# User Manual

# SCM Globe

## Interactive Supply Chain Design and Simulation

## Version 2.0

User Manual Release 2.5

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## Interactive Supply Chain Design and Simulation



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# Introduction to SCM Globe

SCM Globe is a serious supply chain game. You can design supply chains from scratch or use the supply chains provided by the case studies to illustrate how different supply chain designs produce different operating results and explore how to manage those results. As you play this serious game, you get an intuitive as well as analytical feel for how supply chains work. That's called "street smarts", and street smarts is part of becoming a top notch supply chain professional.

SCM Globe is a real-time strategy game (RTS game), and the goal is to create supply chains that meet customer demand for products and do so with the lowest operating costs and lowest inventory levels. You do this by creating and combining four main entities that define any supply chain. Those entities are:
    **1.** Products
    **2.** Facilities
    **3.** Vehicles
    **4.** Routes

As one professor told us, "this is not a static black box simulator" that just models a predefined company. SCM Globe lets you create products, facilities, vehicles and routes and combine them any way you want. You create supply chains that closely model actual companies and their supply chains. SCM Globe leverages functions in Google Maps and adds further functionality and a user interface that enables you to design supply chains, simulate performance and analyze results.

You drag and drop facilities on a map of the world and specify the kind of routes (road, rail, air, water) that connect the facilities and you see and edit routes on the map. You define products that relate to facilities and vehicles that move products between facilities. Then SCM Globe lets you simulate the operation of the supply chain you designed and shows you its operating data and where it breaks - where products accumulate or run out, what your operating costs are etc. You keep improving your supply chain designs until you get the results you want, and you learn a lot about supply chains in the process.

The first half of this book is a concise user's manual using screen shots to walk you through the basics of designing a supply chain and simulating its performance. You will learn the rest by doing. The second half of this book is a library of case studies. Each case study is a bit more challenging and illustrate certain supply chain operating principles. These principles and other issues to explore in the case studies are presented in the section for each case study.

We hope you find SCM Globe both engaging and useful. We are continuously adding new features and the features we add depend on the feedback and comments we get from people using the application. We'd love to hear from you; you can email us at – mhugos@scmglobe.com or skoji@scmglobe.com.

# 1. SCM Globe User Manual

## 1.0 Account Management – Getting Started



**1.** My Account button brings you to this page. View Library button shows library of case studies you can import into your account

**2.** Shows days available and lets you purchase more days

**3.** Students can subscribe to Professor libraries of case studies

**4.** Click here to start a new supply chain from a blank map

**5.** This shows the supply chain designs you have in your account. Click on Edit button of a supply chain to begin working on its design

**6.** Save States allows you to save versions of a particular supply chain design and download it to your computer. You can then attach the download file to an email and send it to others or you can upload a file you saved earlier or received from someone else.

**7.** Restore, Download or Delete supply chain save states

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**GETTING STARTED:**

**--** Click on "**New Supply Chain**" to start creating a new supply chain on a blank map – type name of the new supply chain in the pop up dialog box

