

## **RMPP Research Proposal Outline – week 8**

My understanding of this assignment is that it is merely a proposal for a topic that we may choose to study for the Master's Thesis and that it is not locked in. The main point of the assessment is to show that we have understood and can apply a structure to the work.

I am sure that I will write on the topic of CLOUD (assuming it gets approved), but the exact detail of it could very well vary from this proposal.

### **Title:**

Adoption of the CLOUD for data storage: how secure is this data before, during and after migration, and risk to data security versus “on-premise” storage.

### **Summary of Thesis:**

I intend to write about the common theme of data migration from Enterprises, to the CLOUD Service Providers i.e., AWS, GCP, MS Azure etc.

I will evaluate current perceived strengths and weaknesses of the CLOUD as a solution, and try to identify any weaknesses that could be improved on. These values will be evaluated in contrast to keeping the data under local control of an Enterprise, for example, in a Data Centre.

It is possible that I would also include personal data storage, such as iCloud and Google Cloud for Smartphones, as the concept is essentially the same just on a smaller scale.

### **BCS/CyBOK Requirements:**

As this Research thesis would be part of a Cyber Security MSc, it needs to fall into a CyBOK knowledge Area. CLOUD services would fall under the Distributed Systems Security tree, with some of the topics reaching into some of the other relevant branches as well.

### **Relevance:**

This is relevant to Industry, as many Enterprises are moving completely, or in a hybrid manner to CLOUD computing. This could potentially introduce additional risk, as there are many different management models, such as Paas, IaaS and SaaS, all with differing levels of control.

From a personal perspective, the relevance would be that many modern smartphones, backup their data to the relevant CLOUD. This is done with trust on the part of the user, without really knowing what measures are being taken to secure the data – evident by data breaches etc.

### **Introduction:**

What is it?

Why are Enterprises doing it?

Why do individuals do it?

What are the pre-conceived risks associated with it?

### **Research question:**

Is confidential data generally safer when it is held in a Service Provider CLOUD, or when it is under direct control from an Enterprise “on premise”?

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Or

Is confidential data generally safer when it is held in a Service Provider CLOUD, or when it is under direct control from an Enterprise “on premise” or when there is personal responsibility for backup/restore etc of personal files (files, photos etc etc)?

### **Aims and Objectives:**

For an Enterprise, the goal would be to try and establish, if there is any more inherent risk of the CLOUD for data storage, where Security is potentially being managed by the Service Provider, vs having the data held locally, and managed by the Enterprise (or their Partner) in a local DC on their own Servers. Backup and restore processes, availability also need to be assessed if possible.

If research were to be performed from a personal perspective, it would be CLOUD vs local PC, with essentially the same constraints for backup and restore.

### **Key Literature:**

Existing literature would be collected from as diverse sources as possible. There is likely to be a lot of information available in the Corporate IT world regarding these topics, but care should be taken to avoid bias.

Full literature review would need to be performed to ensure that this question has not already been satisfactorily answered and accepted by the business community.

### **Methodology:**

- Research would begin with the literature review to try and establish what is already known.
- Survey would be created with a mix of quantitative and qualitative questions. Need to think about how to do this, and what the target audience would be – technically skilled IT person or not.
- Analyse data to see patterns or not in responses.
- If possible, use statistical analysis to support.
- Conclusions. Present conclusions based on data obtained through all methods above. Include any challenges found with data analysis.
- If appropriate, present recommendations and/or summaries of data collected, or for further study options. Not sure about this, as I don’t know if it is appropriate to present further study opportunities in a paper of further study.
- Include a full list of references

### **Ethical considerations:**

For this section, I think that the ethical part is that any questionnaire is as unbiased as possible, and that subsequent data analysis and report are also unbiased.

### **Risk assessment:**

I don’t know how a risk assessment fits in a paper of this type. Some of the modules for my BSc required some fieldwork, so it was clear what was needed.

**List of Artefacts:**

- Questionnaire/survey
- Potentially statistical report/s