public sector organisation will have policies for handling personal data and classified information, which have their own legal requirements. However, it is likely to be useful and necessary for any Knowledge Asset Management Strategy to refer and align to these policies.

Types of Knowledge Asset protection

- 5.9. There are a number of different types of protection, not all of which have associated IP rights for example contractual controls such as Non Disclosure Agreements. The following sections set out the different levels of protection that exist, and the factors that organisations may consider when deciding what type of protection is most appropriate for a particular Knowledge Asset.⁹
- 5.10. For more information on the different types of IP rights (IPRs) and how to use them please refer to the [GOTT guide to Managing Intellectual Property and Confidentiality](#).

⁹ There are also other useful ways you can think about the protection of different Knowledge Assets, in addition to the three levels of protection set out above, such as the Open Data Institute’s data spectrum: <https://theodi.org/about-the-odi/the-data-spectrum/>



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Level 1 - Open access / no protection

5.11. The default licence for most Crown copyright and Crown database right information is the Open Government Licence (OGL).¹⁰ The OGL is a simple set of terms and conditions that facilitates the re-use of a wide range of public sector information free of charge. This ensures harmonised terms across the public sector, compliance with the Re-use of Public Sector Information Regulations 2015 and reduces any administrative burden from public sector bodies in permitting the use and re-use of the information they hold and produce.

5.12. With free-to-use material dealt with in this way, there are still considerations that should be made, such as:

- ensuring work is properly attributed to UK government
- disclaiming any liability or warranty for the information or endorsement for the re-use
- choosing the correct open licence vehicle (particularly in respect of open-source software)
- ensuring that no authorisations are given in respect of third-party IP or personal data
- For further information there is guidance produced by The National Archives.¹¹

¹⁰ 'Open Government Licence v3.0', The National Archives.

¹¹ For further detail and guidance from The National Archives on the OGL, visit: <https://www.nationalarchives.gov.uk/information-management/re-using-public-sector-information/uk-government-licensing-framework/open-government-licence/>. For more detail on the UK Government Licensing Framework, visit: <https://www.nationalarchives.gov.uk/information-management/re-using-public-sector-information/uk-government-licensing-framework/>.



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Level 2 – Access restriction / confidentiality

- 5.13. One way of ensuring control of an asset is to limit who has access to it. This form of protection is suitable only in very limited cases, as there are extensive statutory access rights under UK legislation through which it could potentially be circumvented. Without formal processes placed around an asset sought to be controlled in this way (such as non-disclosure agreements, discussed below), there is little recourse against a would-be infringer. For information held for a public body's public task, access can also trigger re-use rights under the Re-use of Public Sector Information Regulations 2015. Tailored guidance for public and cultural sector bodies on implementing these regulations is available from The National Archives.¹²
- 5.14. Confidential information belonging to government bodies may be protected via a number of means, including the common law rules around breach of confidence and misuse of confidential information, Trade Secrets legislation, and the Official Secrets Act. However care should be taken when speaking to people who are not based in the same territory as common law does not apply internationally.
- 5.15. Contractual controls may also be put in place via non-disclosure agreements which may stand alone or part of a wider contract.¹³ This can be seen as an enhanced version of protection through control of access, importing legal restrictions and penalties for breach of those restrictions. It is appropriate for all kinds of asset likely to give rise to a patent application, as well as assets involving individual or otherwise sensitive information.
- 5.16. Confidentiality is especially important when working with potentially patentable IP, for a patent to be granted details of the invention must not have been disclosed anywhere in the world before the filing date of the patent application. Therefore, if an organisation wishes to protect a Knowledge Asset before filing for a registered right information should be kept confidential or utilise an NDA. For more information on confidentiality refer to the GOTT guide to Managing Intellectual Property and Confidentiality.

¹² Guidance on the implementation of the Re-use of Public Sector Information Regulations 2015: For public sector bodies, The National Archives, 2015.

¹³ You can download a template of a NDA from: <https://www.gov.uk/government/publications/non-disclosure-agreements>



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Level 3 – Registered and unregistered rights

- 5.17. IP rights are legal monopolies granted over certain types of Knowledge Asset in order to incentivise innovation and creativity and reward rightsholders for releasing their work to the public. In exchange for this ‘public good’, they are granted a limited period of time in which to exclusively exploit their assets, after which time the right lapses and the Knowledge Asset is free for use by all. However, registered trade marks can be renewed continually.
- 5.18. Lots of different types of IP rights are available. Some are subject to registration, while others occur automatically, and are known as unregistered rights. Equally, many valuable Knowledge Asset opportunities may comprise a combination of several Knowledge Assets, which could in turn require protection through multiple IP rights. It is worth bearing in mind that the levels of protection can co-exist; for example, an asset can be protected as a registered or unregistered right, but can also be available under the OGL. However, not all Knowledge Assets can be protected through IP rights. It is also worth noting that some IP rights are territory specific and care should be taken when working internationally.
- 5.19. The remainder of this chapter provides an overview of the IP rights available under each Knowledge Asset class. More detailed information about these rights, including the legal basis and, where applicable, how to register these rights, is contained in [Annex A](#).

Protection for different types of Knowledge Assets

Information

- 5.20. Data itself cannot be protected by IP rights, but database rights and copyright can protect collections of data.