**--** Click on "**Edit**" for a supply chain already in your library

**--** See next page **1.1 Creating Supply Chains**

# 1.1 Creating Supply Chains
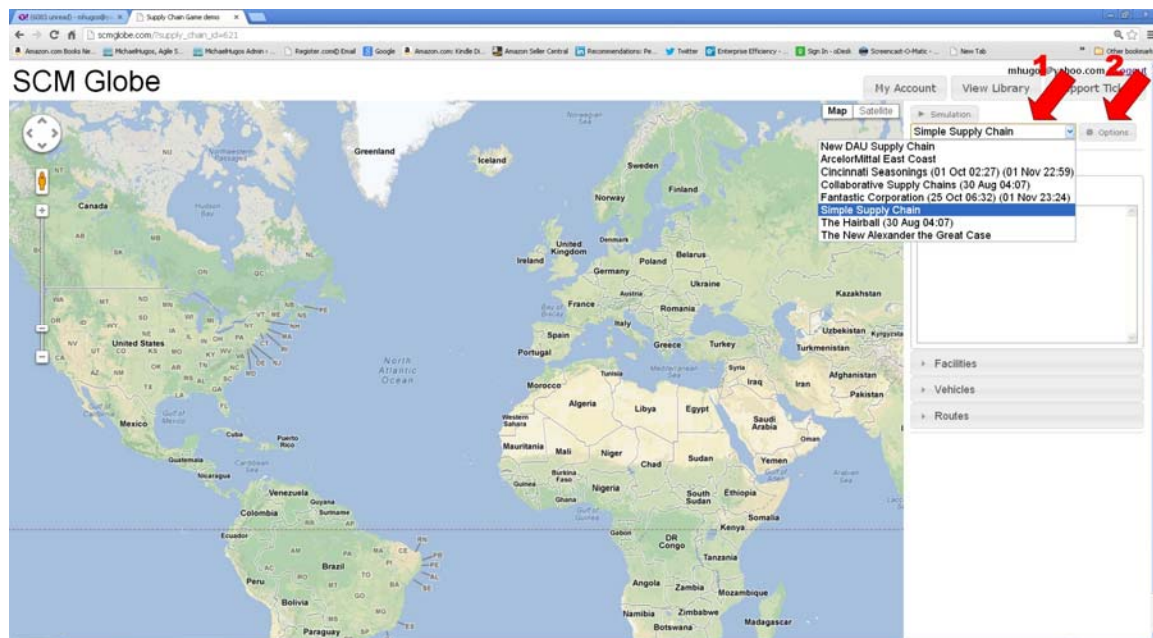


**1.** At top of right hand column is the name of the supply chain you are creating or working on. Click on drop down box to select other supply chains you have in your library

**2.** Click on the Options button to access: New; Edit; Remove; Save options for this supply chain

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## *Editing Supply Chains*

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*A. Click the Options button and select Edit option - this will enable you to change the name of the supply chain you have selected*

*B. Click the Options button and select Remove to delete this supply chain*

# 1. 2 Creating Products
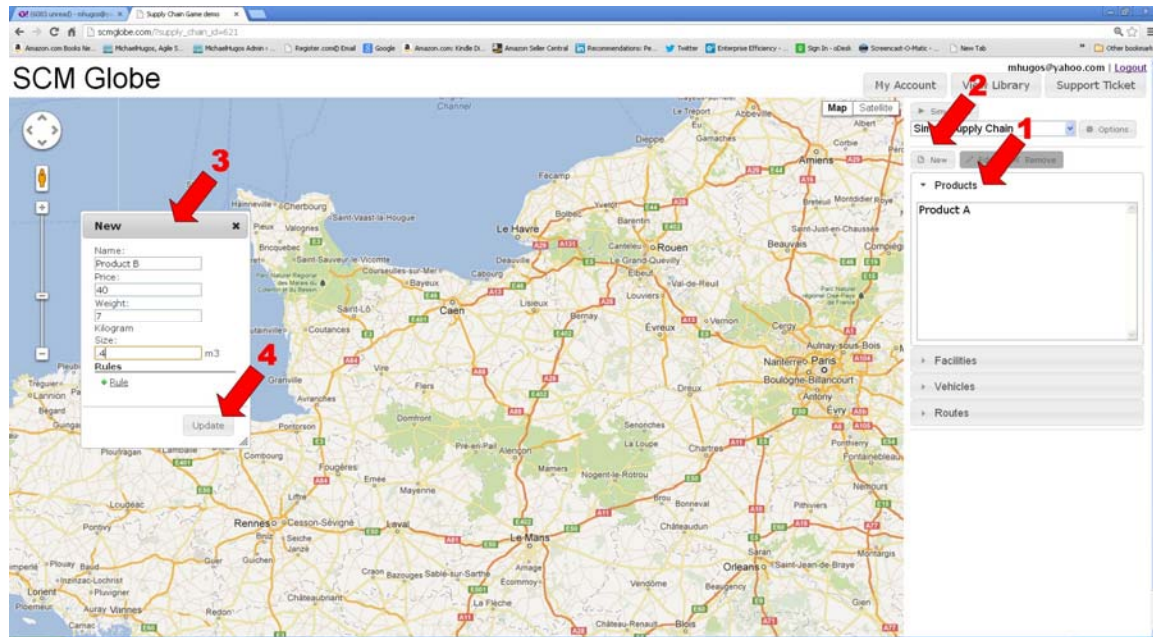


**1.** Top right hand column click on Product bar

**2.** Click New button above box

**3.** Name Product and fill in details (metric system is used for weights and measures)

**4.** Click Update to save that Product - repeat steps 1 - 4 to create all the Products associated with this Supply Chain

**NOTE.** "Rules" feature for product is under development – it will enable rules such as temperature, humidity and other parameters relevant to handling and storing a product – available soon.


## *Editing Products*

*A.  Click on Products bar - this will open the drop down box with the list of Products available to be edited*

