The LUNAR WORKS | Tynos CONSULTING

Scottish AI Playbook:

User requirements mapping summary report
for The Data Lab Scotland & Scottish AI Alliance

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This report details outcomes of research to identify and map the user requirements of six key user groups for the proposed Scottish AI Playbook – a key deliverable for Scotland's AI Strategy.

The Scottish AI Alliance has already undertaken research to identify the primary user groups and to outline the first proposed tranche of Assets to be created within the Playbook.

The brief for this project was first and foremost to identify the extent to which users will use the Playbook assets (i.e. whether users perceive the assets will have impact and are usable); what are their needs and priorities and what are the gaps.

The Scottish AI Alliance reinforced the need for pragmatic outcomes – particularly to inform the first tranche of assets that are to be developed in time for launch in the first quarter of 2022.

Context:

This project sits within a wider policy and delivery landscape in Scotland on data, AI and related themes. Important elements include the development of a data maturity framework, an ethics framework and other related AI projects.

It was not within the scope of this project to consider how existing proposed assets or new suggestions arising from the workshops responded to this wider policy landscape. However, readers are encouraged to note that the Scottish AI policy landscape is well placed within the international marketplace as indicated by the market scan of AI Playbooks which we undertook in addition to the workshops (Appendix 1).

Methodology:

The methodology included 7 major stages: identifying where participants were in their own AI journey; determining 'pain points' for working with or 'in' AI; mapping pain points to the proposed Playbook assets; gap analysis; user journey mapping; assessing usability and impact of assets; and overarching reflections.

By 'peeling the layers of the onion' the methodology has generated practical responses from users at different parts of the user journey and these have been synthesised in this report.

The input from individuals within the workshop has been anonymised to reflect Chatham House rules.

User groups:

Each workshop focused on one of the primary user groups (Educators, Researchers, Entrepreneurs, Business User/Consumer, Third sector and Public Sector), with no more than eight participants. In some cases there were only four participants, given time constraints.

The size of the sample for each user group does mean that the outcomes of the workshop should only be taken as indicative of the needs of any particular user group. We would strongly advise that the outcomes of this process be further validated to correct for bias that may have crept in due to the small sample size.

Despite the small number of participants in each user group, the overarching themes that emerged were largely shared across groups (although understandably, individual user groups were focused on concerns that were particular to their market/industry position).