Innovation

- 5.21. Patents protect new inventions and are able to cover how products work, what they do, how they do it, what they are made of and how they are made.
- 5.22. Design rights protect the overall visual appearance of a product and is one of the key differentiators between different goods in the marketplace. They can be registered or unregistered.
- 5.23. Plant breeders’ rights protect newly bred, or developed varieties of plants, and are used to protect investment in new crops by restricting who can produce, propagate and sell them.



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Creativity

5.24. Copyright protects literature, artistic works, photographs, music, dramatic works, software, databases, films, radio and television broadcasts, sound recordings and published editions. Performers’ rights are also protected in relevant types of works, such as films, broadcasts and sound recordings. For these assets, copyright protection is automatic, and asset owners are not required to apply for these protections nor pay a fee. There is no register of copyright works in the UK. Copyright protects your work and stops others from using it without your permission. Your work could be protected by copyright in other countries through international agreements, for example the Berne Convention. Ensure you check how long the copyright lasts in the countries you are using. Crown copyright work are works made by the Crown or an officer or servant of the Crown in the course of their duties (e.g. an employee of a Government department). The duration is 125 years from creation, or 50 years from commercial publication, if published within 75 years of creation.

Reputation

5.25. A trade mark is a badge of origin allowing a customer to distinguish the goods and services of one entity from those of another. The trade mark could be made up of words, logos or a combination of both and can include multimedia marks and sounds. Trade marks cover specific goods and services with business in specific territories. Trade mark protection can be secured through formal registration, but trade marks can also be unregistered, in which case it is possible the goodwill built up in the business may be taken into account in any disputes under the common law of “passing off”.

5.26. Geographical Indication registration ensures that a protected name can only be used on products that are verified as complying with a specification defining the production area, composition and characteristics of the product.

5.27. Armorial bearings such as coats of arms, heraldic badges, State emblems and flags are treated as distinct from trade marks. There is an international registry of such devices which prevents them being registered as trade marks.



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Maintenance and enforcement of IP rights

5.28. Registered IP rights typically require renewal payments to maintain the right, and so it is important that any organisation holding such rights has a mechanism to track these. This will also allow the organisation to be better placed to anticipate dates when rights are due to lapse and make a decision about whether it remains a good decision to maintain those rights, given the associated costs (on which see below). Box 5.A provides more detail about how to do this using an IP rights tracker.

Box 5.A IP rights trackers

- IP rights trackers are ideal for recording registered IP rights such as patents, trade marks and designs. They facilitate monitoring of critical dates (for example renewal dates) and minimise the risk of the rights lapsing or being placed at risk through unintended activity or inactivity. An additional benefit of an IP rights tracker is that it provides an understanding of the various Knowledge Assets protected by IP rights held across the organisation, and the costs of maintaining those assets.
- Organisations may find that information about IP rights is kept in a variety of forms using existing systems. In this situation the organisation may wish to create a new IP rights tracker which records and coordinates the other systems.

Completing the IP rights tracker

- When completing the IP rights tracker for the first time, the IP information produced pursuant to an IP audit may be entered immediately or over time as the assets are identified. Appropriate constraints on access ensure control of the records and avoid unnecessary bottlenecks in record keeping procedures. A Knowledge Asset management strategy may determine who within the organisation can access and amend records. Accuracy of the data in any record keeping system is critical. An IP rights tracker should be supported by measures to facilitate the accurate entry of information, such as training and desk notes.

Maintaining the IP rights tracker

- An IP rights tracker is best maintained by devising a system whereby the registering of an IP right by an organisation triggers the requirement for the tracker to be filled out. This should be considered as part of a Knowledge Asset management strategy. It may also be most effective for the organisation to assign certain officers or positions as the primary contact person for correspondence with the Intellectual Property Office and IP professionals.



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5.29. Often documents and other Knowledge Assets may need to be re-used many years after their creation, and by different people and teams. They should be clearly marked with IP ownership information to facilitate such use and to avoid any potential misuse. More detail on IP marking is provided in [Annex A](#).

5.30. Protection of Knowledge Assets at this level requires active enforcement - there is no benefit to paying to register a right if there is no intention to enforce that right. This may mean pursuing potential infringers, which can have negative public perception. But where the wider implication is a loss of rights to the general public or a loss of value to the public sector, it is right for an organisation to defend the government’s position. However, litigation is usually costly and is not a criminal matter, and since infringement of IP rights is often unintentional, legal proceedings may not always be appropriate.

5.31. As part of their Knowledge Asset Management Strategy each organisation should have a clear policy on enforcement, which should be based around the purposes of the organisation and the overall public interest. Enforcement should, in most circumstances, be a last resort after other forms of dispute resolution have been discounted.

Protection requirements over time

5.32. Many registered rights require renewal fees to be paid, for example patents require annual fees, but some rights such as trade marks only require renewal every 10 years. If these renewal fees are not paid the registered rights may be lost.

5.33. The value and impact of Knowledge Assets is often contingent on a particular set of circumstances, which will change over time; for example, a unique invention which everyone is licensing today might become obsolete tomorrow. For these reasons it is important to consider from time to time whether an asset still needs protecting, or whether it is acceptable to allow the right to lapse. There are costs in keeping rights in force and these should be balanced against ongoing benefit to the organisation.

