

2018 Strategic Cost and Price Model – Quick Start Guide

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Introduction

- The Strategic Cost and Price Model is a very powerful and fully customizable model.
- Due to the detail and customization of the model it looks complicated and can be intimidating on first exposure.
- Building a model is actually very simple unless you need to do a lot of customization.

Information Sheets

- The Gray tabs are informational sheets.
- License – defines the model license.
- Introduction – describes our company and products plus disclaimer.
- Data Flow Map – shows a map of how all the model sheets interact.
- Error Check – displays any error messages if errors occur.
- Revisions – lists the changes made to the latest model version.
- See the user manual for the details on how to work with these sheets.

Main Sheets

- The Red tabs are the main sheets that drive the model.
- Fabs – defines all of the predefined and user defined fabs.
- Main Selections – sets the year and quarter and fab to model.
- Defaults – a set of defaults that can be viewed and overridden.
- See the user manual for details on how to use these sheets.

Building A Model - 1

- Click on the 'Main Selection tab.
- Pick a year and quarter to model.

Date to model	2017-Q3				
	2017-Q3				
Fab	2017-Q4	SS - Xian	Xian		
Default country	2018-Q1				
	2018-Q2	China			
	2018-Q3				
	2018-Q4				
	2019-Q1				
	2019-Q2				
State		Process	Capacity (wpm)	Wafer size (mm)	Process status
Initial state	2014-Q3	SS - 3DNAND - 45nm - 24L	30,000	300mm	Past
1st upgrade	2015-Q3	SS - 3DNAND - 40nm - 32L	100,000	300mm	Past

The year and quarter drives material costs, labor and utilities costs, defect densities and primarily the fab state and depreciation.

Reviewing Results

- The Brown tabs in the model are output results.
- CostSum – summarizes wafer costs and investments.
- CostPerQtr – macro that provides twenty quarters of wafer cost.
- CostDetail – additional wafer cost details.
- YearlyData – underlying costs per year and in some cases country for direct labor, engineering salary, utilities and mask costs (this sheet is editable).
- InvestSum – the investment for the initial fab state and up to ten upgrades.
- StepCost – the cost per step for every process step used in the current process.
- BlockCost – the process blocks in order for the current process with cost.
- DieYield – die yield, gross and net die, die cost (this sheet is editable)

Viewing and Customizing Fabs

- All of the 300mm fabs used by the target companies for products covered by the model are defined on the 'Fabs' sheet.
- The initial and up to ten upgrade states may be user edited.
- Up to ten custom fabs may be defined.
- See the user manual for details on how to modify this sheet.

Viewing and Customizing the Process

- The Blue tabs define the process.
- The product tabs, 2DNAND, 3DNAND, 3DXPoint, DRAM, Logic, define processes at a block level.
- The processes being run in the fab as defined on the ‘Main Selections’ sheet are loaded from these sheets.
- ProcBlocks – converts blocks to steps.
- NGLBlocks – converts multipatterning, EUV, etc. blocks to steps.
- ProcSteps – sums up all the steps.
- See the user manual for the details on how to work with these sheets.

Viewing and Customizing Equipment - 1

- The Purple tabs define the equipment set.
- WafSize – sets ratios so that 200mm and 450mm may be estimated, the model is a native 300mm model.
- EquipConfig – defines equipment throughput, cost and footprint.
- ProcHrs – sums up the usage of each piece of equipment.
- SampPlan – defines sampling for inspection and metrology.
- EquipCounts – calculates the number of piece of equipment needed of each type for the initial and up to ten upgrade fab states.
- Upgrades – defines when equipment will be upgraded to meet new requirements.
- EquipPurche – calculates when equipment is purchased for capacity and upgrades.

Viewing and Customizing Equipment - 2

- EquipRemoved – when equipment purchases results in more equipment units than needed for a fab state the extra units are removed.
- EquipDeprec – calculates the equipment depreciation.
- Facility – calculates the facility size, cost and depreciation.
- See the user manual for the details on how to work with these sheets.

Viewing and Customizing Materials

- The Green tabs define the materials.
- MatPricing – defines the prices for all the materials by year.
- MatbyNode – defines material use by process and node.
- BOM – defines material usage and cost by process step for the current node.
- MatrlsSum – summarize material usage per year for the current fab state.
- See the user manual for the details on how to work with these sheets.