

Table of Contents

The SCCORI Simulator System	1
System Requirements	1
Accessing the System	2
Registration.....	2
Login.....	3
Main Menu	3
Create Supply Chain.....	3
Create Meeting	4
Enter Simulation.....	7
Ordering.....	10
User Details.....	10
Transport Details.....	10
Cost Details.....	11
Ending the Simulation.....	12
Running Another Simulation	12
Reports.....	12
Archived Reports.....	13
Chat Logs.....	13
SCCORI Chat.....	14

The SCCORI Simulator System

The SCCORI Simulator System was designed to simulate a supply chain environment, and to demonstrate the effects various levels of collaboration and information visibility will have on the supply chain. It shows the importance of collaboration between members, and shows how it improves the performance of the supply chain. Furthermore, the SCCORI Simulator can be used as a tool to test performance and new strategies for a real world supply chain.

This manual will familiarize you with the system, and explain the steps you need to go through to create complex supply chain simulations.

System Requirements

The login page to the system (the first page you view) will have the following display to aid you in ensuring your computer will run the simulator properly (Fig 1).

System Requirements

Please make sure you have the following items installed in your system

Internet Explorer Browser 1024x768 Resolution	[DOWNLOAD]
.NET Framework	[DOWNLOAD]
Chat program	[DOWNLOAD]
Adobe SVG Viewer	[DOWNLOAD]
Internet Explorer 5.x or higher, 128-bit	[DOWNLOAD]

Fig 1

1024X768 Resolution – This system was developed to be viewed using 1024 by 768 resolution. The link will show instructions on how to check your current settings. Selecting a smaller resolution may cause some difficulty in viewing some pages.

.Net Framework – This windows component is necessary to use this system as it is an application built using the .Net Framework. You can check to see if you already have the .NET Framework 1.1 installed by clicking Start on your Windows desktop, selecting Control Panel, and then double-clicking the Add or Remove Programs icon. When that window appears, scroll through the list of applications. If you see Microsoft .NET Framework 1.1 listed, the latest version is already installed and you do not need to install it again. If you do not have it installed, the link displayed above will initiate the download from Microsoft.com.

Chat Program – This is a chat application that was developed concurrently with this system. It was also developed using the .Net Framework, so it requires the previous

download to be used. This program will enable you to communicate with other members of your supply chains.

Adobe SVG Viewer - This download will enable you to view charts detailing the performance of your supply chain. This download is not necessary to run simulations, but is needed if you wish to view the charts afterwards to compare and analyze the results of your simulations.

Internet Explorer 5.x – This system was designed to use Microsoft Internet Explorer version 5.x or later. If you are using a different browser, you may encounter problems. If you are already using Internet Explorer, you can check which version you are using by clicking “Help” on the menu bar, and selecting “About” from the drop down list.

Accessing the System

This system was designed to run over the Internet, but can be easily configured for use on a local Intranet. This section will explain how to gain access to the system. The welcome page for the system is shown below, and it is through this page that you enter the system (See Fig 2)

Login

User Name:

Password:

Not a member yet ? [\[SIGN UP\]](#)

Fig 2

Registration

If you are not already a system user, you must click on the [SIGN UP] link in order to setup your user account. The registration page requires that you enter your first and last name, as well as your email. You are able to select your own password and unique username that you will use as your login credentials.

An added feature of this system is to be able to join a particular group of users, or simply join the public domain. To join a specific group, select the group from the drop down list and enter the group password. The groups in the system are maintained by SCCORI staff, and passwords are only distributed to appropriate persons. To join the public group, no password is required.

Login

To log in to the system, simply enter your unique username and password into the appropriate fields on the welcome page. Also, if you are idle for too long after logging in, you will be logged off automatically.

Main Menu

Once logged in, you are taken to the Simulator Center page (Fig 3). This page shows the areas you are able to access and provides detailed descriptions of them. In order to partake in an actual simulation, you must first create a supply chain, and then create a meeting with that supply chain. Information on past simulations can also be accessed from this screen.