Managing risk in international partnerships

5.34. More than half of all UK research is a product of international partnerships. With this in mind, the government has published Trusted Research Guidance for Academia which provides advice on the importance of properly protecting valuable information.¹⁴ This Guidance for Academia covers: how to protect research; safe international collaborations; use of legal frameworks; and who researchers are at risk from, and where. The government also has Trusted Research Guidance for Industry, which provides more specific information when industry work with academia, and includes issues around ownership, publishing, and protection etc.¹⁵

¹⁴ <https://www.npsa.gov.uk/trusted-research-academia>, The National Protective Security Authority, 2023

¹⁵ <https://www.npsa.gov.uk/trusted-research-industry>, The National Protective Security Authority, 2023



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5.35. Trusted Research aims to support the integrity of the system of international research collaboration, which is vital to the continued success of the UK's research and innovation sector. It is particularly relevant to Industry as well as researchers in Science, Technology, Engineering and Maths (STEM) subjects, dual-use technologies, emerging technologies and commercially sensitive research areas. These Trusted Research Guidance documents have been produced in consultation with the research and university community and is designed to help the UK's world-leading research and innovation sector get the most out of international scientific collaboration while protecting intellectual property, sensitive research and personal information. While the advice is primarily aimed at academic and industrial researchers, it is relevant to researchers across the public sector who should pay it due consideration while developing their Knowledge Asset management strategy.

5.36. When considering licencing out Knowledge Assets, it should also be determined whether any national security requirements may apply before engaging with the market. See [guidance](#) from the National Protective Security Authority (NPSA) for more information on securing innovation, including managing National Security Investment (Act) and Export Controls regulations.

Key takeaways:

- A. If a public sector organisation doesn't protect its assets, another organisation or third party may put in place protection themselves – which may restrict the public sector organisations 'freedom to operate'.
- B. Public sector organisations should seek to ensure the UK receives a fair share of the benefits of a Knowledge Asset.
- C. For a public sector organisation to protect an asset, it does not necessarily mean that they are going against government's commitment to be open and transparent. It also does not mean that the protected asset is withheld from the public either.
- D. Lots of different IP rights are available, but not all Knowledge Assets can be protected via IP rights. It is also important to note that the three levels of Knowledge Asset protection can co-exist.



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Overview of exploitation of Knowledge Assets

Introduction to options for exploitation

6.1. The range of Knowledge Asset exploitation options is wide. They include:

- The commercialisation of the asset, to generate financial returns that can support the public service priorities of the organisation
- Using the asset in a wider public-sector context, either within the organisation itself or across other public sector organisations to support public service delivery or efficiency gains.
- Sharing the asset, so that it is available for use by business, charities and citizens

The benefits from this wider exploitation can be financial, social or economic, and in most cases, are a combination of more than one of these.

6.2. The wider use of a Knowledge Asset to generate greater value is usually either through the application of that asset in a different market or organisation, or through a different application than was originally intended. The intangible nature of Knowledge Assets means that they can be scaled without a degradation of the original asset, which can make them well suited to wider use. The Knowledge Asset evaluation tool described in [Chapter 4](#) and [Annex B](#) is designed to make a very early assessment of the potential of an asset for wider use in this way.

6.3. It is important to be open-minded in this process, particularly at the early stages. Relatively few of these assets will be suitable for deployment in these wider contexts, particularly where they are commercial, and it is challenging to identify these at an early stage. For example, it requires knowledge of wider markets that may not be available within that organisation. For this reason, it can be easy to find reasons not to develop the thinking around an opportunity. However, there are usually ways to overcome barriers. A balance should be struck to allow space for ideas to be explored, while ensuring that public resources are being used prudently.



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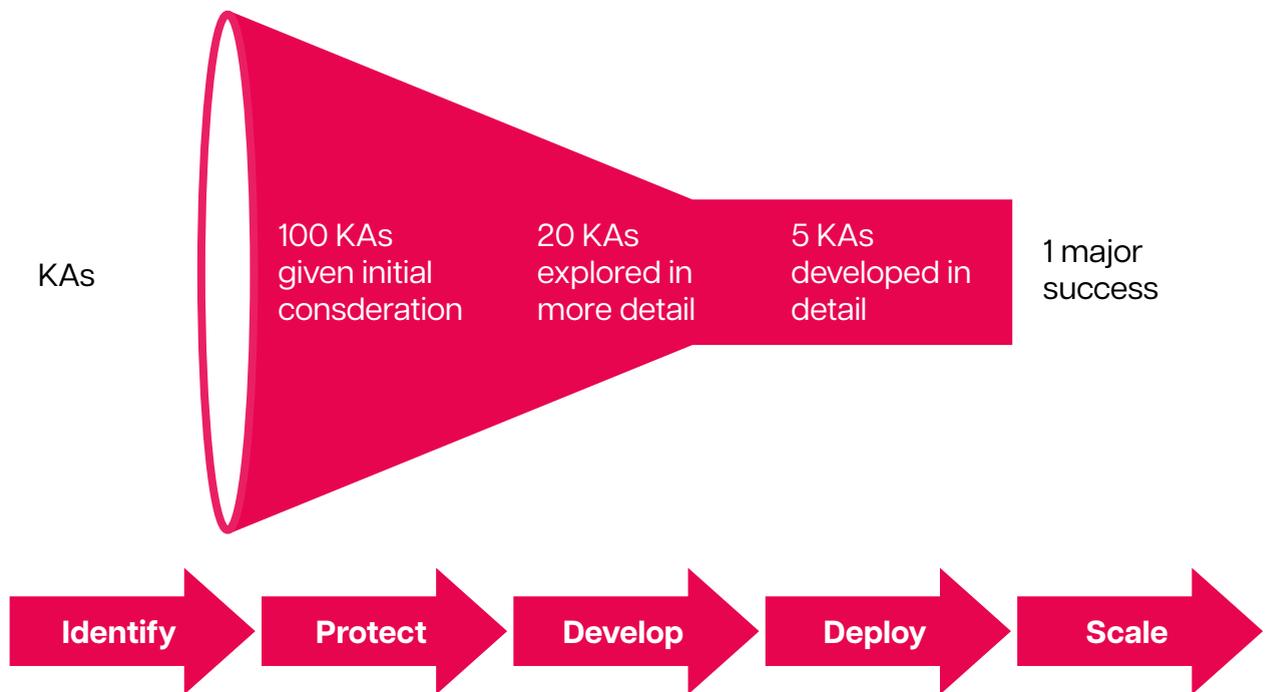
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- 6.4. The challenge of identifying assets with potential is another reason that recording and sharing information about the assets is important, as it can allow others with different market knowledge to identify potential wider uses and can also allow the assessment to be easily revisited as market conditions change.
- 6.5. For opportunities to generate income from a Knowledge Asset, HM Treasury’s Consolidated Budgeting Guidance (CBG)¹⁶ provides further guidance for public bodies and government departments on income retention, including a right to discuss income retention specifically from the proceeds of successful Knowledge Asset exploitation with HM Treasury (see paragraphs 4.70–4.71 in the CBG). If you are considering this, contact GOTT for further advice, by emailing GOTT@dsit.gov.uk.

