

BGOS: Beer Game on Steroids Tutorial



Created by:



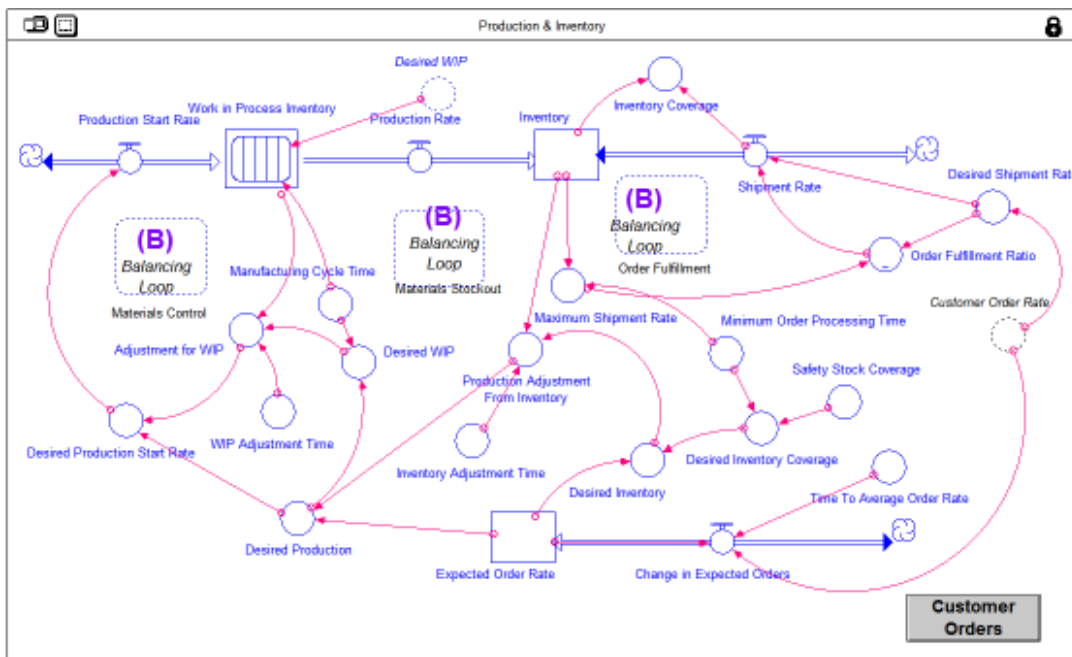
Powered by:



SimBLOX Methodology

SimBLOX greatly simplifies the creation of macro-models. SimBLOX uses a drag-drop-connect interface that allows the user to work with “icons” that represent entire models or submodels. Thus, the user is not burdened with copying and pasting model structure and manually connecting one submodel to another submodel. In essence, SimBLOX allows for “dynamic” system dynamics in which the model structure can easily be changed on the fly instead of remaining static.