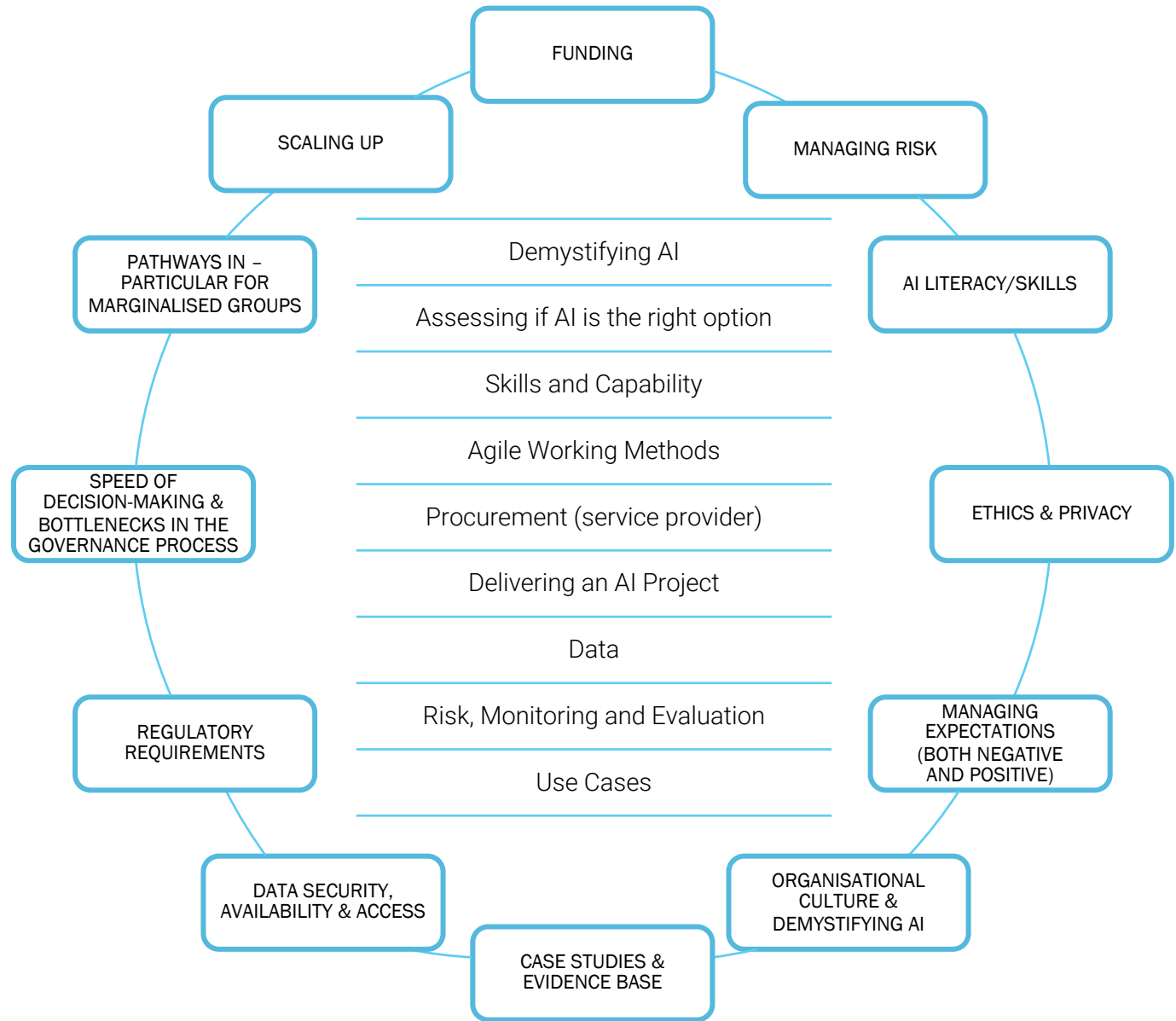# Pain points: mapped to key themes in other AI Playbooks

We asked each stakeholder group to describe barriers to achieving their goals in working with AI or in the development of AI. We grouped these barriers into collective 'pain points'.

These pain points match closely with the findings of our research on the focus of AI Playbooks internationally.