*B. Click the the Product to be edited - this will highlight it*

*C. Click on the Edit button above the box*

*D. When editing is complete click Update to save*

# 1.3 Creating Facilities
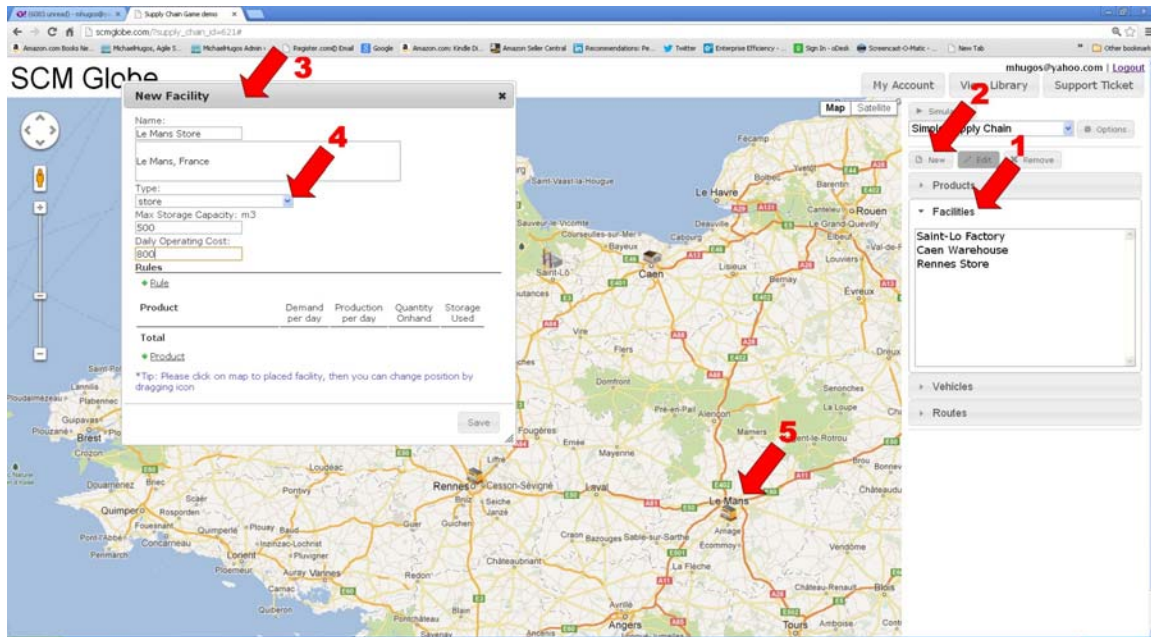


**1.** In the right hand column click on Facilities bar

**2.** Click on New button above the box

**3.** Name Facility and fill in details (metric system is used for weights and measures)

**4.** Click on drop down box to view list of available facility types – each facility type as default values for details and you can type over them as needed

**5.** Click on map location where facility is located – drag and drop facility at desired position – zoom in on map to place facility in exact location or just place facility in approximate location and edit later if needed.

If New Facility window is in the way; right click in the  box, hold and drag to move - map can be navigated in usual manner - either by the controls offered in the upper left or mouse controls (scroll to zoom and click and hold to move)

**Note: To immediately add Products to new Facility see step 1 on next page**

## *Editing Facilities*

*A. Click on the Facilities bar - this will open the drop down box with list of Facilities available to be edited. Click the the Facility to be edited - this will highlight it*

*B. Click on the Edit button above the box - you may edit information in the window or relocate the facility by right clicking and holding to drag and drop the facility in a new location.*

*C. When editing is complete click Update to save*

# 1.4 Add Products to Facility
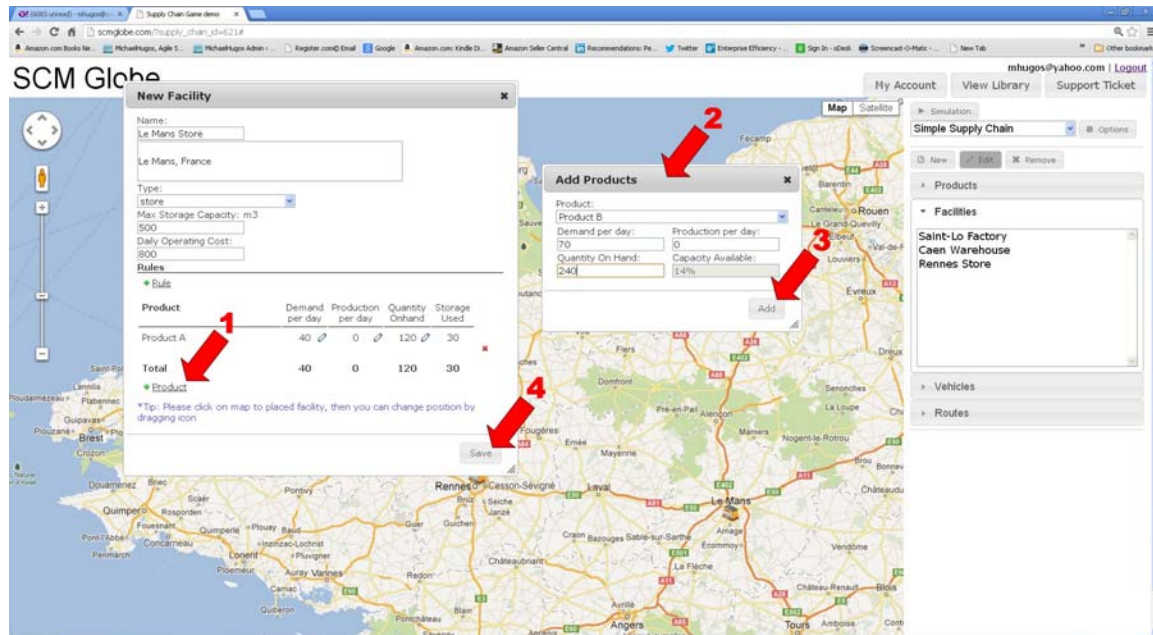


**1.** Click on "Product" link to utilize list of products created for this supply chain

**2.** Add Products dialog box appears - click drop down list of products and select desired product – fill in data for that product