The stages of exploiting Knowledge Assets

- 6.6. The process described in this chapter represents a funnel. This is a concept often used in innovation and is applicable here too. The funnel is illustrated in Box 6.A and shows how successful new products are usually the result of a large number of ideas being analysed and gradually narrowed down. In this case, the material that feeds the funnel are existing Knowledge Assets, where some initial assessment has illustrated that there may be potential for wider use.

Box 6.A The Innovation Funnel



¹⁶ ‘Consolidated budgeting guidance 2023 to 2024’ HM Treasury, 2023



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- 6.7. [Chapter 4](#) and [Chapter 5](#) have been focused on those initial ideas, ensuring they are properly identified and protected. This chapter is focused on how you can pull these ideas through the funnel, appreciating that only a small proportion of what is fed into the process will come out at the other end in the form of a successful product or service.
- 6.8. The funnel shows that this is not a smooth process, and from many Knowledge Assets there will be relatively few major successes. This means that a process to manage assets through this funnel should be light touch at the beginning and grow in intensity, so resources are committed appropriately.
- 6.9. Skills requirements also grow as you go through the funnel. It is important to have those with a deep understanding of the asset helping to inform this process from the start. But as an asset is developed other expert skills will be needed, particularly around business development. The asset that goes into the funnel may look quite different by the time it's got to the other end, as it receives more scrutiny and is developed further.
- 6.10. [Box 6.B](#) illustrates this iterative process of development and exploitation of Knowledge Asset opportunities. This is intended as a guide and can be adapted according to the organisation or the assets in question. The rest of the chapter looks at the phases it outlines in more detail, providing guidance to organisations about key questions to ask and how these should be navigated. There is more detail to this guidance in the early phases of development, to help start this journey, as at this point the process will be more generic across assets. However, as opportunities are progressed, judgements will be more tailored to the particular asset and the associated opportunity, which is better served by expert input rather than generic guidance.



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Case study:
Thermology Health spin-out company

Background

Thermology Health is a medical technology company established by the National Physical Laboratory (NPL).

Knowledge Asset

The UK's national metrology institute, NPL developed a new thermal imaging technology creates temperature scans of the body up to ten times more accurately than current thermal imaging methods. It was recognised that this Knowledge Asset had the potential to be used in the healthcare sector to detect foot ulcers more reliably to identify at risk patients sooner, which could prevent 170 amputations a week in England alone.

The innovative tech idea was underpinned by a package of Knowledge Assets, some of which have associated intellectual property rights;

- A granted patent
- Prototypes with design files that meets UK product legislation and associated copyrighted software source code
- Confidential know-how
- Data

Approach

GOTT provided funding to NPL to help further develop the technology and underpinning IP. GOTT have also supported NPL as they work towards spinning out, including assisting NPL's search to find a suitably qualified CEO to launch and scale a digital, health business that will support the wider healthcare sector.

“We most benefitted from the Grant Fund through not just the funding itself, but also access to innovation experts and investor networks.”

Christian Saville, NPL Product Manager and now Chief Operating Officer, Thermology Health



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Box 6.B The iterative process of development and exploitation of Knowledge Asset opportunities

Input - KA opportunity with some initial thinking

Develop - high level assessment

Deepen understanding of questions set out in the evaluation tool questionnaire around

- understanding the asset
- potential beneficiaries
- deliverability
- other applications

Develop a wider range of option for exploitation

Assessment - still worth pursuing? Next stage requires greater investment in resources

Develop - Business case development

Opportunity to be developed **internally**. Develop business case in the usual way,

Opportunity to be developed **across government**. Develop business case.