The international market scan revealed nine key areas that AI Playbooks were responding to (whether designed for the public or private sectors). These are highlighted at the centre of the diagram.
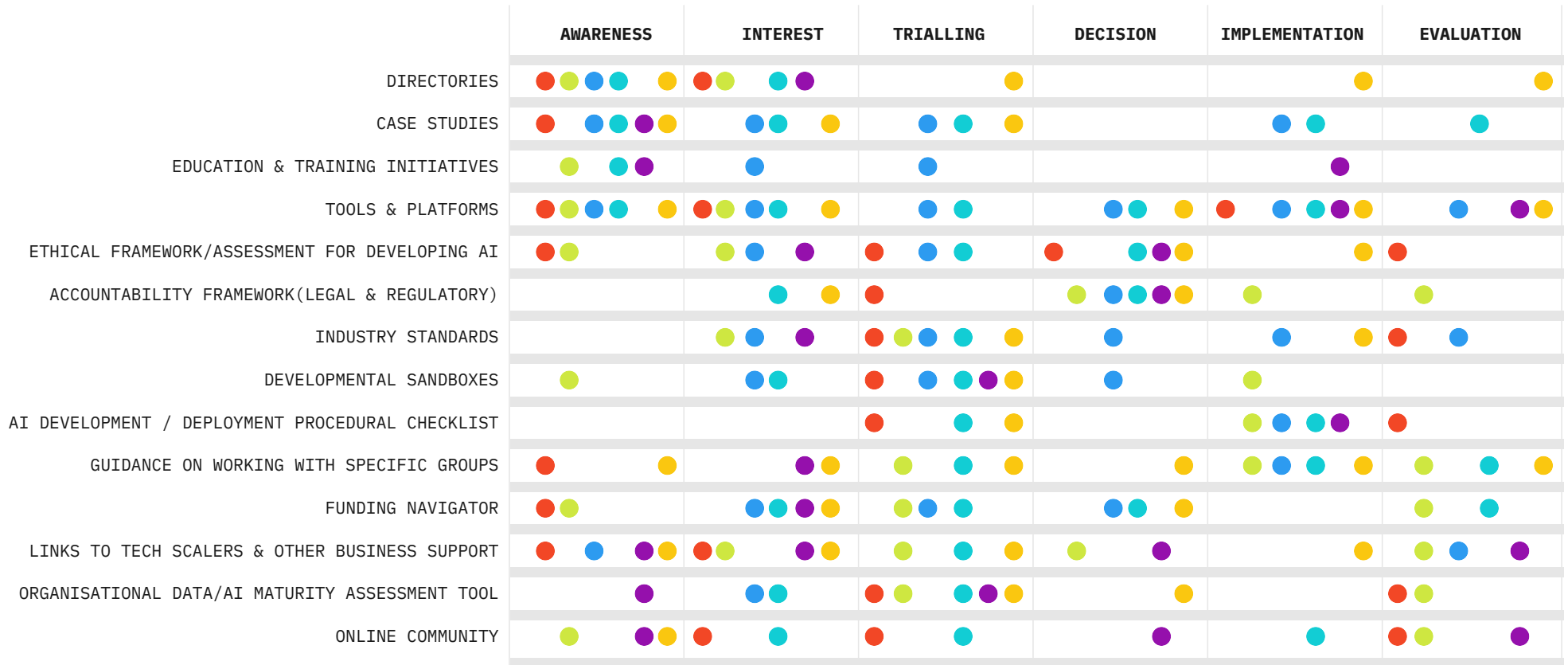
Further information about these nine key areas is shown in the Appendix.

The commonality between pain points identified by Scottish stakeholder groups and the themes of Playbooks internationally indicates that our stakeholder sample, though small, reflected issues in common with a wider market.

Central diagram items:
- FUNDING
- SCALING UP
- MANAGING RISK
- PATHWAYS IN – PARTICULAR FOR MARGINALISED GROUPS
- AI LITERACY/SKILLS
- SPEED OF DECISION-MAKING & BOTTLENECKS IN THE GOVERNANCE PROCESS
- ETHICS & PRIVACY
- REGULATORY REQUIREMENTS
- MANAGING EXPECTATIONS (BOTH NEGATIVE AND POSITIVE)
- DATA SECURITY, AVAILABILITY & ACCESS
- ORGANISATIONAL CULTURE & DEMYSTIFYING AI
- CASE STUDIES & EVIDENCE BASE

Centre list:
- Demystifying AI
- Assessing if AI is the right option
- Skills and Capability
- Agile Working Methods
- Procurement (service provider)
- Delivering an AI Project
- Data
- Risk, Monitoring and Evaluation
- Use Cases

Using the AI Playbook assets – the user journey

We asked participants to map when they would use the potential Playbook assets in their user journey towards implementing AI, from Awareness through Interest, Trialling, Decision-making, Implementation and Evaluation.

KEY:

● EDUCATORS ● RESEARCHERS ● ENTREPRENEURS ● BUSINESS USERS/ CONSUMERS ● THIRD SECTOR ● PUBLIC SECTOR

User requirements map: a digested summary of assets

We have mapped comments against proposed assets, including potential inclusions.
Suggestions beyond the scope of the Playbook are shown in italics.

Industry Standards (sector specific):

- Emphasise Scottish AI sectoral strength outwards and how to engage with international initiatives and partners regionally and nationally.