**3.** Click Add to add this product to facility – repeat steps 1 – 3 as many times as needed to add products to a facility

**4.** Click Update to save the Facility and its associated Products

# 1.5 Creating Vehicles
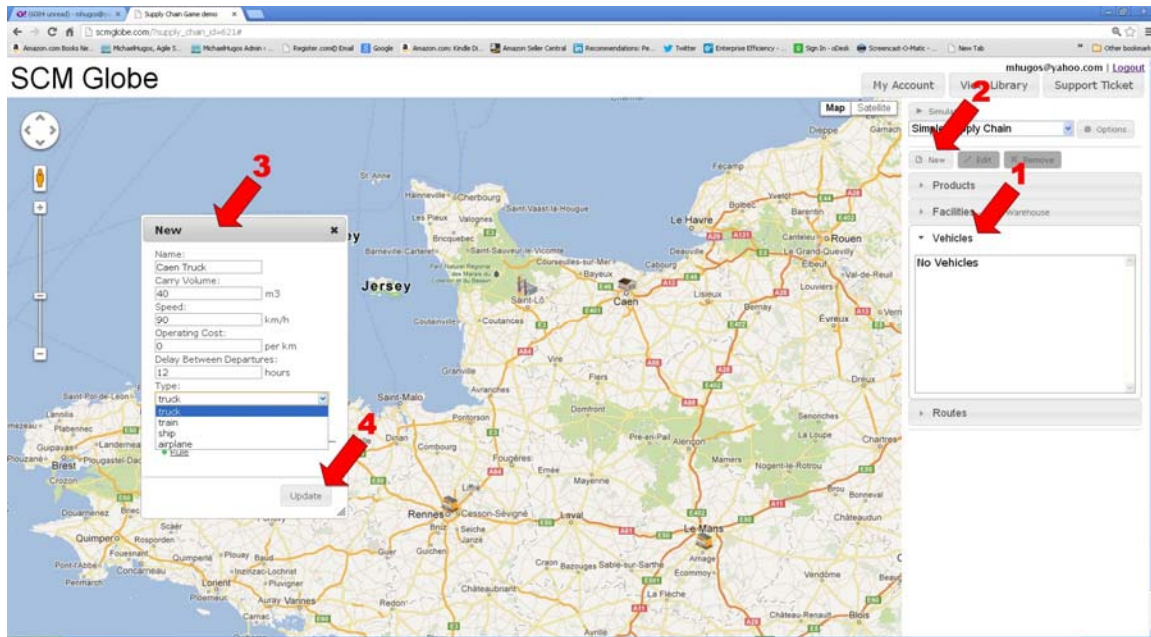


**Note:** All vehicles created are associated with the Facility highlighted in the Facilities section and appearing to the right of the Facilities title on that bar
**1.** In the right hand column click on Vehicles bar
**2.** Click on New button above the box
**3.** Name Vehicle and fill in details - click drop down arrow to utilize list of vehicle types – each types comes with default values that can be edited
**4.** Click Update to save - repeat steps 1 - 4 until all the vehicles associated with the Facility are defined

## *Editing Vehicles*

*A. With the proper Facility chosen -*
*B. Click on the Vehicles bar - this will open the drop down box with list of Vehicles available to be edited. Click the the Vehicle to be edited - this will highlight it*
*C. Click on the Edit button above the box - you may edit information in the window*
*D. When editing is complete click Update to save*

