1. 文中提及cost的部分：

（1）It is important to point out that the budget for LASCAD was much lower than that for the failed computerized dispatch system attempted earlier by the LAS in the 1980s. By the time the project was cancelled, the accumulating costs escalated to £7.5 million. Yet, the LAS estimated the cost of the new version, which was more technologically advanced than the failed one, to be only about £1.5 million. Perhaps, the LAS did not employ an analogous approach for cost estimation, which relies on the actual cost of similar historical projects (Heemstra, 1992).

One possibility is that the LAS might have employed bottom-up cost estimation. In this approach, the cost of every individual component is estimated first. The individual costs are added to estimate the total cost (Boehm et al., 2000). Even if such an approach was followed, it is appalling to note that the budget allocated for the software component of LASCAD was only £35,000, less than 5% of the total estimated cost while the rest was reserved for hardware. In a supposedly software-intensive system, the software component of the project was ironically just a cheap throw-in in a hardware-centric deal with a hardware supplier. This is an example of a gross mistake in managing costs, and poor budgetary control (Dalcher, 1999; Dobson, 2007). On such a shoe-string budget, LASCAD was never financially feasible in the first place.

需要指出的是，LASCAD 的预算远低于 LAS 在 1980 年代早期尝试的失败的计算机化调度系统的预算。到项目取消时，累计成本已上升至 750 万英镑。然而，LAS 估计新版本的成本只有大约 150 万英镑，新版本的技术比失败的版本更先进。或许，LAS 没有采用类似的成本估算方法，该方法依赖于类似历史项目的实际成本（Heemstra，1992）。

一种可能性是 LAS 可能采用了自下而上的成本估算。在这种方法中，首先估计每个单独组件的成本。将单个成本相加以估算总成本（Boehm 等，2000）。即使采用了这种方法，令人震惊的是，分配给 LASCAD 软件组件的预算仅为 35,000 英镑，不到总估计成本的 5%，而其余部分则用于硬件。在一个所谓的软件密集型系统中，具有讽刺意味的是，该项目的软件组件只是与硬件供应商进行以硬件为中心的交易中的廉价投入。这是管理成本和预算控制不力的严重错误的一个例子（Dalcher，1999 年；Dobson，2007 年）。在如此微薄的预算下，LASCAD 一开始在财务上是不可行的。

（2）文本

描述已自动生成

1. 课后练习提及cost部分

（1）文本

描述已自动生成

（2）文本

描述已自动生成

3. Conclusion

（1）没有采用专门方法估算成本或者采用bottom-up方法（但是在相加各组件成本时极大低估了individual costs）。

（2）在之前项目失败的基础上没有吸取经验，在系统更复杂（more functions），时间更紧迫（6 months）的项目中提出了非常低的预算1.5million，对比之前失败项目7.5billion

（3）因为预算很低，在供应商选择上，the priority was shifted to cost consideration over ability when the management insisted on an estimated cost of 1.5 million. The proposal cost of vendor was ridiculously cheap but did not trigger any alarm bells. 而且简单接受了供应商报价，没有check可行性

（4）在软件密集型项目中选择了硬件供应商，并由该供应商选择软件服务公司。这种硬件服务商占有主导权的情况下，不合理地将不到5%的经费分配给software