

Project Progress Report
Services Forecast Sensitivity analysis

1. PROJECT OBJECTIVES

The main objective of the project was formulated *to analyze and improve the mobile services and applications monitoring and forecasting model through sensitivity analysis*. The main objective was divided into several sublevel objectives. We have focused the sublevel objectives and they are currently:

- Identification of the most critical input variables from the model in terms of each year, market, and also in long-term basis.
- Identification of the most insignificant variables from the model in terms of each year, market, and also in long-term basis.
- Examination of the magnitudes of changes caused by critical input variables in each year, market, as well as in long-term basis.
- Examination of the magnitude of changes caused by interaction effects of predefined input variables.
- Identify weaknesses in the model and recommend improvements to the model.

The original sublevel objectives, even when focused, provide a lot of useful information from the current mobile market situation (forecast), but this information cannot be used if market situations change radically – in the longer term. Thus the forecast has only little long-term value. Therefore we have set a new objective for the project so that the project can provide more long-term value for Nokia. This objective is:

- Determine recommendation and instructions for future sensitivity analysis and most efficient usage of the forecasting model

2. ACTIONS

The project was originally divided into five stages from which we have fully accomplished one and certain parts from other two. So far we have accomplished in the project:

- Learned the functionality of the mobile market model
- Learned theory behind test design and sensitivity analysis
- Executed initial test (results are almost useless)

During the first testing round we noticed certain problem with the complexity of the model and the insufficiency of the instructions provided. This misunderstanding caused the failure of the first testing round so that we could not identify the critical variables properly. We held a project meeting with client (12.3.) and gained most of the needed additional information concerning testing, tools (for testing) and desired results. These all areas are important in managing to reach a further and more efficient progress in the project.

The most important change to original project plan was the upcoming of additional information concerning the existing software @risk which can be used in the analysis. Also the fundamental way of how the client had wanted this analysis to be done, became clearer. This makes dramatic change to the project's progress as need for programming a tool with Visual Basic is cancelled and the use of distributed variables is introduced. Based on the new information received we reorganized our future actions into five stages which are:

- Understand @risk Excel tool
- Carryout sensitivity analysis for each market, year, as well as long-term analysis
- Carryout sensitivity analysis of the interaction effects and trade-offs
- Analyze sensitivity analysis results
- Documentation of project

Eleven of the original tasks have been done and the work estimates and actual work done are presented in the table 1. So far the actual project work hours have clearly been less than the estimated hours and this held for every task.

Table 1. Work estimates and actual work done.

ID	Task Name	Work	Actual Work
1	Project plan	16 hrs	12 hrs
2	Theory study: Design and Analysis of Exp	48 hrs	20 hrs
3	Practical Study: Excel-model	32 hrs	13 hrs
4	Theory study: Visual Basic programming	32 hrs	0 hrs
5	Project meeting 1 - Study review	15 hrs	10 hrs
6	Test Plan 1 - Critical variable identification	32 hrs	8 hrs
7	VB programming 1	24 hrs	10 hrs
8	Testing 1	8 hrs	7 hrs
9	Test result analysis 1	32 hrs	4 hrs
10	Project meeting 2 - Result review 1	10 hrs	4 hrs
11	Progress Report	32 hrs	6 hrs

The rest of the tasks have been reorganized and the re-estimated, since the original plan has changed radically and the estimates were very poor. Several tasks have been removed and new ones have been inserted. The new work estimates are presented in table 2.

Table 2. Work estimates.

ID	Task Name	Work
1	@Risk studying	4 hrs
2	Test plan - critical variables	4 hrs
3	Test plan - mutual effects	2 hrs
4	Testing - critical variables	10 hrs
5	Testing - mutual effects	4 hrs
6	Project meeting 3 - Result review	10 hrs
7	Additional testing	10 hrs
8	Final report	60 hrs
9	Project management	20 hrs

The original work estimate was 571 hours and it seemed to have largely been overestimated. The new total work estimate is 218 hours. The dramatic change in the work hour estimates can be also, to some extent, assigned to the removal of VB programming tasks. These programming tasks were originally roughly estimated as none the project team members had strong VB skills.

3. SCHEDULE

The project had three important milestones. The project plan was ready in 14.02.2003 and the progress report 14.03.2003. The first two deadlines have been reached and the project is currently on schedule. The project deadline, that was 25.04.2003 have been brought forward by the project team by one week. This is done because the project manager will be absent during the last week of the original schedule. The new project deadline is:

- Final Report deadline 18.04.2003

The remaining project schedule is presented in table 3.

Table 3. The project schedule

ID	Task Name	Start	Finish
1	@Risk studying	Wed 12.3.03	Mon 17.3.03
2	Test plan - critical variables	Tue 18.3.03	Fri 21.3.03
3	Test Plan - mutual effects	Tue 18.3.03	Fri 21.3.03
4	Testing - critical variables	Mon 24.3.03	Fri 28.3.03
5	Testing - mutual effects	Mon 24.3.03	Fri 28.3.03
6	Project meeting 3 - Result review	Mon 31.3.03	Fri 4.4.03
7	Additional testing	Mon 7.4.03	Fri 18.4.03
8	Final report	Mon 7.4.03	Fri 18.4.03
9	Project management	Wed 12.3.03	Fri 18.4.03

Table 4. The task resources

ID	Name	03			Apr '03				May '03				Jun '03			Jul		
		10	17	24	31	7	14	21	28	5	12	19	26	2	9	16	23	30
1	@Risk studying	Koskenkylä Juha;Kujanpää Tommi;Laukkanen Antti;Ollinaho C																
2	Test plan - critical variables	Koskenkylä Juha;Räsänen Harri																
3	Test Plan - mutual effects	Ollinaho Ossi;Kujanpää Tommi;Laukkanen Antti																
4	Testing - critical variables	Koskenkylä Juha;Räsänen Harri																
5	Testing - mutual effects	Kujanpää Tommi;Laukkanen Antti;Ollinaho Ossi																
6	Project meeting 3 - Result re	Koskenkylä Juha;Kujanpää Tommi;Laukkanen Antti																
7	Additional testing	Koskenkylä Juha;Räsänen Harri																
8	Final report	Koskenkylä Juha;Kujanpää Tommi;Laukkan																
9	Project management	Koskenkylä Juha																

6. RISKS

Three most important risks were identified in the beginning of the project. The project risks, past and present, are summarized below:

- **Nokia dedication.** The Nokia dedication to project was seen as a risk in the beginning and it this has turned out to be quite true. We haven't received all the necessary information from Nokia as fast as we hoped, and this has caused some trouble with schedules. We do still lack some information from Nokia and we see this as a risk.
- **Project member dedication and cooperation.** The project group has gained some experience in working as a team, but the project team does not operate as well as it could. We have problems with communication and arrangements. The project team cooperation is still seen as a risk.
- **Project Schedule.** The project tasks and schedule has changed radically and we have brought forward the deadline with one week. This might cause quality problems and we might not reach all the objectives with proper depth.

As mentioned before the VB programming, which initially included to the risks of the project, is no longer needed and therefore it is on longer perceived as a risk.