# 1.6 Creating Routes
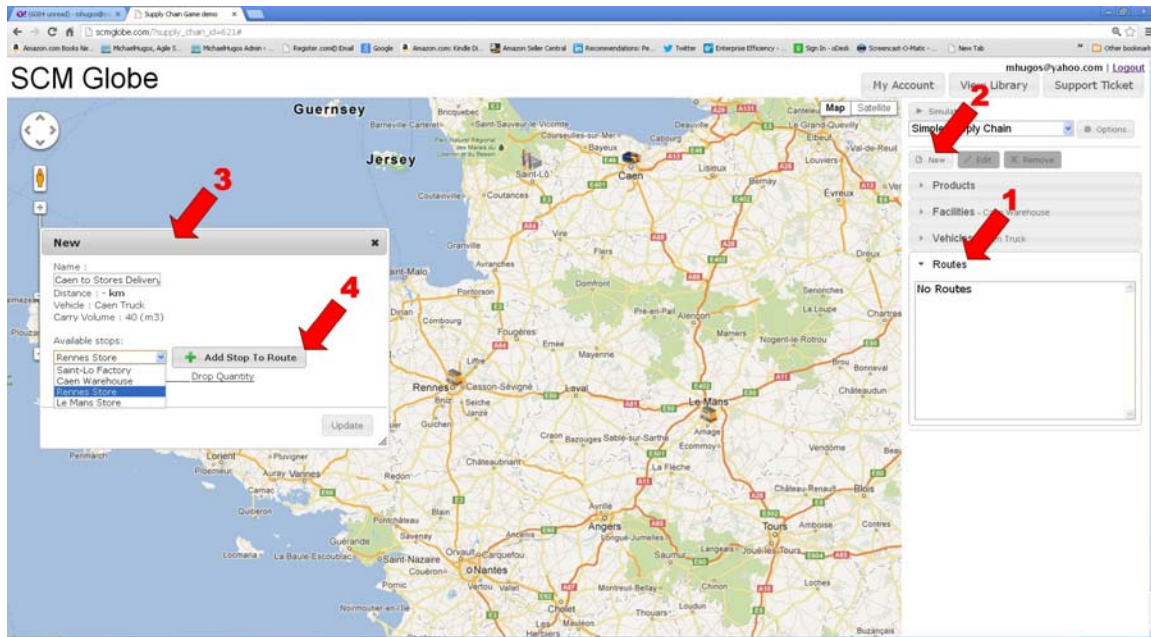


**1.** In the right hand column click on Routes bar
**2.** Click on New button above the box
**3.** Name Route; information related to vehicle on this route is shown
**4.** Click drop down list to view all the available Stops. Select the Stop name and click "Add Stop to Route" button to right of the box – route will be drawn on map – drag and drop to change route as needed
**--** if vehicle is a truck a road route will be displayed
**--** if vehicle is a ship or airplane a straight line will be drawn between the locations and you can drag and drop to change route as needed
**--** if vehicle is train a road route will be selected and you can drag and drop as needed to change route
**--** repeat steps 1 – 4 to add as many stops to a route as desired
**Note: To immediately add Products to the Route see step 1 next page**

## *Editing Routes*

*A. With the proper Facility and Vehicle chosen -*
*B. Click on the Routes bar - this will open the drop down box with the list of Routes available to be edited. Click the the Route to be edited - this will highlight it*
*C. Click on the Edit button above the box - you may edit information in the window and/or click on a point on the Route and hold to drag and drop to relocate a portion of the route*
*D. When editing is complete click Update to save*

## 1.7 Add Products to Route
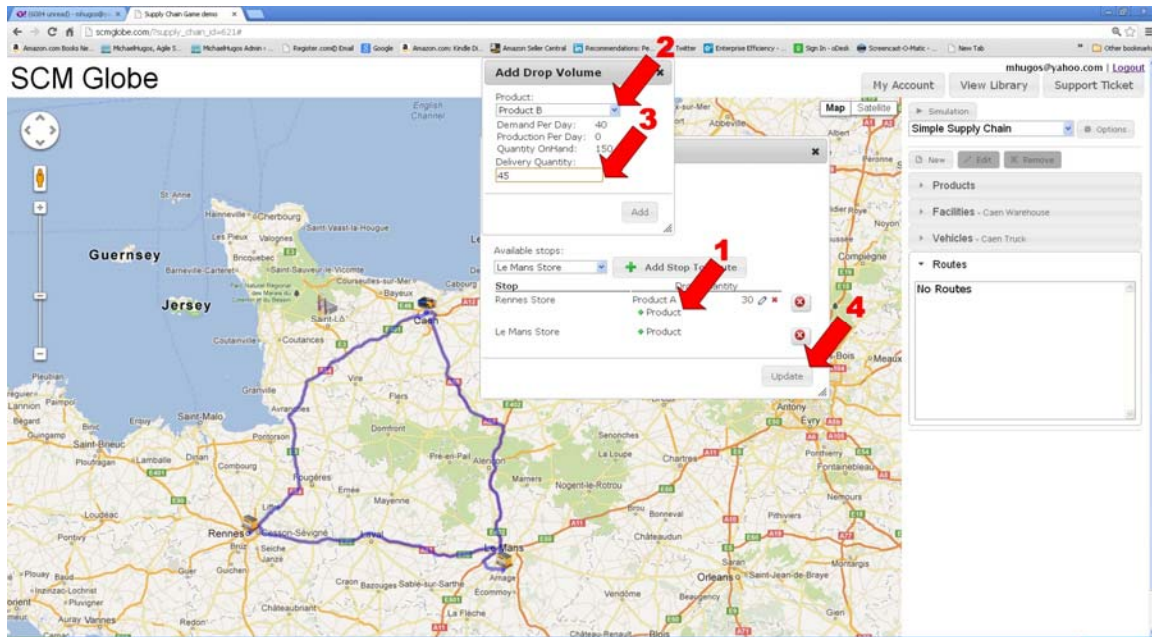


**1.** Click drop down arrow to pick from list of available Products
**2.** Add Drop Volume dialog box appears – click drop down list to see list of available products – select desired product
**3.** Fill in Volume to be dropped off - click Add to save -  repeat steps 1 - 2 as needed to cover the products being delivered to that Stop.
**4.** Click Update to save Route - Repeat steps 1 - 3 until products to drop off at all the Stops on the Route are defined.

