

# CapacitySim Administration Guide

**Overview:** CapacitySim is a competitive simulation where users make decisions on production and capacity expansion in order to maximize profit over the duration of the simulation. Users have the option to edit decisions after the simulation has ended to see how other decisions would have affected results. Edited changes are not saved.

## Save Simulation

All changes to Simulation Settings, Turn Time, Forecasts, or Actual values need to be saved by clicking the Save button. Click the Save as New Simulation button to save the simulation and all settings to a new simulation, useful for making a copy of the simulation. Deleting a simulation will also delete all user results. Take caution as this cannot be undone.

## Simulation Settings

**Sim ID:** Automatically generated ID found at the top of the Sim Settings panel. Users will need to know this ID to register or access the simulation.

**Sim Name:** The name of the simulation that appears in the drop down menu for administrators.

**Sim Password:** Users enter the Sim ID and Sim Password to access the simulation.

**Auto Start:** The date and time when the simulation is available for access. For simulations with timed period decisions not using Manual Start, this is the time when the first period begins. The Auto Start date is ignored for Manual Mode simulations.

**Auto End:** The date and time when access to the simulation will close. Users attempting to start a simulation after the Auto End date will not be able to start the simulation, but users that have already started the simulation will be able to continue with the simulation.

**Manual Start:** When enable is checked, clicking the Start button will set the current time to the start time for the first period for all users. Click Clear to remove the start time. Move your mouse over the Start button to see what time was set for the start of the simulation. If there are no Period Turn Time values, then users will have unlimited time for each period decision. If a Period Turn Time is set, the time for the period will begin counting down from the Manual Start time if Sync Sims is enabled. If Sync Sims is not enabled, setting the Manual Start is the same as setting the Auto Start in that the timer will start when the users click Start, not from the time set by the administrator. Simulation users can be signed in at the time the Manual Start time is set.

**Sync Sims:** When Period Turn Time is set, all simulation users will begin their first period decisions at either the Auto Start time or the Manual Start time. Thus, each simulation user will end each period at the same time. This synchronization requires that all users have their computer clocks set accurately. If a user is in the Eastern time zone, but has their clock set for the Pacific time zone, this user will be out of sync.

**Manual Mode:** When enable is checked, all simulation users can start the simulation and submit their first period decisions, but the next period will not begin until the administrator has set the period to 2 and clicked Set. Then, users will need to click on the Next button to see the results from period one and

enter their period 2 decisions.

**Sim Periods:** The number of individual periods simulation users will enter decisions. When there are no extra periods, when the last period decisions have been submitted, a popup dialog appears for the user indicating the simulation has finished. All remaining inventory is simply liquidated (no cost or revenue from liquidation).

**Extra Periods:** The number of periods after the Sim Periods have ended. Users will enter decisions in a table (Production and Expansion) for each extra period all at once. They will then click Submit once to finish the simulation. This allows for longer operation horizons, but saves time for entering each period separately.

**Forecast Periods:** The number of periods to forecast. Each simulation period will show the forecast periods, allowing for changing forecasts over time.

**Annual Periods:** The number of simulation periods per year. 1 means 1 period equals 1 year.

**Operating \$/Unit:** The variable operating cost to produce each unit.

**Mfg \$/Unit:** The variable manufacturing cost to produce each unit.

**Inventory \$/Unit:** The cost to hold each unit of inventory per period.

**Capacity Units:** The maximum production capacity at the start of the simulation.

**CapEx Fixed Cost:** The fixed cost to increase capacity.

**CapEx \$/Unit:** The variable cost to increase capacity.

**CapEx Delay:** The number of periods before any expanded capacity can be used for production. For example, if set to 2 and a user adds capacity in period 3, the capacity will be available for use in period 5.

**Interest Rate:** Annual interest rate used on profits, both positive and negative. Negative profits result in an interest expense.

**\$ Divisor:** A divisor for \$ amounts displayed to simulation users, except for unit price.

**Production Units:** The units of production for the simulation, i.e. MT for Metric Tonnes.

## **Period Turn Time**

For timed periods, set the hours and minutes allowed for a period decision. If no turn time is set, then the previous period's time will be used. For example, if period 1 is set to 5 minutes and period 4 is set to 2 minutes, then periods 1-3 will all have 5 minute turn times, and switch to 2 minute turn times beginning in period 4. Thus, it is important to at least set period 1 turn time if timed periods will be used.

## **Demand and Price Forecasts**

Set the Period and enter the forecasts for Optimistic, Likely, and Pessimistic columns for Demand and Price. Double-click a cell to edit the value (can then tab to the next value).

Click Copy Previous to copy the previous period's forecasts into the current period's forecasts. For example, if currently period 2, Copy Previous will copy forecasts for periods 2-10, but period 11 will need to be entered manually as it is not part of the period 1 forecasts.

## **Actual Demand and Price**

Double-click a cell to enter the actual demand and price for each period that will be used to compute the results for each simulation user. There will be the number of actual period values for the sum of Sim Periods and Extra Periods.

## **User Management**

Users can be added by an administrator or they can register on their own. Clicking the manage user accounts button will open the Simulation User Manager window. This window shows a list of all users currently registered for any of the simulations for a given license.

A single user can be added or multiple users can be automatically added if needed. User names can be anything and need not be unique. For email, any unique string is accepted and does not need to be a valid email address. Thus, student ID numbers could be used here. When adding multiple users, the number of the added user is appended to the name and email prefixes. If there are any duplicate email values generated, those users will not be added. The user list can be exported to a CSV file readable by Excel. This file shows the user name, email and password. Users can also be deleted. Deleting a user will also delete all simulation results, if any, that are associated with the user. The open registration check box allows the administrator to determine if users can self-register (the checkbox is checked). Unchecking the checkbox will prevent anyone from registering for any simulation for the license.

## **Share Simulations**

The Share Simulations window allows administrators to make simulations public so that other license administrators can import the simulation for their own use. When a shared simulation is imported, the simulation ID and password will not be imported. Clicking on a simulation from the list will show a brief overview of the products and settings used in the simulation.

## **Support Contact**

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