SIMULATOR CENTER

1	2	3
Create SC	Set up a Meeting	Attend a Meeting
Create your products Supply chain. You can create more than one Supply Chain, with different people	Invite your partners in the SC to a virtual meeting where you can discuss related business issues	Communicate with your partners in the SC. Participate in the SC simulator to improve demand planning and service quality
Create SC	Create Meeting	Enter Sim

4 Data History

- Archived reports. (Tabular & Line Chart Reports)
- Archived Chat files

Look at your previous simulation reports and conversation session.

Fig 3

Create Supply Chain

This section describes the process involved in creating a supply chain with other registered system users. This is a relation that can be used to set up numerous types of simulations. The figure below shows the screen that helps you create your supply chains (Fig 4).

1 Create Your SUPPLY CHAIN

[« Back to Simulator Center](#)

SC. Name:

Give your SC a name that's reflects its purpose and goal.

Select 3 Members to be part of the above SC. and click CreateSC Button

Select	Last Name	First Name
<input checked="" type="checkbox"/>	Pass	Joe
<input type="checkbox"/>	Entwistle	Fred
<input checked="" type="checkbox"/>	Jones	Darren
<input checked="" type="checkbox"/>	Burnhardt	Lisa

Fig 4

A supply chain must have four members, and since any supply chain you create will include yourself as one of the four, you need to select three other members to join your supply chain. You will give them roles of Retailer, Wholesaler, Distributor, and Manufacturer in the next section. Simply select the three other members, and enter a Supply Chain Name that you will use to reference your supply chains. The name you select must be unique to your collection of supply chains, and it should be fairly descriptive.

When you have created a supply chain, you can continue to the next section to set up a meeting. It is important to know that when you create a supply chain, the supply chain will not appear in the personal supply chain lists of the members you have selected. You will only be able to utilize supply chains that you yourself have created.

Create Meeting

After you have created at least one supply chain, you are able to set up meetings with them. Each meeting will have its own variables that are set by the meeting creator. Once the meeting has been created, these variables will be locked, and will be applied to every simulation you run for this meeting.

The figure below (Fig 5) shows the meeting setup screen. It is here that you are able to customize the simulator to show varying levels so information visibility, and to select the options the simulation will have.

2 MEETING SETUP

[« Back to Simulator Center](#)

2.1. Meeting Room's name

Select SC' names you want to meet with its members and type in a Room's name

Select a SC: Room's Name:

2.2. Assigne roles

	Retailer	WholeSaler	Distributor	Manufacturer
User	<input type="text" value="Joe Pass"/>	<input type="text" value="Darren Jones"/>	<input type="text" value="Brandon Marx"/>	<input type="text" value="Lisa Burnhardt"/>
KPI	<input type="text" value="None"/>	<input type="text" value="MaxInv"/>	<input type="text" value="None"/>	<input type="text" value="None"/>

2.3. Number of Products.

One Two

2.4. Product Parameters.

Default (System will use predefined product parameters) **Custom** (User's defined product's parameters)

2.5. End User's Demand .

Random Historical Spiked

- Random demand (System will place order randomly in a predefined pattern).
- Historical demand (Order will be placed based on historical demand).
- Spiked demand (User will face unexpected order at certain point)

2.6. SC System.

Pull Users will have full visibility on others partners data **Push** Users will see their own data only

Comment.

Fig 5

First, you must select a supply chain to use in the simulation, and give it a unique name. Second, after selecting a supply chain, the members will be loaded into the drop down lists for the Retailer, Wholesaler, Distributor, and Manufacturer. You cannot place one player in two positions, and each player must be assigned a role. You can also assign a specific KPI (Key performance indicator) to certain players. An example of a KPI is to maintain maximum inventory. This means that the chosen player will have the objective

to order as much stock as possible. Different KPI's will have different impacts on the supply chain performance, but it is up to the meeting creator which KPI's to include or not.

You can create a simulation that has one or two products. Two products will introduce consolidation of orders to reduce costs, and increases the complexity of the simulator functions.

One option that you can select is whether or not to allow your supply chain members modify their own simulation parameters, such as product cost, backlog cost, and inventory information. It is recommended that you use the defaults unless you have previously informed your supply chain members of values to be used. Using custom values enables you to customize the simulation environment to match your real world supply chain environment. Each player would be responsible for setting their own parameters when before they join the actual simulation.