Opportunity to be developed on the basis of **external partnership**, either commercial or on non-profit basis. Develop business case - consideration of right model, state aid/ competition consideration.

Assessment - still worth pursuing? Any approvals required, e.g. from HMT?

Deploy - Executing the business case

Execute business case

- marketing negotiation
- ongoing maintenance

Scale

If successful there is a case for reviewing business case of plan and seeing where there is scope to roll out more widely or scale up activity.

An iterative process

Likely that you will go round these stages more than once and that opportunity will shape change.



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The three stages of Knowledge Asset opportunity development and exploitation

- 6.11. Knowledge Asset development and exploitation has been split into three stages:
1. High-level assessment
 2. Business case development
 3. Executing the business case
- 6.12. This is to draw out the different type of activity that can occur as an opportunity is taken through the funnel. In practice these phases can often blend into each other and, as [Box 6.B](#) seeks to illustrate, each phase itself will be iterative. Splitting the development phase up in this way also illustrates that there should be a number of decision points in this part of the process, to agree what opportunities should not be pursued further and, in increasingly fewer cases, whether a further commitment of resources is appropriate. In developing its Knowledge Asset management strategy, an organisation should consider how their governance structures support this decision-making process.

Stage 1 – High-level assessment

- 6.13. Having identified a Knowledge Asset with potential for further value, the first stage is to deepen that understanding. This will build on the analysis that has been conducted as part of any initial assessment, and to a large extent will involve a deeper examination of those questions. In particular, by the end of this phase, it will be important to have a good understanding of the range of options for exploitation, and initial views on which route is likely to maximise value and be deliverable.

Develop options for exploitation

- 6.14. A valuable Knowledge Asset is likely to have a range of ways in which it can be exploited. It may well be that when this process is started, there is a single lead option or idea, but a range of options should be developed for further consideration as part of an options appraisal. In line with good practice set out in the HM Treasury’s Green Book, such appraisal should be set alongside a ‘do nothing’ option.¹⁷
- 6.15. The range of exploitation options is very wide. To help organisations think these through, [Box 6.C](#) provides an illustrative and non-exhaustive list of possible models, split into internal, cross-public sector and external opportunities.

¹⁷ ‘The Green Book: appraisal and evaluation in central government’ HM Treasury, 2022.



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Box 6.C Options for Knowledge Asset exploitation – potential models

Internal – exploitation activity (including decision-making and investment) all within the organisation that holds the Knowledge Asset:

- reuse, develop or repurpose Knowledge Assets for use in another part of organisation
- priorities
- invest in the Knowledge Assets to make them both available to all in the organisation and more accessible

Cross-public sector – exploitation activity (including decision-making and investment) within the public sector, but cutting across more than one organisation:

- reuse or repurpose Knowledge Assets for use in another public sector organisation
- investment by another organisation in Knowledge Assets to make it both available to all and more accessible
- consider option to charge for access on cost-recovery basis
- transfer or share Knowledge Assets with another public sector organisation who is better placed to exploit it

External – working with external organisations to exploit IP:

- There are a range of commercial approaches to external exploitation, including sale of assets, licensing of assets, establishing a spin out or joint venture, more detail on which is provided later in this chapter and in [Annex C](#)
- In some cases these will involve contracting directly with existing third parties such as business, third sector, academic or other organisations
- In others, organisations will establish entities to exploit the Knowledge Asset
- Free access to 3rd parties can also be provided for example through an open licence

6.16. These options should also be appraised in terms of their value to UK society (and following Green Book principles). But this value can be social, economic or financial (and typically will be a combination).

6.17. These ways of deriving value should be considered in an appraisal of the options. This can be particularly challenging as there is often an interaction between these different objectives. More detail on how to navigate these considerations is set out in [Box 6.D](#).



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Box 6.D Considering social, economic and financial value when exploiting Knowledge Assets

In managing and exploiting its Knowledge Assets, the public sector will have to focus on social and economic, not solely financial, returns. In fact, its interest in generating financial returns is because these can be used to fund wider social and economic policy priorities.

Social and economic value can be quite long term and hard to quantify, and it is understandable that many organisations may feel they are unable to afford the development cost or protection costs of Knowledge Assets without a financial incentive.

Ensuring ongoing development of Knowledge Assets to maximise value may require obtaining a financial return from 3rd party use. Therefore, organisations should consider whether or not the public interest is best served by controlling access to the asset. There may also be other legal, propriety and reputational considerations to take into account in any decision on how best to develop, manage and exploit a Knowledge Asset, for example around the use of personal data or competition rules.

However, there are circumstances where an exploitation model that generates financial returns can deliver the greatest overall benefits. These include situations where one or more of the following is the case:

- A financially driven model enables the greatest overall impact (including social, economic and financial) by enabling initial investment and/or reinvestment of financial returns
- Financial return to the public sector organisation is potentially the most impactful outcome.
- The potential benefit to the economy from the exploitation of the asset is not significantly impacted by restrictions to access. For example, this may be the case where the likely market is characterised by a small number of large firms, who can afford to pay to use the asset, and where any savings from unrestricted access would be more likely to be reflected in increased profits rather than cost savings to consumers
- The asset needs public sector investment in order to be exploited more widely, which would otherwise not be prioritised without the possibility of future financial returns. This could apply to an existing asset as well as a future asset – the possibility of future commercial returns can support investment in better up-front design
- Commercial disciplines can be used to improve the quality and expand the provision of the product or service, by introducing better incentives or supporting investment



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The impact that a Knowledge Asset will have is difficult to predict - it could prove much more or less valuable than initially thought or impact a completely different market to the one anticipated. Consequently, there may be value to the public sector of retaining a degree of control over the asset even if this brings a smaller financial return in the short-term. For example, time-limiting a licence is a useful way to retain an opportunity to renegotiate the terms if the Knowledge Asset proves to be more profitable than initially expected or to adjust policy in response to any unintended impacts or distortions the Knowledge Asset has on a market. However sometimes licensees will push back against time limits and perhaps compromise will be required.

