

Interactive Operation Cost Monitoring and Analysing Tool - By Ian Kree

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Semiconductor industry is very cost-intensive. Survival and profitability of wafer foundries lies in the ability to effectively analyse, monitor and control the Operational expenses. Having said that, most Operation teams are not equipped with user friendly cost trending and analysis tool. Furthermore, being mostly from non financial background, they could not fully understand and use effectively such tools and hence poses problems such as user acceptance.

The purpose of this paper is to present a tool which displays production cost trends and details interactively. It allows users to explore many different points of view when looking into a problem. And it able to produce trends of production cost despite cost structure has been restructured many times over the years. These make it very ideal for fact based decision making.

Users monitor and do cost analysis with over 200 analysis graphs and tables. It gives users abilities:

- (1) to drill down to the sources of the problems by selecting cost centre or cost centre group;
- (2) to preview single month data or historical trend by selecting the from-to period;
- (3) to view problems from many perspectives
 - (a) compare or choose actual, original budget, latest budget, baseline for cost saving and/or theoretical expenses;
 - (b) choose accumulative or non-accumulative value;
 - (c) choose by-monthly or by-item; and
 - (d) choose either normal analysis (total value) or special analysis (per wafer out, per mask layer or per wafer move);
- (4) to do analysis with either bar, line or pie chart;

- (5) to view tables of expenses summary or details; and

- (6) to export graphs and copy table's figures.

Its strength lies in (1) cleansed input data; (2) centralized data; and (3) user friendly graphical user interface (GUI). Prior to upload to the central database (MS Access), the data from Enterprise Resource Planning (ERP) system is "cleansed". It is necessary if Finance manages their accounts differently from the way Operation manages their budget and expenses. Then the data stored in central database is fetched to GUI (MS Excel) as users using it.

With this tool, the management is now able to effectively pinpoint areas of further cost reductions; and identify where, when and why the over budget occur. They could also measure production expenses per wafer out against effective average of selling price per wafer. The Operation management now could also plan future spending and budget better with the figures attained from the said tool. And since everyone satisfies with the cleansed and centralized production cost data it is now possible to include cost management into MBO and KPI.

This tool has greatly improved our Operation's cost management. Directors, managers and engineers do more, better and faster cost analysis, reports and discussions. Hence, they are more aware how their sections', modules' and departments' expenses affect Operation cost and cost per wafer; and they are more motivated to undertake necessary improvements. More over, it is developed on MS Office platform, which requires no additional investment. And it takes only one engineer to develop and maintain it on part time basis.

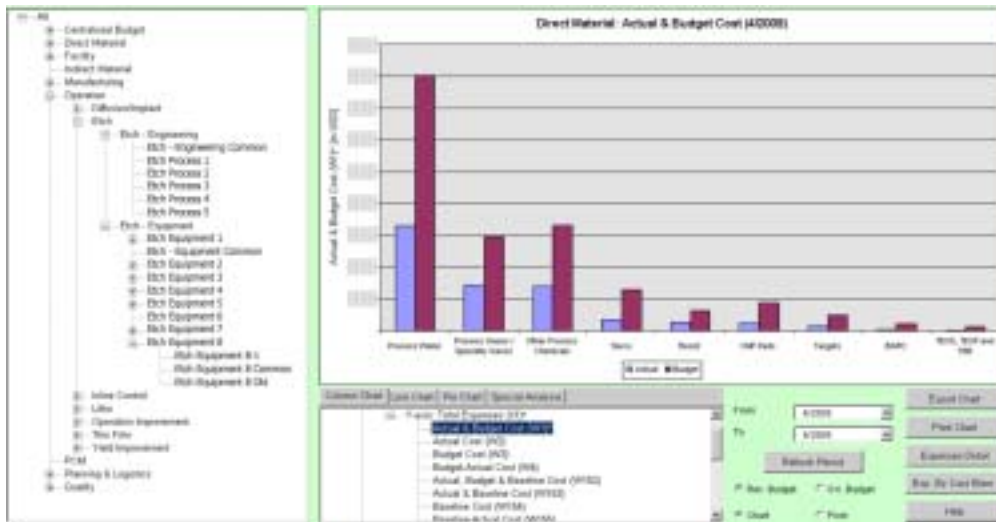


Figure 1: Overview of the GUI.

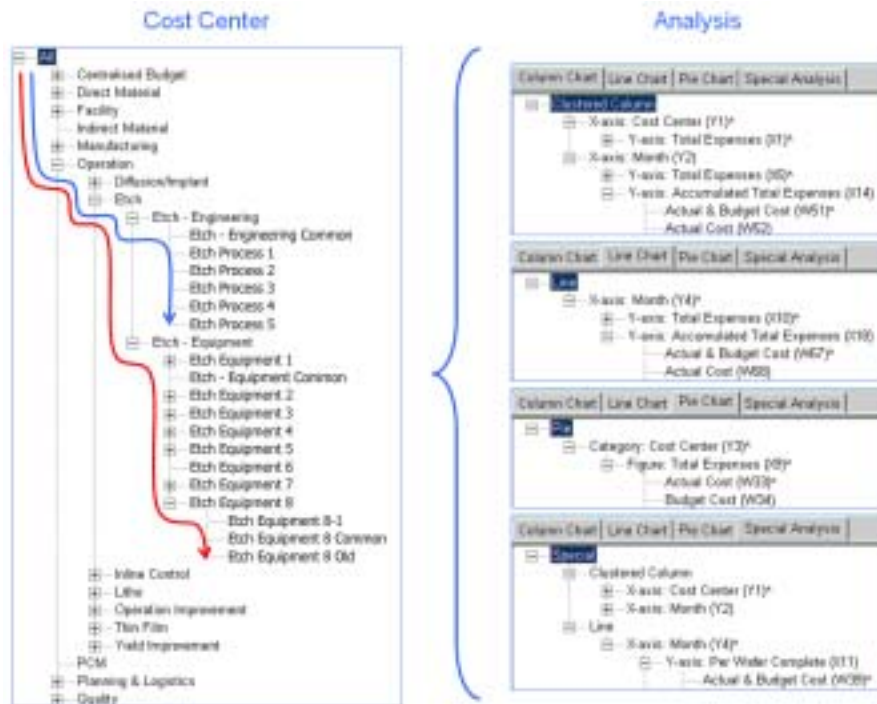


Figure 2: Users can do top-bottom cost analysis. Many analysis functions are available for each cost centre and cost centre group.



Figure 3: Explanations of other controls on the GUI.