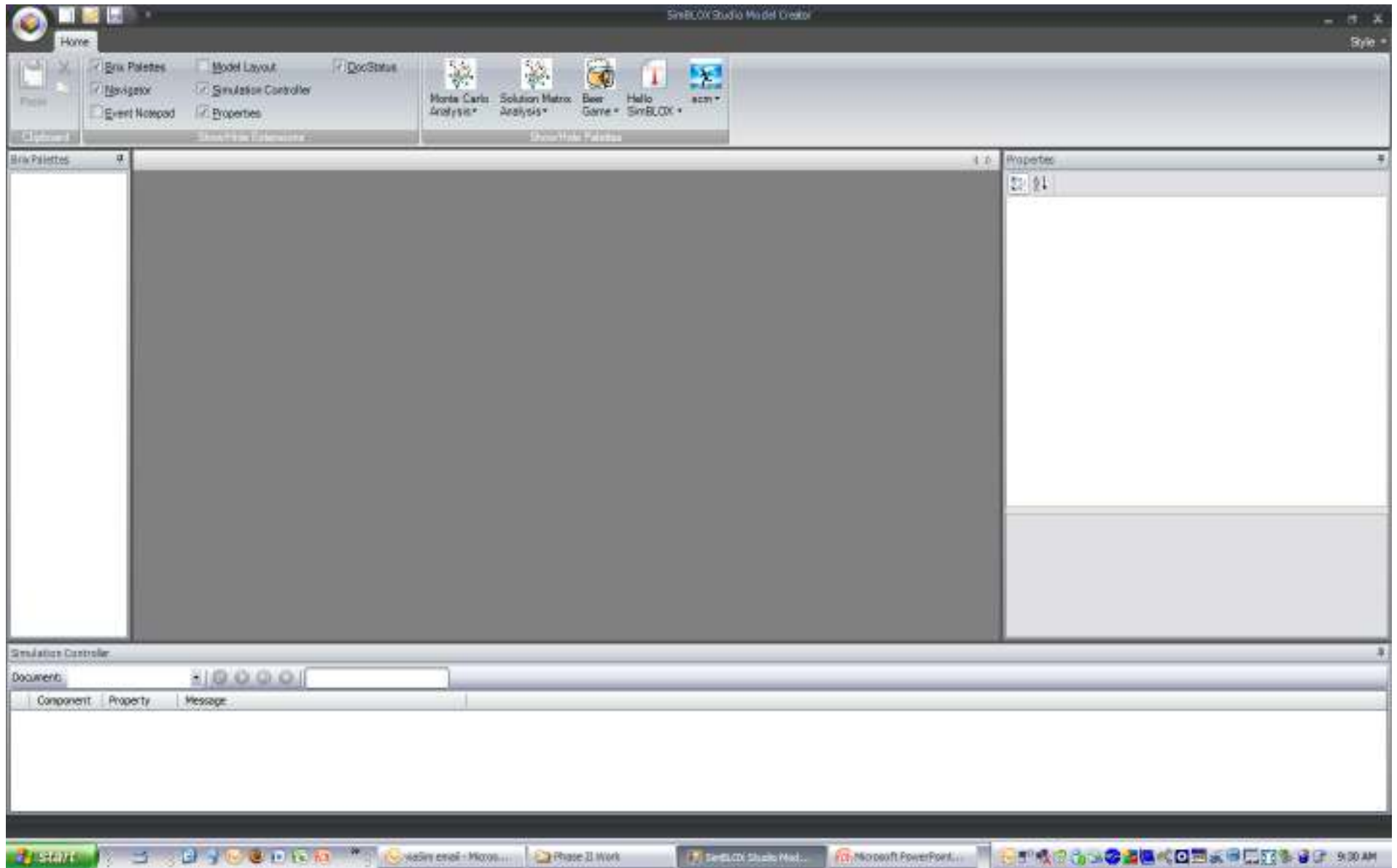
Simulation “agent” model



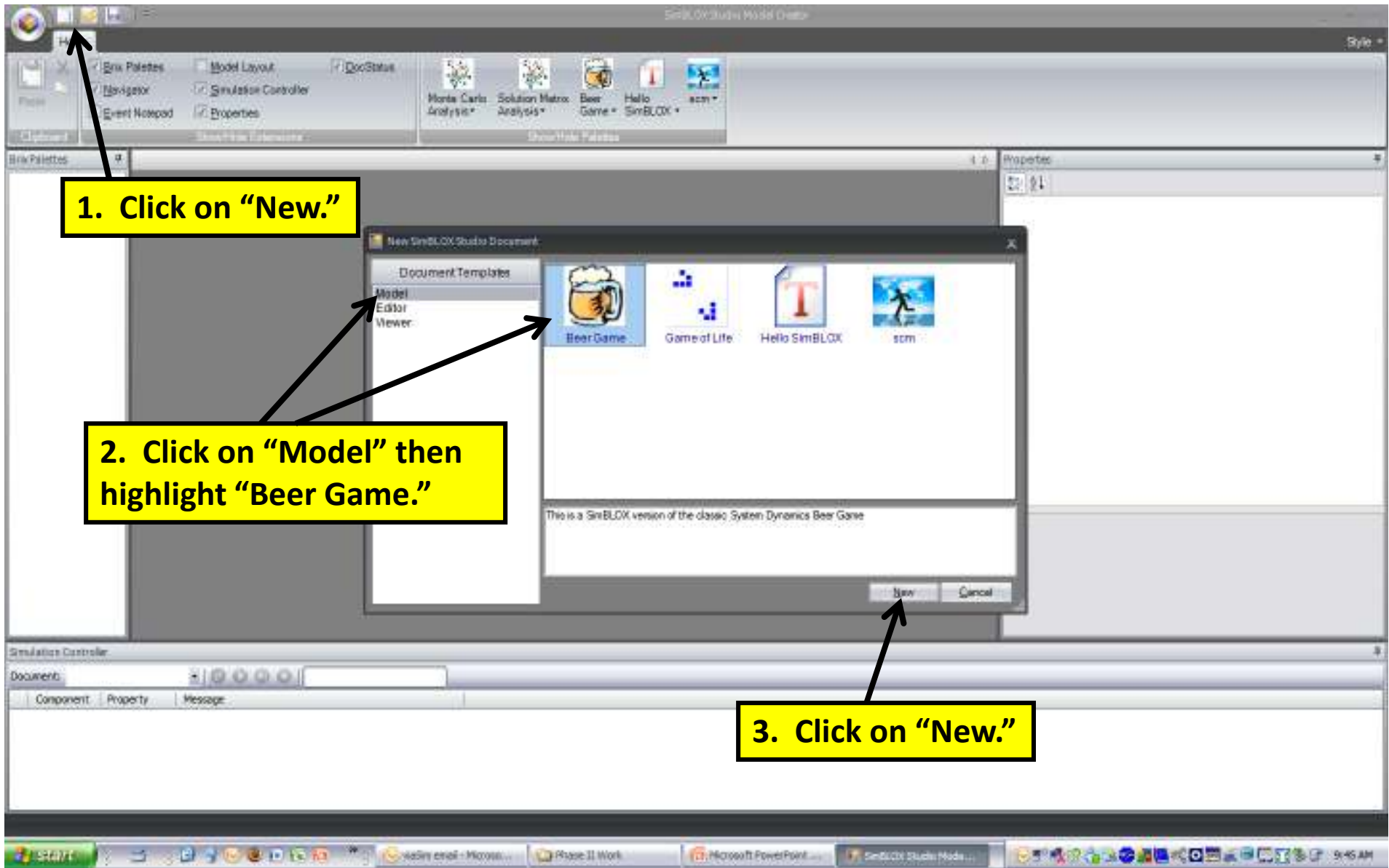
SimBRIX “icon”