The order scenario options will dictate the orders that the retailer receives, or the “seed order”. The options are as follows: (Table 6)

<u>Option</u>	<u>Description</u>
Random	The seed order will be a randomly generated number
Historical	The seed order will come from a pre-constructed list, which gives a relatively stable environment to test your supply chain's performance.
Spiked	This scenario contains a stable ordering environment, with the exception of a large backlog causing order. This scenario will test how your supply chain reacts to backlogs.

Table 6

And finally, selecting a Push system will cause all details and information about other members of the supply chain to be hidden. A Pull system will allow you to see details about the other member's inventory, orders, and costs. This push versus pull scenario is a great tool for determining the impact of collaboration on your supply chain.

Before you can create your meeting, ensure that a unique and descriptive name for your meeting has been entered. Once created, you and your supply chain members will be able to enter the meeting to run multiple simulations using the rules you have specified on this page.

Enter Simulation

This is where you go to partake in meetings, and run simulations with your other system users. The first screen (Fig 7) contains the list of meetings you may enter, and has text fields for all simulation variables.

3 SIMULATOR SETUP

Select your meeting, Enter product/s parameters if needed, and click [Enter Sim] when done

Meeting	Jan27Pull	
Your Role	Wholesaler	
<hr/>		
Logistic Info		
Trans Mode	Truck	
Container Size	20ft	
Lead Time (days)	3	
Special Promotion		
Order Qty:	0	Discount: 0 %
Product Info		
	Product 1	Product 2
Initial Cost	0.5	0
Handling Cost	0.03	0
BackLog Cost	1	0
Inventory Info		
Current Inventory	50	0
Max Inventory	80	0
Safety Stock	40	0
<hr/>		
Enter Sim		

Fig 7

If the meeting rules allow you to modify these variables, the text fields will be enabled and you can change them to any value you wish. If you make changes to these values, they will become the default values used for any future simulations that you partake in for this particular meeting. The variables are explained below (Fig 8):

<u>Parameter</u>	<u>Description</u>
TransMode	The mode of transportation you use to deliver your products. Different modes have different costs associated with them
Container Size	Specifies the size of your shipping container. Different sizes have different costs associated with them, and can hold varying amounts of product.
Lead Time	The time it takes in days (turns) for your product to reach its destination
Order Qty	The number of items a customer must order from you before a discount is given. A value of 0 will disable the discounts.
Discount	The percent savings given to a customer when they order at least the amount specified in Order Qty. A discount must be between 0 and 100.
Initial Cost	The sale cost of the product
Handling Cost	The charge incurred for each item in your inventory for each cycle for the simulation. Holding a large inventory will cause a larger Handling Cost to be charged to you.
Backlog Cost	If you are unable to supply a customer with product, this is the charge incurred for each turn you are unable to fill the order.
Current Inventory	The amount of inventory that you have when the simulation begins
Max Inventory	The maximum amount of inventory you can hold. The simulator will not allow you to go over your maximum inventory. Note that any stock you have already ordered, or is currently on route to your warehouse, is counted as being <i>in</i> your inventory.
Safety Stock	The minimum amount of stock desired before an order must be made. A message will be displayed if you go below your safety stock. You may go below your safety stock, as this item is included to act as a reminder and to prompt for immediate action.

Fig 8

After selecting the meeting, and modifying any variables if you can, you proceed to the wait screen, shown below (Fig 9).

THE SIM. LOBBY

Waiting for other SC members. Please stand by...

Name	Arrived
Dan Gregoire	Y
Kewal Dhariwal	N
Riad Bleibel	N
Peter Carr	N

Cancel

Fig 9

This screen will be displayed until all members have chosen to enter the meeting. Once all members have entered, the simulator will be displayed similar to Fig 10.

THE SIMULATOR ROOM

Welcome: Dan / Retailer

Cycle #: 2

END SIM.

