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SCIENCE AND ENGINEERING RESEARCH COUNCIL
RUTHERFORD APPLETON LABORATORY

COMPUTING DIVISION

D I S T R I B U T E D I N T E R A C T I V E C O M P U T I N G N O T E 8 1 9

ICL Internal Seminar on PERQ PLANNER

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INTRODUCTION

This was an ICL internal seminar on PERQ PLANNER; a project network analysis program using critical path techniques. The seminar took place on 4 March 1983 at ICL Beaumont in Old Windsor.

The seminar consisted of four formal presentations which covered: the need for project planning and an introduction to PERT/CPM planning networks, an introduction to PERQ PLANNER, three case studies and a perspective view of the software being developed in the ICL Application Systems Division.

INTRODUCTION TO PLANNING

Project planning consists of:

1. defining objectives
2. dividing these into activities
3. estimating time and resources for each step
4. establishing the time schedule
5. calculating resources and costs
6. control

There is a need to forecast:

1. Who should work on what task and when?
2. What will be the forecast completion date?
3. What will it cost?
4. What if ....?

Planning with network provides:

1. network diagrams
2. critical path analysis
3. resource scheduling
4. progress control

A basic outline of network events and activities was introduced and this was reinforced by an old film from Costain Limited.

Network planning should be used by those engineers, scientists administrators, planners and systems developers who are responsible for project control.

In summary, network planners provide:

1. A tool to extend management capability
2. Formalises and disciplines work relationships
3. Highlights potential bottlenecks
4. Encourages management by exception
5. Enables alternatives to be tested
6. Increases efficiency and profit
7. Gives decision support

PERQ PLANNER

PERQ PLANNER is MICRO PLANNER bought by ICL and mounted with no modifications on the PERQ. No effort has been expended on utilising the unique features of the PERQ machine.

It runs on either a ½Mbyte or 1Mbyte machine with no specific limit on the number of activities and events (in practice 5000 to 8000 would be the upper limit). It allows for 27 sub projects, 6 calendars for each network, 150 defined resources, with up to 20 resources per activity.

On a test run of 1600 activities and events the time analysis (forward and backward) took 14 minutes and resource analysis a further 9 minutes. No time was given as to how long it took to put the data in!

Features of PERQ PLANNER are:

1. Interactive input using form filling techniques
2. Screen editing
3. Progress reporting
4 Time analysis
5. Resource analysis
6. Listings - schedule dates, key events
7. Bar charts
8. Histograms

PERQ PLANNER allows the user to update the network throughout the lifetime of the project and see the effect that actual progress is having on the plan. It provides not only for time analysis, but also resource (man-power, machinery availability, money, materials) analysis. Furthermore, resource availability, may change during the period of the project and this is catered for by allowing up to 20 such changes in a given resource to be specified.

PERQ PLANNER also allows for multi project working enabling the human planner to cater for manpower which is shared amongst a number of projects.

Activities are identified with a preceding event and a succeeding event, a uniqueness identifier and a calendar description which allows for shift working, holiday times, Saturday working etc. Properties

such as type, imposed date, sorting codes (to allow for different outputs for different departments) are associated with each activity. Events are identified by an event name and type, and have associated properties of imposed dates, description and sorting code.

PERQ PLANNER cannot produce a network diagram. ICL Marketing Division did not think that there was a market requirement. However, there was a feeling in the audience that diagrams were absolutely vital. It was felt that there was sufficient knowledge in ICL that network diagrams could be made available as output from PERQ PLANNER and it would take about 3 months; there were no plans to do so.

PERQ PLANNER is on general release on POS. A PNX version will be available in 6 months to 2 years time - much depends on the availability of PASCAL on PNX and GRAFIKS. They intend to improve the interface when they mount the system on PNX by reducing the number of levels in the menu hierarchy, employing different fonts, making use of the puck buttons, allowing the user to point to dates on a calendar and having help facilities which relate to the application itself rather than the sort of choices that are available. This is possible because they believe they can lead people through the dialogue without the need for help. This interface will be common to the other software being produced by Application Systems Division (PERQ CALC, PERQ ILLUSTRATOR, PERQ SCI/TEXT).

USE OF PLANNERS

ICL has produced PERT systems on its computers for some years and has about 400 users already. The three case studies, none of which involved PERQ PLANNER, came from a RAF station in West Germany, a manufacturing company and a gas processing company in the Arabian Gulf. ICL seems to become quite involved with assisting companies with their PERT codings. The limit in PERQ PLANNER of 5000 to 8000 activities and events was put into perspective when it was stated that the Arabian Gulf customer required a PERT system to handle between 20,000 and 60,000 activities and events in order to be able to handle all safety requirements which are particularly necessary in this industry.

The speaker felt that what a project manager wanted from a network planner was:

1. A simple easy to use computer system - not requiring a two week course to learn.

2. Immediate response - not to have to wait for a main frame's several hour turn around.

3. What if simulations.

4. Totally integrated systems.

PERSPECTIVE VIEW

The perspective view was a short talk outlining the commitment to the integration of PERQ CALC, PERQ PLANNER, PERQ ILLUSTRATOR and PERQ SCI/TEXT to produce a total system for producing project proposals. The intention is for the system to provide a complete hard copy report on a given project.

PERQ CALC, PERQ GINO, PERQ SIMPLEPLOT and PERQ PLANNER are all on general release. PERQ ILLUSTRATOR is on field trials and will be released soon.

COMMENTS

The current version of PERQ PLANNER provides the type of form filling one has come to expect from a commercial system - somewhat tedious to use with a somewhat condescending nature. The top of the screen contains the screen layout one might expect on a 20 line VDU and the bottom screen contains help information (so they must have made some changes).

When updating information associated with an event for example, the user must press the INS key in order to command PERQ PLANNER to update its model. The command to move up to a parent menu does not seem to be consistent; sometimes the user has to press the DEL key, sometimes he has to type QUIT and sometimes FINISH. The menu items are displayed on the screen as FINish (rather than FINISH) indicating that the user only has to type FIN for finish.

SUMMARY

PERQ PLANNER must be a very useful tool for project planning and the fact that four pieces of software will be linked together to provide a complete computer aid for project proposals seems very attractive.