- Include an international market scan to help developers position their products in the context of competition and opportunity.

- *Consider ways to address challenges for standardisation of technical elements across sub-domains (e.g.. specific data categorisations).*

Accountability Framework: Legal & Regulatory

- Create a multi-perspective tool for considering IP issues and the differing lenses of the customer and the developer.

- Provide a how-to guide or toolkit for the contractual landscape – with a focus on what's needed for AI enabled tech.

- Include tips on ways to work with innovators within procurement rules.

- Include a guide to positive risk taking to try new approaches (include a balanced risk matrix tool).

- Connect to or develop AI focused procurement guidance for the public sector.

- *Consider ways to streamline the current complexity of the procurement process within the public sector for AI (information governance).*

- *Consider ways to create more agile procurement still within strict rules/parameters within the public sector.*

- *Consider a centralised service for management of information governance in the public sector procurement of AI.*

Directories: a) Services, Contacts, Skills Providers; b) Data & Professional Development Directory

- Enable ways for business experience, credibility and stage of development to be made available as part of due diligence on companies.

- Create a first port of call for public sector organisations looking to embark on AI journey.

- Consider creating an active membership process for business entries so that directories are up-to-date annually.

- Highlight ways in which researchers can collaborate on new problems and ideas - discoverability of skills and expertise *[matchmaking tool]*.

- Enable ways to connect tech requirements and providers with projects-focused delivery teams (who may be non-technical) *[matchmaking tool]*.

AI Development / Deployment Procedural Checklist:

- Develop a typical AI innovation lifecycle: moving from idea to testing, finding partners, staff, trialling, proof of concept, business case, ethical decisions, implementation - storyboarding from high level to drilling down into more detail

- Incorporate or link to a service design tool into the journey and any other ways for opening up creativity

- Highlight the need to set realistic expectations and to not over sell.

Scottish
AI Playbook

We have mapped comments against proposed assets, including potential inclusions.
Suggestions beyond the scope of the Playbook are shown in italics.

Guidance On Working With Specific Groups:

- Include a guide or process for bias awareness when working with specific groups or in developing products for specific groups and the obverse (to ensure inclusion).

- Include a focus on communications on the use of data and AI with young people / communities.

- Include or link to diversity training for developers, procurers, users of products developed for specific groups (or for inclusion).

- Consider a 'where to start' navigator for different communities and users.

- Include links out to other successful playbooks focused on specific groups.

- Consider online and *offline* navigators for hard-to-reach groups.

- *Consider the potential for a Kitemark for algorithms that don't stigmatise.*

Case Studies:

- Include detailed stories to help the reader identify practical examples of what they could do via the experience of others.

- Move from general principles to examples to give tangible support.

- Address common concerns such as staff worried about the impact of AI on their jobs.

- Highlight how best practice ideas can be both shared and scaled.

- Show failure as well as success.

- Recognise through case studies the potential pitfalls of projects – for example that AI can be high maintenance, and that there is a need for constant monitoring for data drift etc.

- Highlight the potential for unrealistic project timeframe expectations – it might take 2 or 3 times longer than some stakeholders expect.

a) Education & Training Initiatives, and
b) Online Community:

- Highlight peer support resources.

- Focus on positive outcomes and change.

- Respond to/reflect the challenge of staff turnover and changing priorities (e.g. Covid-19 repurposing etc). Staff have to be agile but knowledge / learning may be lost.

- Acknowledge the importance of keeping the human 'in the loop' and identify ways to value human skills within the ecosystem – in terms of new skills and existing expertise.

- Consider how to manage the impact of changing ministerial/ government priorities within the Playbook.

- *Consider common definitions for AI across sectors – perhaps within a common platform.*

- *Consider developing a standard model for University spin-outs.*

- *Find ways to address the generational skills gap.*

- *Consider developing/highlighting low-cost ways to connect businesses to skilled prospective employees.*

- *Consider an AI Manifesto for the Education Sector.*

User requirements map: a digested summary contd.