Overall, the assessment of the most appropriate exploitation route is complex and there may not be a clear 'right' answer.

- 6.18. At this stage, it is not necessary to undertake a detailed assessment of the options available. But some initial assessment, including about what investment might be needed to support development of the opportunity, should be done. As the iterative process continues, and the number of Knowledge Assets being scrutinised in more detail narrows, it can be useful to bring in some expert input. This will help ensure that:
- a good range of potential models for the management and wider exploitation have been considered;
 - there is an understanding of potential markets, beyond internal departmental market

Assessing potential and feasibility of the Knowledge Asset opportunity

- 6.19. As part of any initial appraisal, the delivery practicalities should be considered, including whether it is appropriate for the organisation to manage and exploit the asset in this way, and any legal issues that should be considered.
- 6.20. This should be part of iterative assessment, rather than a series of hurdles that any opportunity must pass in full at the outset. In practice, any opportunity will face some delivery challenges, and working these through is part of the development and exploitation of that asset opportunity.
- 6.21. The questionnaire outlined in [Annex B](#) provides a guide to the questions that an organisation should ask itself at this stage.



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The Re-use of Public Sector Information Regulations 2015

6.22. The Re-use of Public Sector Information Regulations 2015 sets out certain requirements around the re-use of accessible information held by public bodies for the purpose of their public task. Information within scope of the regulations encompasses data and literary, photographic, artistic and film/video copyright. Under the regulations this information must be available for re-use unless an exception applies. This means that it is generally not possible to charge above the marginal cost for re-use of this information, subject to a handful of exceptions for bodies whose business models require them to recover a substantial part of the costs of carrying out their public tasks (like Trading Funds or GovCos). Exclusive arrangements are also generally discouraged.

6.23. For an organisation looking to generate a commercial return on those types of Knowledge Asset that fall under the scope of these regulations, it should understand whether the information falls within its public task. The National Archives has policy responsibility for these regulations and provides guidance on the regulations and defining a public task for these purposes.^{18, 19}

Decision point

6.24. As part of this high-level assessment there will be one or more decision points to determine which opportunities should be pursued further. The key question that an organisation should be able to answer to move on to the next phase is whether, based on that analysis, they want to proceed to committing resources to develop a more detailed business case.

Stage 2 – Development of a business case

6.25. The development of a business case is a process that all public sector organisations will be familiar with. Some may have their own internal processes, but they will be based on HM Treasury’s Green Book.

6.26. The business case process is itself designed to be iterative, with cases developing from a Strategic Outline Case to an Outline Business Case and, ahead of execution, a Full Business Case. The process allows for a preferred option to be identified and then developed in detail. In the case of Knowledge Asset exploitation, in line with the principle of the narrowing of opportunities as set out in the concept of the funnel, the process should also allow for some opportunities to be dropped if they are eventually judged to be unviable. When considering protection, there should be a business case or a specific justification for why the cost should be paid, weighed against the potential benefits provided.

¹⁸ ‘Guidance on the Re-use of Public Sector Information Regulations 2015’, the National Archives

¹⁹ ‘Guidance to assist public sector bodies in defining and publishing a statement of their public tasks under the 2015 Regulations’, the National Archives



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6.27. ‘Internal-facing’, ‘cross-public sector’, and ‘external’ opportunities are helpful categories to use when thinking through the process of business case development, as they require different considerations.

Internal opportunity

6.28. Developing a business case for an opportunity that is focused on extending the use of the Knowledge Asset within an organisation should be relatively straightforward. There will be a well-established business case process through which it can be managed.

6.29. There may be some asset-specific considerations that the business case should reflect, for example around whether protection measures remain sufficient for a different use or security considerations around data. It is worth reviewing the section on the relevant asset or assets in [Annex A](#) to understand what a business case should consider.

Cross-public sector opportunity

6.30. Working across public sector organisations is often more challenging. It can be more difficult to identify the opportunity in the first place. But even after potential value is recognised by all participating organisations, experience shows that there are challenges around aligning objectives and governance and determining the right risk and reward structures.

6.31. The Lambert Toolkit developed by the Intellectual Property Office provides material to support collaborative working.²⁰ These are principally focused on working between business and academic institutions but can provide useful frameworks to support working across the public sector.

6.32. [Annex A](#) provides asset type-specific information which should be taken account of in a business case of this nature.

External opportunity

6.33. The third and potentially most complex category is an external opportunity, where management and exploitation may be undertaken external to government.

6.34. There are a wide range of methods of commercialisation that can be appropriate for Knowledge Assets. The most common forms tend to be licensing or sale of the asset, as they are simpler. However, other models, such as spin-outs or joint ventures can be appropriate. Expert advice is likely to be necessary to determine the appropriate path for any specific opportunities.

