**WB401 Investigating Work- Based Learning and Self-Review**

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# Introduction

This report highlights the business strategy and structure of STFC (Science and Technologies Facilities Council), the key competencies required for the role of apprentice software developer and how it compares to the apprenticeship standard as well as the relevance of apprenticeships in STFC. A reflection will also be conducted on an issue within this organisation that could be improved, in this case it will be the daily stand-up meeting that are conducted within CEDA (Centre for Environmental Data Analysis). The report is split into 3 sections.

# Main body

## Organisation overview

UKRI (United Kingdom Research and Development) is the organisation directly below the government Department for Science, Innovation and Technology which oversees the country’s research. The goal of UKRI is to improve the seven research councils below it (including STFC) to become more attractive to private research. It aims to achieve this by implementing a six-objective strategy:

* Making the UK the top destination for talented people and teams.
* Securing the UK’s research position with outstanding institutions, infrastructures, sectors and clusters across the breadth of the country.
* Advancing the frontiers of human knowledge to seize opportunities from emerging research trends.
* Delivering the government’s vision for the UK as an innovation nation.
* Focusing the UK’s world-class science and innovation to target global and national challenges.
* Make UKRI the most efficient, effective and agile organisation it can be.

(Leyser, O. Mackenzie, A, 2022)).

Part of this strategy is to have talent continue to join the organisation “Apprentices in particular are vital to ensuring a pipeline of incoming talent to the STEM sector and ensures that we have a fit for purpose workforce” (see Appendix 1). The structure of UKRI includes sever research councils including STFC with RAL Space (Rutherford Appleton Laboratory) under it and CEDA under that, with CEDA being the focus of this report.

A diagram of a company

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Figure 1: A brief visual representation of the organisation position of CEDA in relation to other entities.

## Role and competencies

The role I have in the organisation is titled “Apprentice software developer”. When asked about the key competencies required for my role a co-worker who is a software engineer replied with a list of skills “problem solving, programming with python, command line proficiency, git” (see Appendix 2). These are the key skills required for software development which are learnt either before or during the apprenticeship. A few key competencies include communicating with all types of people (technical and non-technical background), the ability to work well in a team and to work well independently and know when to ask for help (Chipperfield, 2023). The apprenticeship standard also has similar required competencies, for example in the Digital and Technology Solutions Professional Level 6 apprenticeship (the one I am doing), the standards are “Reliable, objective and capable of both independent and team working.” And “Interacts professionally with people from technical and non-technical backgrounds. Presents data and conclusions in an evidently truthful, concise and appropriate manner.” The more specific aspects of this includes creating effective programs, testing and reviewing code and analysing code (Institute for Apprenticeships and Technical Education, 2019).

The relevance of the apprenticeship standard to my role is that it is what I need to be able to complete the jobs I am given, for example I need to be able to talk to other developers in order to get new tasks and information on those tasks so that I can work on them either independently or as a team. Therefore, the standard is essential to my role as without the skills on it I would not be able to do my job. The apprenticeship standard is important to the organisation as training people to work in STEM (Science Technology Engineering and Maths) aligns with their business strategy to support the full range of talent required to grow the UK’s talent base and ensure the UK is a magnet for global research and development (UK Research and Innovation (UKRI), 2022).

## Workplace improvement reflection

An issue I have picked up on while working for CEDA is the daily stand-up meeting we do and how they are organised. They last around fifteen minutes every day from ten o’clock and during that time we give a brief description of what we are going to be doing during the day. This is the same every day except on Tuesdays when that meeting is extended to being thirty minutes and we go into breakout rooms after the first part is over and we share interesting pieces of code we might have. This sounds quite useful until you realise that talking about what you will do today is not very helpful and can only be interesting to some people who know what the others are talking about meaning new starters are completely in the dark. However, for the first few days after someone just joined the team, we would give slightly more detail, but it does not last very long and once people move on to a new project, they will not know what they are talking about again. The meeting being then also does not give very much time to get into the flow of working from when you start, I find that I am working smoothly and then I realise that I have a meeting, this breaks up the momentum of the work and is not very useful. A Software Engineer co-worker along with others also think that something should change regarding the daily stand-up “I think it has a tendency to not be very useful if everyone just shows up and says the bare minimum about what they are working on, as opposed to what their problems/roadblocks have been” (see Appendix 3). This does not happen because the meetings are so frequent that they try to get their part done fast and people tend to talk about their roadblocks either on super-code Tuesday or in a slack chat because its more convenient for them as they can get on with other work while they wait for a response. This daily stand-up closely adheres to the scrum meeting structure (what they did yesterday, what they are doing today and are there and impediments in the way) (Mountain Goat Software, n.d.). However, the team does not stick to this and only gives brief descriptions as the team is quite large so it can take time to complete and as such most people tend to ignore the final point unless it was important, or we would go over the allotted fifteen minutes.

Using the Gibbs reflection model (Gibbs, 1998), I can give a good example of a stand-up that I attended on the 31st of July 2023. (**Description**) It started as a normal stand-up where we each gave a brief description of what we were working on, there were more of us than usual that day so it took longer and then a few people started to discuss an event that was coming up and how they should prepare, the meeting ended up lasting twice as long as it normally does, it ended when those people said they would take the meeting and complete it elsewhere. (**Feelings**) I was feeling a bit impatient because I knew the event was unlikely to affect me and I wanted to get back to work, other people might have felt the same as me (for example, new starters), (**Evaluation**) but others needed to hear it and may have been grateful that they could contribute to the discussions. It was unfortunate that it took a long time for the meeting to be over but for the people involved it was very useful to hear. (**Analysis**) While the discussion with the whole staff was useful as people could contribute if they had something to say however if a person had nothing to say and was not going to be affected by the event then they had to sit there and just listen. (**Conclusion**) This all helping to solve the problem is useful and should be done more often however most of the stand-ups are not helpful to anyone. (**Action plan**) What we should have done is to get the people who would not be affected by the event or did not have anything to share to leave the meeting sooner than it did happen, meaning someone needed to speak up and say that the meeting should disperse.

Instead of having a meeting every day that disrupts the workflow and does not achieve very much, they could be replaced by one larger meeting every Monday or Friday morning that discusses what people were struggling with during the past week and get help by going into breakout rooms to help each other and then spend the rest of the day if necessary to fix your own errors after the meeting concludes. This would remove the many workflow breaks during the week and would significantly improve the usefulness of the meetings. When asked about the changes the same co-worker agreed that having a roadblock meeting every Monday could be a good alternative (see Appendix 4)

# Conclusion

In conclusion, the current daily stand-up meetings should be replaced with a larger meeting at the end of the week to highlight what people struggled on and so that colleagues could help them find a solution for them to implement during the day. This would remove the workflow breaks during the week due to the stand-up and would be more useful to staff than the current stand-ups.

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# Appendix

Appendix 1 – email from Louisa Chipperfield (Chipperfield, 2023)A white background with black text

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Appendix 2 – slack message from Jack Leland (Leland, 2023):

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Appendix 3 – slack message from Jack Leland (Leland, 2023):

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Appendix 4 – slack message from Jack Leland (Leland, 2023):

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