We have mapped comments against proposed assets, including potential inclusions.
Suggestions beyond the scope of the Playbook are shown in italics.

Sandboxes:

- Private sector sandbox has challenges due to questions over ownership of the IP, sharing and right to use data.

- Consider the option for a third sector sandbox.

- Consider how to address the question of data quality and people's perceptions of data.

- Consider an AI data readiness assessment tool.

- Consider how to address data inequality in design of tech / services.

- Consider how to manage expectations around use of sandboxes – i.e. data quality is dependent of quality of input.

- Consider new forms of collaboration on AI – for example data spaces.

Links to Tech Scalers and other Business Support:

- Consider templates or guides for formal project frameworks / roadmap (AI focused).

- Consider guidance on turning aims into practical supporting activities - how can this be implemented quickly with an AI innovation?

- Consider links to qualitative as well as quantitative evaluation.

- *Develop AI focused guides or toolkit for developing business cases and measurable objectives to manage / address risk, and for measuring success in particular sectors and areas.*

Funding Navigator:

- Highlight funding opportunities and matchmaking with businesses / start-ups – and consider developing or linking to a matchmaking tool.

- Consider links to financial modelling relevant for AI projects or a toolkit.

- Include links to funding applications.

Ethical Framework / Assessment for Developing AI:

- Highlight how companies working internationally can work ethically in the context of competing markets where ethical requirements might be different.

- Develop/link to a guide or a process tool on how to avoid selection bias.

- *Consider creating a locator guide or tool for accountability at different points in a project and from different perspectives - who is responsible and when, ethically speaking (this could be linked to, or part of, an ethical audit trail tool)?*

- *Consider creating a philosophical testing ground to test novel ethical scenarios.*

Conclusions

Highlights and high notes

Participants were thoughtfully enthusiastic about the Playbook concept overall. Most proposed assets were welcomed and prompted discussion about what else to include, rather than what to exclude or alter. The plethora of comments made by participants shows that there is a lot of scope in the burgeoning AI sector and beyond for additional support, networking and guidance.

Participants recognised the challenge of delivering a product that is usable and pragmatic within the timeframe allowed for the Playbook to be actualised.

The range of suggestions that have been collated in this report must be seen as reflections on what the AI sector could benefit from under ideal conditions, and not what should be developed within the first tranche of Playbook roll-out.

Practical issues concerning the Playbook

Some key practical issues arose during the workshops relating to asset relevance, accuracy and inclusion. These focused on how the assets and the Playbook would be kept up to date, and therefore whether it would be accurate and relevant for users and for those companies and institutions referred via directories. In particular, concerns about usability of specific assets was highlighted as an impact of any ambiguity over whether a piece of guidance or advice is accurate and up-to-date (for example in relation to guidelines for working with children).

The practicality of using the playbook for specific groups was also raised and relates not just to the logistics of accessing the information and material within the Playbook, but also whether the Playbook has been designed with specific groups in mind.

What are the provisos from this research?

The sample size of the priority stakeholder groups was very small and so the outcomes of the workshops, while instructive, cannot be taken solely at face value. Further work to validate these findings is needed.

It might be possible to undertake this as part of the iterative development of assets given the time constraints for the overarching project.

Similarly, it is clear that some proposed new assets are likely to be already under consideration by the Scottish Government (a Data Readiness Assessment tool for example).

It has not been possible to do a detailed mapping project of the new proposed assets against work being proposed or being undertaken inside government or within Scottish AI Alliance or elsewhere.

Clearly, not all comments fall within scope of the AI Playbook.

Thank you!

Thank you to all who gave up their time to participate in this research. Each of the workshops were lively and participants worked extremely hard.

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Appendix 1: Key points from international market scan

AI Playbooks created by government, business and research institutes operationalise AI adoption and ambitions by guiding the intended audience through the strategy, planning and resources available to achieve efficient and effective AI adoption and integration. The research analysed AI Playbooks produced by the UK, US and Finnish Government; private sector data and AI leaders, Landing AI and Dataiku; and research institutions including the Ada Lovelace Institute and AI Now. Although the research did not identify any AI Playbooks (or similar formats) that catered to all three target audiences, nine common sub-themes were identified.