# 1.8 Add Pick-Up Products to Route
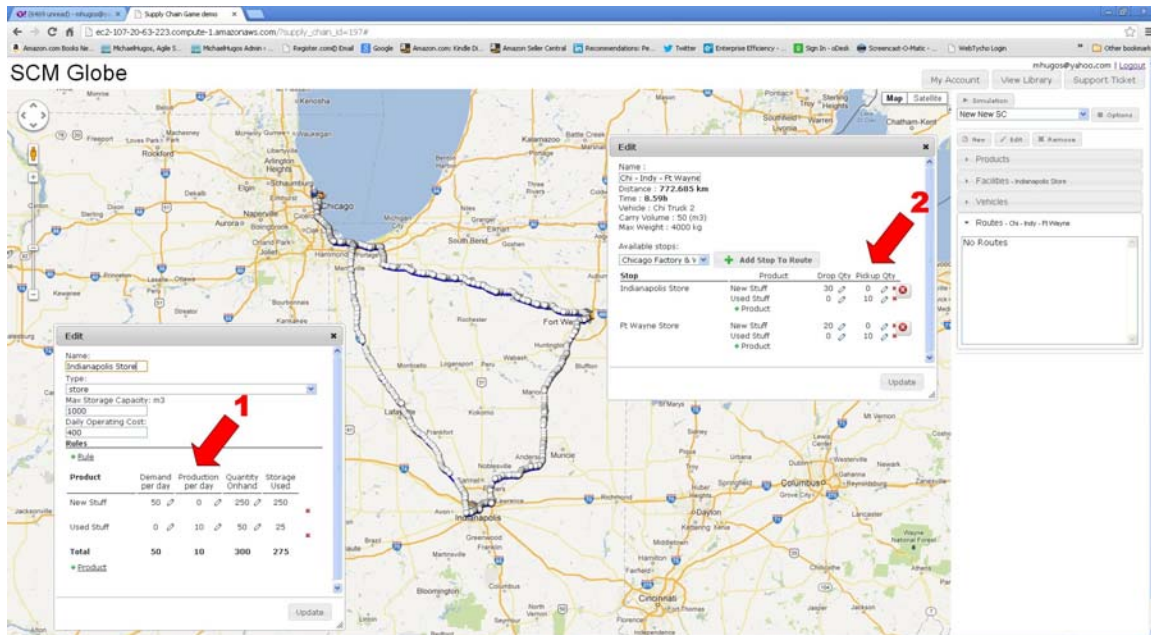


This option enables a vehicle to pick up products from a facility other than the facility where it starts its route. A vehicle can drop off products at facilities on its route and it can also pick up products at facilities on its route. Products that are on the vehicle when it returns to its starting facility will be added back into the on-hand amounts for those products at the starting facility.

This adds another level of accuracy to modeling supply chains. In the real world companies try to avoid sending vehicles back to their starting facility without picking up other products that need to be transported on the return trip. Sending vehicles back emply is called "deadheading", and it is a wasteful use of vehicles because when they are empty they are not generating revenue to offset their cost of operation.

> **1.** In this example the Indianapolis Store has a demand for 50 items per day of a product called "New Stuff", and it produces 10 items per day of a product called "Used Stuff". The "Used Stuff" product was first defined just like other products in the products tab.
> **2.** Enter the Pick-Up quantity of a product at the facility where the delivery vehicle will pick it up. In this example the delivery vehicle on the route will pick up 10 items of "Used Stuff" at the two stores where it delivers "New Stuff". The 20 items of "Used Stuff" will be on the delivery vehicle when it returns to its starting facility and those items will be added into the on-hand amount for "Used Stuff" at the starting facility. This models the return of products back to a central facility where they can be recycled or repaired.

