SWEN30006 Software Modelling and Design
Workshop 10: Architecture

School of Computing and Information Systems
University of Melbourne
Semester 2, 2020

Exercises 1 and 2 have been separated out so that in exercise 1, you can concentrate on understanding the drivers for the architecture, generate alternative options, and consider the pros and cons of the different options, without concerning yourself with the UML modelling details of exercise 2. Exercise 2 then is really about understanding the component diagram notation, and applying it to this particular example.

General Comment

1. External elements should already have been identified (e.g. credit check agency, the security subsystem). The architecture will need an external interface to all such elements.
2. The logical elements of the system should be assigned to the layers of a layered architecture. The horizontal partitions within the layers should also be considered. This should be done without influence from where these elements will be deployed (i.e. from the physical architecture).
3. Architectural factors worth considering (how critical are each of these): need to support multiple MSTs; credit checks (reliability and security); security release of purchased items (reliability and security); logging of sales (data security and integrity); updating of inventory (data security and integrity)
4. We know the deployment architecture needs to support multiple MSTs. Do we need anything else? We can think through the options from thin client (e.g. a web interface only on the MST) running on the MST through thick client (e.g. mobile app processing most sale elements on the MST, but with a server for logging sales), through fully distributed peers (e.g. including sale logging duplicated across all MSTs , or logged to one special MST). What are the pros and cons of the options?
    - All activities are initiated from the MSTs, but that doesn't mean that control has to remain with the MST. If the MST is a thin client, control will be on a server. If the MST is a thicker client, then there is a choice as to how control is assigned.