These are as follows:

1. **Demystifying AI:** Playbooks begin by defining AI technologies, with a focus on deconstructing the various facets and applications of Machine Learning. While some take a more detailed approach, others have opted for a basic definition, i.e. AI as data utilisation and digitalisation.
    See: FAIA AI Playbook (Finland), p. 6 – 22

2. **Assessing if AI is the right option:** Once the reader is familiar with the basic definition and use-case for AI in their sector, they are encouraged to assess whether AI is the right decision for them. This can take various forms such as online assessments, detailed case-studies, storyboards, and interactive checklists to help them assess the value of an AI pitch.
    See: AI Playbook for the U.S. Federal Government, Online Assessment

3. **Skills and Capability:** Tackling the digital skills divide is a consistent challenge across all three sectors. Here the focus should be on encouraging organisations to hire specialist expertise as well as invest in Learning and Development (L&D) plans to build capacity in the whole organisation. Strategies to help organisations understand return on learning (ROL) as well as educational resources are useful here.
    See: Elements of AI Online Course , Teachable Machine , Coursera , edX , FutureLearn

4. **Agile Working Methods:**
    Agile management methods are used specifically for software development projects as they allow for greater flexibility and responsiveness to developments in the product life cycle. To deliver an AI project, an organisation must be comfortable working in agile interdisciplinary teams, which requires room for experimentation and investment in training opportunities. The challenge to organisations culture should not be underestimated as is one of the main blockers to the adoption of AI technologies.
    See: Agile Delivery (GDS) , Overcome tradition: Scale AI value with Agile AI

5. **Procurement (Service Provider):** Ethical adoption of AI technologies is based on transparent and accountable procurement processes. Helpful tools here can be example service provider agreement and terms, as well as research pieces and on ensuring ethical data use and collection.
    See: Choosing technology: an introduction (GDS) , Guidelines for AI procurement

6. **Delivering an AI Project:** Once a use case and AI solution has been identified, a clear plan will identify the stakeholders, skills and capacity needed to deliver the project. Approaches vary across sectors but broadly cover the problem assessment, organizational readiness, solution selection, AI implementation and AI integration. Guidelines are more accessible when focused on executing small-scale pilot projects that help gain momentum and trust in AI solutions. Supporting materials can include how to write a persuasive Proof of Concept (PoC), how to identify a Minimum Viable Product (MVP) and key skills needed to build an in-house AI team.
See: Landing AI Transformation Playbook, AI Playbook for the U.S. Federal Government, Online (Assessment-Integration)

7. **Data:** One of the biggest challenges for organisations is related to the quantity and quality of data. Therefore, guidance on how best to understand your data reserves, needs and labelling is essential to a successful and accurate AI solution.

This is also an opportunity to signpost key ethical considerations to using AI as well as UK GDPR requirements. Public transparency and accountability controls are a challenge for all sectors. Guidance on how to set up clearly defined data governance structures, consistent terminologies and policy mechanisms that are audience appropriate could be included in this section.
See sources below.

8. **Risk, Monitoring and Evaluation:** When an organisation is ready to integrate AI solutions more broadly into their organisation, a recommended starting point is developing an internal AI Strategy and Theory of Change (ToC). This is helpful in drawing the parameters of what type of initiatives to encourage, fund and deliver. An AI Strategy will also summarise an organisation's risk appetite and help identify suitable metrics for assessing the success of your projects.
See: AI in the Public Sector Playbook , ICO AI & Data Protection Risk Mitigation and Management Toolkit , Understanding AI Ethics and Safety

9. **Use Cases:** Most useful examples are accompanied with additional comments and reflections from experts that can break down the lessons learned (e.g. Finland). End-to-end narratives are also useful in breaking down the complexity of AI systems.
See: FAIA Your Guide to Speech Processing, 20 Use Cases, p.10-14