# 1.9 Run Simulation
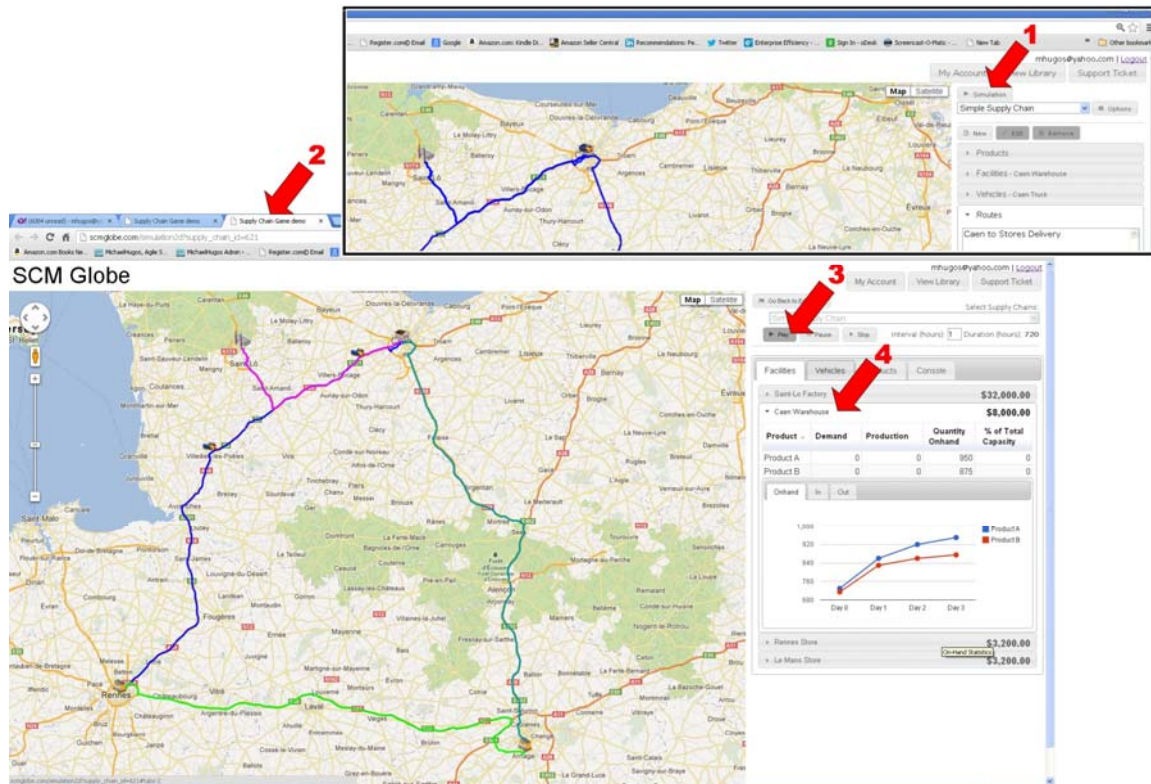


**1.** When supply chain products, facilities, vehicles and routes have been defined - Click the Simulation button located at top right hand side of the screen

**TIP** – open a new browser page for running simulations – hold down Control key when you click on Simulation button. Keep both pages open to make it easier to switch between simulation and edit modes as you work on your supply chain design.

**2.** A new browser page will open to run the simulation of your supply chain – switch to the new browser page and keep your existing browser page open so you can come back to it later and edit the supply chain design

**3.** On the new simulation screen, click the Play button to start the simulation - you may then set the interval to process the run time faster or slower - it is suggested that you begin at 1 hour and move the pace to 24 hours or more. (By doing this your simulation will run faster but you will also get fewer data point readouts from your simulation.)

**4.** The simulation will begin and start displaying real-time operating data for facilities, vehicles, products and routes – you can click on different tabs and facilities to see this data while the simulation runs – trends will become visable as you view the data

# 1.10 Simulation Results
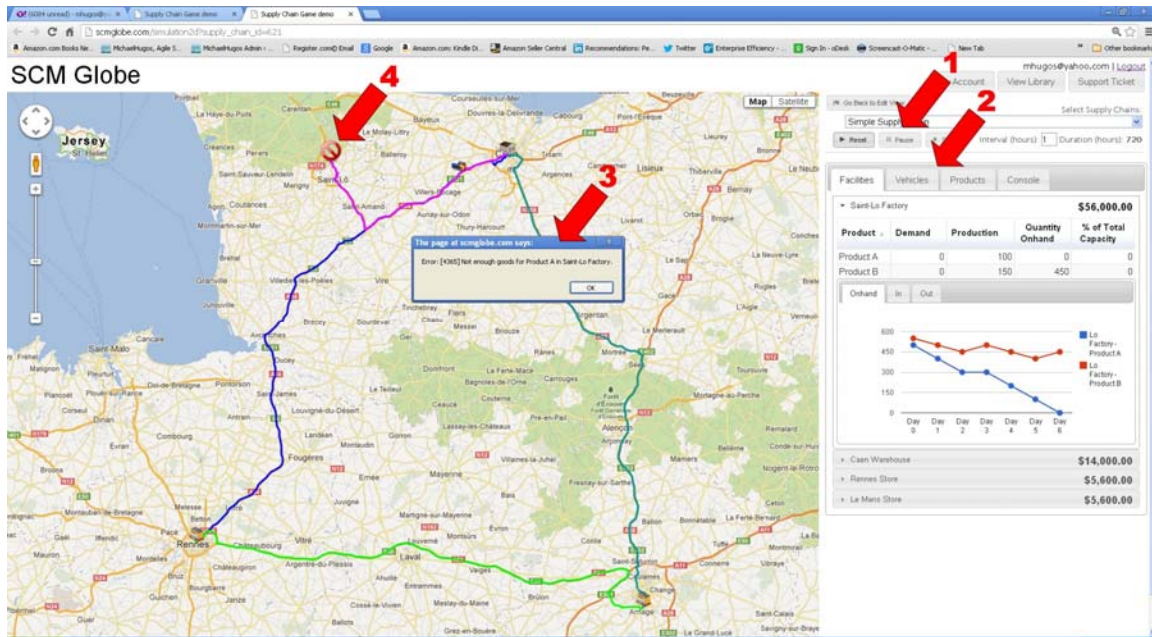


**1.** Information will appear as the simulation runs – click "Pause" to pause the simulation at any point, click "Stop" to stop simulation at any point.

