

Mat-2.177 Operations research project work seminar

COMBINING JUDGMENTAL AND STATISTICAL FORECASTS

Status report
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Table of contents

<u>1</u>	<u>THE CURRENT SITUATION</u>	2
1.1	<u>CHANGES TO THE INITIAL PROJECT PLAN</u>	2
1.2	<u>CURRENT PROGRESS</u>	2
<u>2</u>	<u>A PLAN FOR CONTINUATION OF THE PROJECT</u>	3
<u>3</u>	<u>UPDATE OF RISKS</u>	3
	<u>BIBLIOGRAPHY</u>	3

1 The current situation

1.1 Changes to the initial project plan

There are no major changes to the initial project plan. In the initial plan, a questionnaire was planned for the regional market analysts. This will be implemented as a telephone interview to ameliorate the interaction and more obtain a more direct feedback between the project group and the market analysts. There are no major changes to the plan about literature review and

The initial schedule is still valid. Also, the resources have stayed the same both in our group and at Nokia.

1.2 Current progress

The project group has held several meetings to go through step-by-step the forecasting process at Nokia. We have wrote down general remarks about the process, some improvement ideas, and discussed these at Nokia. Nokia has helped the group to identify the critical issues in the process. The group has produced a questionnaire for regional market analysts and most of the interviews are already done by the publication time of this report.

The project group has done an extensive study of the literature on statistical and judgmental forecasting and combining them. There are some promising methods that we could use. One of the most suitable method seems to be one depicted by Goodwin in [1]. In this method, a regression analysis is performed explaining the realization using the judgmental forecast. This regression-corrected judgmental forecast is then combined with a statistical forecast to obtain the ultimate forecast.

Some issues in the forecasting process have been taken up for more detailed analysis:

1. There is no audit trail, i.e. separate intermediate judgmental forecasts are not saved for future reference
2. There is little feedback to the forecast makers about their forecasting performance or corrections to their forecasts together with motivation. This would contribute to a wider understanding of the market dynamics

The project group has already started to work on the final report. The issues considered in the report have been sketched and the responsibilities have been divided so that the part on literature and methods review will be ready by end of March 2003.

2 A plan for the continuation of the project

The project is still in its early stages and the group is only beginning to put the gathered knowledge together and start processing it. The group is now almost at the end of the data and knowledge gathering stage. During the two following week, by the end of March 2003, the literature review will be completed and appropriate methods for improving the forecasting process will be identified. The literature review identifies the most suitable method(s) that are taken as candidates for combining statistical and judgmental forecasts. The data may not be sufficient to actually benchmark these methods so the project group will concentrate on building a general approach for easily implementing a benchmarking study at Nokia.

The questionnaire has been done and most of the interviews have been held so the group will now draw some conclusions about the responses and update the list of issues in the process that require our attention and improvement proposals. The numerical data gathered in the interviews will also be processed and it will be judged whether it is applicable to some statistical analysis.

The project group will also arrange meetings to find improvements to the general forecasting process. One important issue so far has been the tracking of historical forecasting performance, systematic saving of different forecasts and thus improved feedback to forecast makers so that systemic errors in the forecasting process can be more easily identified.

3 Update of risks

The project has progressed very much as planned so most of the risk have not been altered, although most are by now already reduced. It seems that the initial risk of not having enough data to validate different models will be realized. However, this was taken into account already in the beginning of the project so it is manageable. Other risks have mainly remained the same but most of them are somewhat reduced by the already made progress. The risk that the project group would not find appropriate methods in the literature was not realized.

Bibliography

[1] Goodwin, P. Correct or combine? Mechanically integrating judgmental forecasts with statistical methods, *International Journal of Forecasting* 16, 2000.