Turn	Role	Order Received	Order Placed	D 1	D 2	D 3	On Hand	Ship. Mode	Unit Cost	Cycle Cost		Total Cost
	Retailer	14	20	20	10	0	16	Truck	\$0.81	\$20.48	Details	\$56.38
	Wholesaler	20	20	20	15	0	20	Truck	\$0.76	\$20.60	Details	\$64.30
	Distributor	20	20	20	15	0	25	Truck	\$0.73	\$20.75	Details	\$69.60
	Manufacturer	20	0	0	0	0	45	Truck	\$0.52	\$1.95	Details	\$41.95

Messages

Product 1 inventory level is below your safety stock level of 40

Sim. Info:

Simulator's Type: Pull

Products: 1

Room's Name: PullSim3

Sim #: 2

Future Orders

Info. Center

Order Received Product 1 14	Place your Order Product 1 <input type="text"/>
Refresh	Submit

Fig 10

This screen displays the general information about the simulation, and your information. The row in the table with the large font shows your information. The message area near the bottom will also inform you of any supply problems that arise, such as stock shortages, and Key Performance Indicators. Each player is able to place an order for each cycle that the simulator runs, beginning with the retailer. The columns in the table are described below (Fig 11):

<u>Column</u>	<u>Description</u>
Turn	A green light indicates that it is that players turn to place an order
Role	Shows the role of the user, and can be clicked on for more detail
Order Received	This is the amount of product requested from you
Order Placed	This is the amount of product you requested from your supplier
D1,D2,D3	Delay – is the amount of inventory in transit. The amount in D3 is the amount that will arrive at the beginning of the next cycle
On Hand	The amount of inventory you have. A negative number is displayed as red. If you are in negative inventory, the amount in red will be delivered as soon as it becomes available.
TransMode	A description of the transportation mode being used. Can be clicked on for more detail, such as cost and capacity.
Unit Cost	A calculated average cost for each product purchased
Cycle Cost	The amount of cost incurred during the last cycle you played. Can be clicked on for more detail and a breakdown analysis.
Total Cost	The accumulated Cycle cost during the entire simulation

Fig 11

Ordering

When it is your turn to order, the order button will be enabled. You determine the amount of inventory you would like to order, and enter it into the order field. Note that if you order more stock than one container can carry, you will be charged for another container. Ordering for a two product simulation functions the same as a one product simulation, except there will be two fields to enter your orders. Note that you will not be allowed to go over your maximum inventory.

User Details

Clicking on the Role description of any member in the simulation will show a new window with details about the user. It contains the user's name and email address should you wish to exchange more information.

Transport Details

Clicking on the Transportation description will show the information about that user's transportation mode (Fig 13). It is important to make note of the container capacity of your supplier when placing orders.

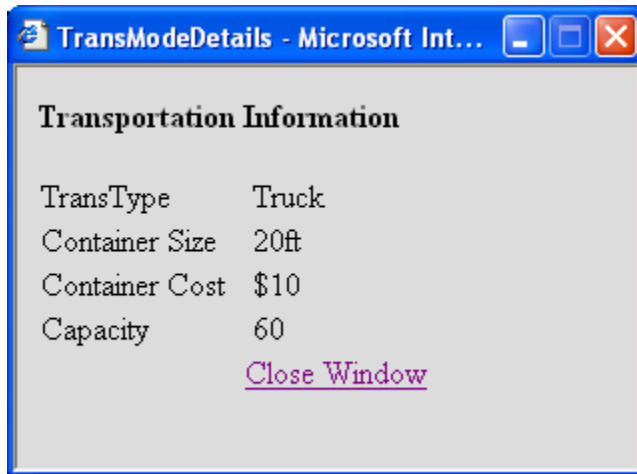


Fig 13

Cost Details

Clicking of the details button will display a breakdown of the costs incurred during the last order by the selected player (Fig 14).