**2.** Click on the tabs for "Facilities", "Vehicles", "Products" and "Console" to review supply chain performance data in those areas. In Facilities you can click on individual facilities to see data for that location

**3.** Error message box appears when a supply chain failure occurs - message provides specific information regarding the point of failure

**4.** Click "OK" in the error message box and a red circle with slash appears over the facility where the failure occured.

# 1.11 Simulation Status Information
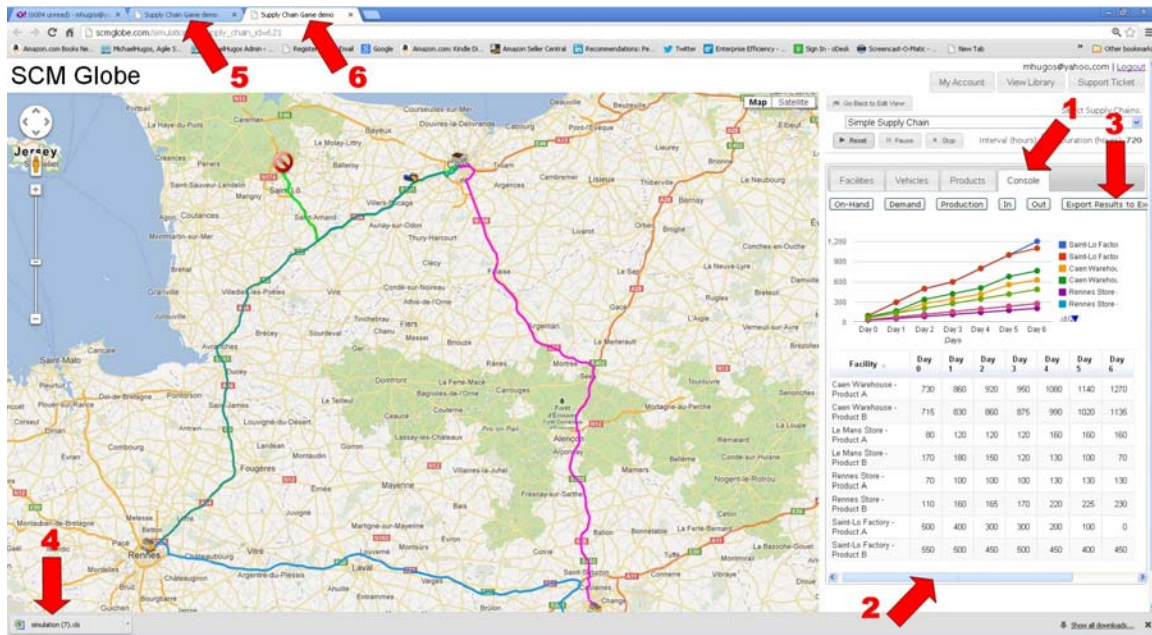


**1.** When a supply chain failure occurs, explore the simulation data to find reasons for the failure. There is a wealth of data provided and you can analyze it when the simulation stops to see trends, patterns and problems. Click on "Facilities", "Vehicles", "Products" and "Console" to view this data.

**2.** You can view numeric data, or scroll to the right and click on "Show graphs" to see data as colored line graphs. Click on "On-Hand", "Demand", "Production", "In", "Out" to see graphs of that data over time for all facilities – this reveals trends in product inventory at different facilities

**3.** You can export this console data as a spreadsheet to your PC, click on button labeled "Export Results". Once the data is exported to your PC as a spreadsheet you can do further analysis on the data using Excel spreadsheet capabilities.

**4.** After you click on the "Export Results" button the data will automatically download to your PC as a spreadsheet. You can also attach this spreadsheet to an email and send it to others who want to see the results of your simulation.

**5.** When you see where the problems are in your supply chain, leave the simulation browser page open and click on the previous browser page to edit products, facilities, vehicles and routes so as to make changes needed to fix failures shown by the simulation.

**6.** When changes are made, click on the simulation browser page and be sure to click the PAGE REFRESH button before running the simulation again – that simulation will run and show results of the changes you made. Continue to tweak your supply chain design based on simulation results until you have a supply chain that meets desired performance objectives.

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We are continuously adding new features to SCM Globe. The features we add depend on your feedback and comments. Please let us know what new features you would like to see.

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