²⁰ ‘[University and business collaboration agreements: Lambert Toolkit](#)’, Intellectual Property Office, 2022.



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6.35. This may be done in collaboration with an external organisation such as a commercial partner or a not-for-profit partner, or by the public sector organisation itself. Clear arrangements will be needed to support a collaboration and it will remain important to consider any issues associated with the specific assets.

Licensing and Competition

6.36. It is important that any approach gives appropriate consideration to wider issues of subsidy and competition law, and that you seek legal and expert policy advice as appropriate.

6.37. IP rights can constrain competition in the marketplace. Competition rules should be considered when seeking to license government owned IP and choosing between exclusive and non-exclusive arrangements.

6.38. Non-exclusive arrangements allow licences to be granted to multiple parties, promoting strong competition. However, when licences are available to everyone, it is less likely that any licensee will be able to justify investing to further develop the Knowledge Assets, this is particularly relevant where the Knowledge Asset is a technology opportunity. Non-exclusive licensing is therefore perhaps best suited to mature IP that can be readily exploited.

6.39. Exclusive arrangements give a licensee a period of exclusivity in which to exploit the IP. This may enable them to invest more heavily in development and marketing activities, to produce a better product than would otherwise have been available. Exclusive arrangements are more useful for IP that needs further development and when the licensee would need commercial protection in order to make the required investment. Greater royalties can also usually be charged for an exclusive licence.

6.40. In practice, great care should be taken before granting an exclusive licence in public sector-owned IP, as such an arrangement would also exclude public sector organisations from using the licensed IP, including for continued research and innovation, unless this right was reserved. It is usually more appropriate to grant a “sole” licence which allows government to continue using the IP but reserves the commercial market exclusively for the licensee.

6.41. When considering the granting of licences, especially exclusive or sole licences, care should be taken to comply with the Re-use of Public Sector Information Regulations and Competition rules.

6.42. Where there is likely to be a wide range of potential licensees for a given Knowledge asset, public sector organisations should use a competitive process to select the best licensee.



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Development and exploitation with commercial partners

6.43. When it is envisaged that the opportunity will be pursued on a commercial basis, this will usually be done with a commercial entity, although there are a range of possible models. In this case, a business case should include a fuller analysis of the commercial value of the opportunity and how that would be realised. This includes:

- an analysis of the potential market
- evidence of commercial potential
- a marketing strategy
- an assessment of and lead option for the method of commercialisation

6.44. Approaches to asset exploitation with commercial partners vary greatly. Guidance is therefore of limited benefit at this stage, particularly as it would be expected that an organisation will have engaged some expert advisers to advise on more complex exploitation routes.

6.45. One consideration that may be common to commercial approaches is marketing activity as potential partners are identified and selected. It is important that this process is done on a competitive basis in order to be compliant with procurement, subsidy and competition rules.

6.46. In choosing a partner, an organisation should be looking for the partner that offers the best value for money for the commercialisation of the IP. This will include an analysis of the financial benefits, but also other aspects such as the expertise, reputation and an assessment of whether the chosen organisation is capable of fulfilling its obligations under any contract, to deliver the objectives of the commercialisation, which may be more than simply financial return.

6.47. It is also very important that an organisation puts in place the right resources for ongoing management of these contractual relationships to realise benefits, for example to ensure that licences are being used appropriately and delivering returns in line with those agreed under the terms of the licence.

6.48. It is also important to look at what investment may be required before a private sector partner can be brought on board. The organisation should acknowledge that such investments will have a relatively long pay-back and, while they should provide returns on a portfolio basis, the nature of the funnel means that many such investments will not provide any returns. This requires appropriate risk management but should not be a reason for an organisation to avoid making such investments. Some organisation will have established routes to market and links to potential commercial partners. However, for organisations without this access, the Government Office for Technology Transfer provides advice and networks, in the first instance, as well as links to sources of funding and investment, and will be a good place for organisations to begin any commercialisation journey.

6.49. More information on these different methods is provided in [Annex C](#).



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Development and exploitation with academic partners

- 6.50. Many collaborations involve an academic partner. There are a few additional factors to be aware of when engaging with a university or an individual academic.
- 6.51. Universities will have their own IP and commercialisation strategies and policies and will have offices to handle IP and technology transfer.
- 6.52. Universities and academics will wish to prioritise the right to publish their research, and use the results of a collaboration agreement for onward research, which should be carefully outlined in any collaboration agreement to ensure both partners have the freedoms they need to use any resulting IP.
- 6.53. This need to publish is a fundamental part of the purpose of a university, but publication can in some cases be delayed where it might be detrimental to IP protection.
- 6.54. Many universities permit their academics to undertake consultancy work on a private basis, and so any engagement with an academic partner should carefully consider the basis on which that partner is participating e.g. consider whether the arrangement with the university or with the academic in a private capacity, and any encumbrances arising from the academic's contract of employment.

Other legal considerations

- 6.55. It is important to have a legal team do a sense-check of any proposal and the business case as it develops, to ensure that you spot and allow for other possible legal considerations, such as general public law, the possible need for statutory authority, the public sector equality duty, the application of data protection regulations and more.

Decision point

- 6.56. If an organisation decides to execute the business case, this can trigger a further layer of investment, so it should be considered carefully and be subject to appropriate governance within the organisation.

