General Comments

This year's Autumn's results were not good, with many getting "F", but that may be because many more than usual had passed during the summer, and those who failed this exam had not really worked hard on this subject. This is a final year subject, and so it is not possible to get through without taking it seriously. There was one very good "A". Possibly that person did not do it in the summer, or did not work on it for their previous attempt. Unlike recent years, when the case and the theory were done well while the quantitative questions were not done as well, in this exam none were really done well. The theory and case are simply a matter of study, practice and hard work. I will focus on the more quantitative aspects in this report.

The quantitative sections contain relatively predictable applications. Section C always has a question on Inventory, which most people did. In this paper, Section D had a standard question on linear programming and one on transportation.

The way this course and exam is structured requires one to first explore the theory, then the techniques and finally how to apply the ideas in practice. This follows a learning cycle. Ideally people should look at the cases early on to get an idea of the types of problems that occur. These are mixtures of marketing, logistics, mathematics and strategy. Subsequently one should get into the theory, but not spend the year learning it off. Students generally have a clear understanding of what is in the text and some practical illustrations from outside, including from Irish applications. The middle part of the year should be spent on the quantitative techniques, hopefully linking them into the cases and the theory, and anecdotes about Irish companies where possible.

People who failed invariably did two or three sections poorly and were not able to compensate from another section. It is safer to prepare all the sections.

The case questions are designed to bring one through a process of analysis, evaluation, diagnosis and prognosis. Most people seemed to have not prepared the case section well. It should be understood that Logistics is important not just of itself but also because it requires one to put on one's quantitative thinking cap when addressing marketing problems.

Quantitative questions

Firstly, before I get into specifics, I would like to emphasise that there is no need to do rough work and then write your answer out neatly. It wastes your precious time. Do the question as best you can. If you think you are making a mistake say so, and try to correct the mistake. If you blank out,

just leave two pages so that you can move onto other questions. Maybe later you will be able to do the rest of that question. Do not waste your time doing restarts.

The idea of having two different quantitative sections is to separate the less standard from the standard, the unstructured from the straightforward application of algorithms.

Section C contained question on **stock (inventory) control**. This is a long section in the text and likely to occur every year. Generally the key to my seeing if inventory is understood is to put in something unusual and to require a calculation of total costs. Keeping one's head is critical.

There was considerable variability in the quality of answers. Most people got the first part right, getting the economic order quantity of 632 units for Widgets, and 775 for Gadgets. Generally the key to my seeing if inventory is understood is to put in something unusual and to require a calculation of total costs. Many people got the total inventory related costs. The dividing line was forgetting to include the supply costs. These are needed because the alternative is a fixed price for getting both products together.

Most people missed the point that the economic order quantity formula is not relevant for the combination because they are to be supplied monthly. This kind of error reveals the difference mentioned above between understanding what is going on and just plugging figures into formulae. Thus the cost of ordering is fixed based on 12 orders per annum, and the cost of storage is based on combining the two into one. Dividing the difference between this result and the current total costs by the total demand gives the suggested marginal price at which point the company should changeover or not to the new system.

Section D: Standard Quantitative questions
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The **transportation** question was an application which few people did well. Many even ignored the need for a dummy depot.

The other question in Section D was a standard application of **graphical linear programming** including minimum (greater than) constraints, and with sensitivity analysis. As I said before it seems to have not been well prepared generally. This is not a simple procedure; one must develop an understanding of the technique. The basics are straightforward. 1. Develop the constraints. 2. Draw the graph. 3. Find the corners most likely to be best. 4. Put these into the objective function to get the best one. 5. Do some sensitivity analysis. Generally this was not done well, even though it is fairly routine work. The main reason for having such questions on this course, and indeed having a subject such as Logistics on the Graduateship, is to stretch future marketing practitioners intellectually sufficiently to prepare them to address real marketing decision problems. A central issue in marketing is how to use your resources and plan your sales so as to get the best added value (usually profit) for your company. A linear programming question gets to the core of this issue. As long as this topic seems to be poorly addressed, or avoided altogether, it is likely to appear on future examinations.