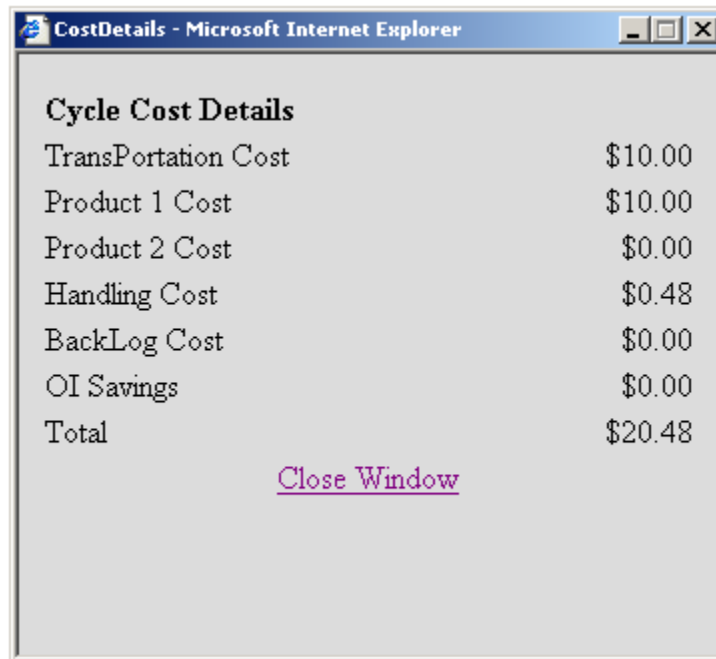


Fig 14

This information is important in determining where the biggest problems in the supply chain are. It will also show the impact poor decisions and collaboration have on costs.

Ending the Simulation

The simulation is designed to run for 30-40 cycles before terminating itself. Also, at any time during the simulation, the meeting creator has the option to end the simulation by clicking on the “End Sim” button.

When a simulation is ended, all players are sent to the reports page where they can view graphs and tables that display the supply chain performance. The Adobe SVGViewer must be installed in order to view the charts.

Running Another Simulation

After a simulation has been completed, the users may enter the same meeting again. This will start a new simulation with the same parameters as the previous one. You may want to run several simulations for a meeting in order to ensure the results are consistent and accurate before making any conclusions.

Reports

When a simulation has been completed, each player is forwarded to the page shown below (Fig 15).

REPORTING CENTER << SIMULATOR CENTER<< | LOGOUT

Simulation was done or may be terminated by the meeting host..

[View your Sim. Reports](#)
(Better viewed with Browser and 1152 by 864 pixels screen resolution)

Tabular Reports

- [Retailer \[Printable Version\]](#)
- [Wholesaler \[Printable Version\]](#)
- [Distributor \[Printable Version\]](#)
- [Manufacturer \[Printable Version\]](#)

Line chart Reports

- [Click to select](#)
- [Printable version](#)

<<Back to the Simulator Menu<<

Fig 15

There are two types of reports available, tabular and line charts. The tabular charts are simply a spreadsheet detailing the status of each player for each cycle of the simulation. It may be difficult to make generalizations about simulation performance based on this reports, so graphical charts are also available.

Each line chart, such as the sample one shown (Fig 16), details one aspect of the simulation for a specific player. You can build the reports for each player in the simulation, and view details such as inventory, unit cost, total cost, and orders placed for each cycle of the simulation.

Select role: Wholesaler



Fig 16

Archived Reports

You can view the results of past simulation from the main menu. By clicking on the Archived Reports link at the bottom, you are shown a list of simulations you have completed. When you select a simulation, the tabular form report is displayed.

Chat Logs

If you have used the SCCORI Chat program during your simulations, you are able to view the chat logs. The chat logs contain a record of all conversations that took place in the meeting room for that particular meeting. These files are only available to those system users that were a part of the simulation.

SCCORI Chat

The SCCORI Chat application is a chat tool that users can utilize to facilitate communication and collaboration between users. It demonstrates the effects of communication and planning on overall supply chain performance. Its use can dramatically increase the performance for all users in the supply chain.

The chat client can be downloaded from the login page, and requires that the .NET Framework be installed on your system. To login to a chat room for your simulation, enter your username and the room name you wish to enter. The room name must be entered exactly as it appears on the simulator page.

The Chat client window is shown below (Fig 17). You will only be able to enter chat rooms for simulations that are currently running, and only members of the meeting will be able to enter. All conversation is logged on the SCCORI servers, and can be downloaded and viewed by meeting participants.



Fig 17