Stage 3 - Executing the business case

- 6.57. The business case, if approved, should then be executed. The sections below describe the important of risk management and ongoing monitoring and management of the opportunity.



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Risk management

6.58. There should be a clear and transparent process in place to ensure that exploitation of the Knowledge Assets, as set out in the relevant business case, does not open the organisation to risks that are not appropriate for that organisation. A balance should be struck between securing value for money and impact from the Knowledge Assets, and the risks being taken on.

6.59. Organisations should also further refer to the Orange Book, which sets out the principles for the assessment and management of opportunity and risk within government organisations as an embedded part of, and not separate from, its management of tangible and intangible assets.²¹

6.60. The first step is to establish a clear statement of the management policy for the organisation, stating what types of exploitation they will and will not engage in. This will be dependent on the individual organisation and how exploitation will affect their end purpose. The goal should be to secure maximum value for money and impact without unduly impacting the business purpose of the organisation.

6.61. The second step is to ensure that the business case for any specific exploitation activity meets the overall policy and that all stakeholders agree this in this specific case. Each organisation will have different stakeholder's dependent on their activities.

6.62. The third step is to ensure risk is adequately managed in any agreements or legal arrangements entered into as part of the exploitation activity. When managing risks, it is important that any deviation from any standard provisions and commercial templates is agreed so that all stakeholders are happy with the level of risk taken.

6.63. Typical areas in agreements that should be agreed by the organisation at a policy level include:

- level of exclusivity of licences
- obligations and undertakings of the organisation to the other party
- warranties
- indemnities
- limits on liability

²¹ 'The Orange Book: management of Risk – Principles and Concepts', HM Government, 2023.



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Monitoring and management of Knowledge Assets

6.64. Organisations should record and regularly monitor their exploitation activities in a consistent and enduring form. This is critical for the ongoing management of valuable assets (e.g. what was licensed, to whom, on what terms etc.), ensuring:

- value is realised through agreements (e.g. when payments are made and milestones should be met)
- identifying opportunities for further value to be realised from Knowledge Assets
- enabling monitoring of outcomes to drive best practice, both within organisations and across the public sector

6.65. Knowledge Assets should continue to be managed throughout the development and exploitation process and post-adoption (whether across the public sector or by way of a commercial arrangement) to maximise their full social, economic and financial benefits.

Asset specific considerations

6.66. The process above describes a generic process that can be used across various Knowledge Asset types (but see note on Re-use of Public Sector Information above). Further details applicable to specific types of Knowledge Asset are given at [Annex A](#).



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Table 7.1 Further GOTT guidance

Product	Description
<u>Knowledge Asset Senior Responsible Owner: guide to appointing and the role</u>	This guidance is to help public sector organisations appoint a Knowledge Asset Senior Responsible Owner and to support new and existing SROs to understand their responsibilities
<u>Knowledge Asset Management Strategies: what to include and where to start</u>	This guidance is to help public sector organisations develop a KAMS and consider what is required to put this into practice to ensure effective Knowledge Asset management within an organisation.
<u>Managing intellectual property and confidentiality</u>	A practical guide to managing intellectual property and confidentiality for UK public sector teams.
<u>Annex A – Knowledge Asset classes and types</u>	Details and Knowledge Asset classes and types and how these can be protected.
<u>Annex B - Knowledge asset evaluation tool</u>	The Knowledge Asset assessment tool comprises of a questionnaire that should help public sector organisations elicit the information required to fill out an assessment of the potential social, economic and financial value of their Knowledge Assets.
<u>Annex C –Commercialisation Routes</u>	Details the different methods of commercialisation and when these may be used.
<u>Annex D – Knowledge Assets in Procurement</u>	This guidance sets out the key responsibilities and aspects to consider when procuring and managing contracts with potential Knowledge Asset implications.
<u>Annex E – Talent Mobility</u>	This guidance supports organisations to develop HR talent mobility policies that support the exploitation of Knowledge Assets.



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Product	Description
Example template KA register	This is a template for a Knowledge Asset register spreadsheet and is attached as an annex on gov.uk.
Guidance and support to apply for the Knowledge Assets Grant Fund	This is a central resource page giving you the most up to date links and guidance to applying for the Knowledge Assets Grant Fund.

Table 7.2 Other sources of guidance

Product	Description
IPO IP support website	Tools designed for businesses, business advisors, students, lecturers, civil and public servants although they will be helpful for anyone learning how to manage or use IP. Including: <ul style="list-style-type: none"> • IP Healthcheck • Lambert Toolkit • IP for Government
IP In Government eLearning on CS Learning: <u>Introduction to intellectual property (IP) in government – Civil Service Learning</u>	This is a module for Civil Servants and will introduce you to intellectual property and intellectual property rights (IPRs), discussing the significance of intellectual property in the workplace and the role of the Intellectual Property Office (IPO).
National Archives website	Best practice in records management and transfer, and information re-use.
Green Book	HM Treasury guidance on how to appraise and evaluate policies, projects and programmes.
Consolidated Budgeting Guidance	This document contains the 2023 to 2024 guidance for government departments on the budgeting framework that applies for expenditure control.
Managing Public Money	This publication offers guidance on how to handle public funds.



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This publication is available from: <https://www.gov.uk/government/publications/knowledge-asset-management-in-government>

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