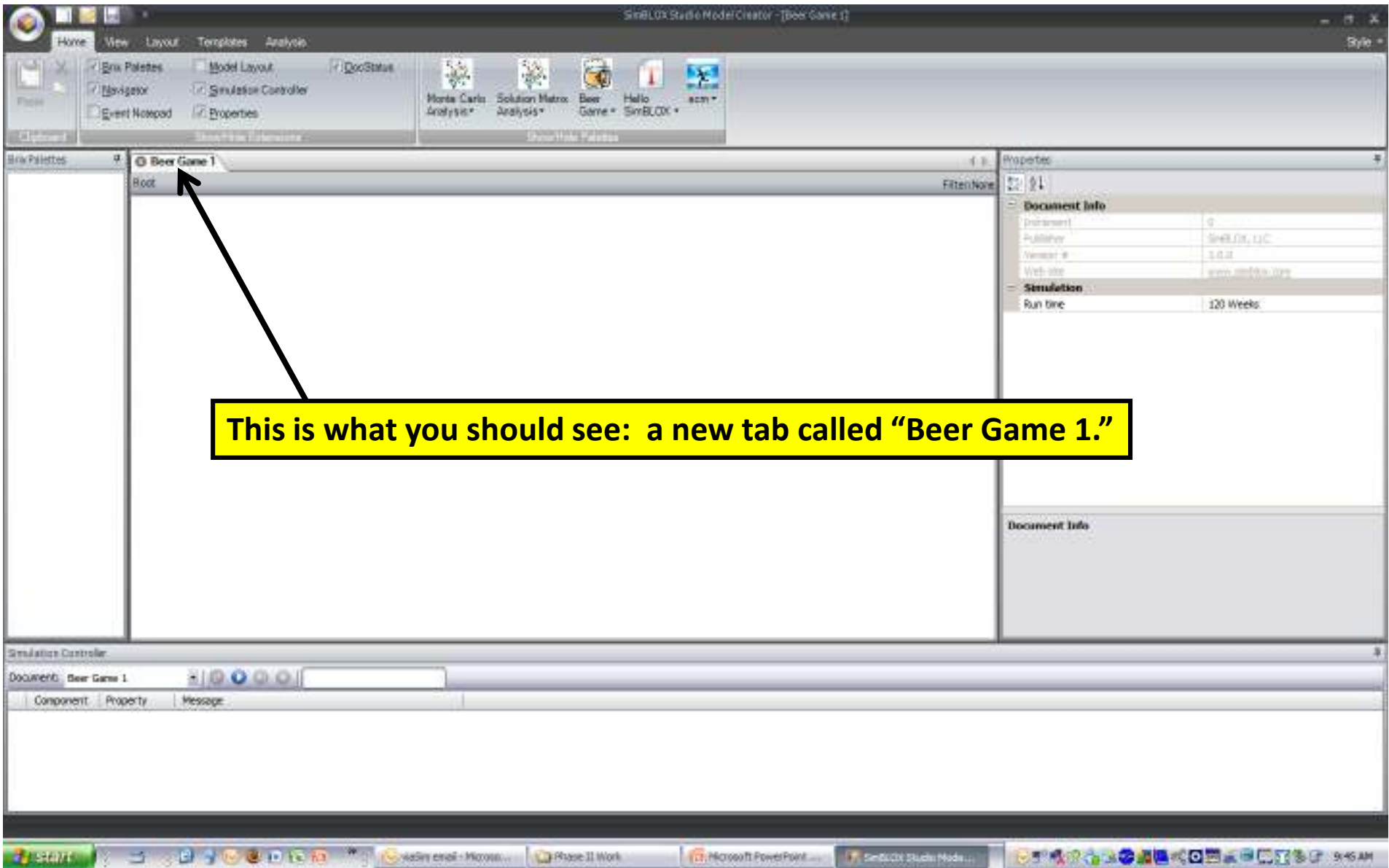


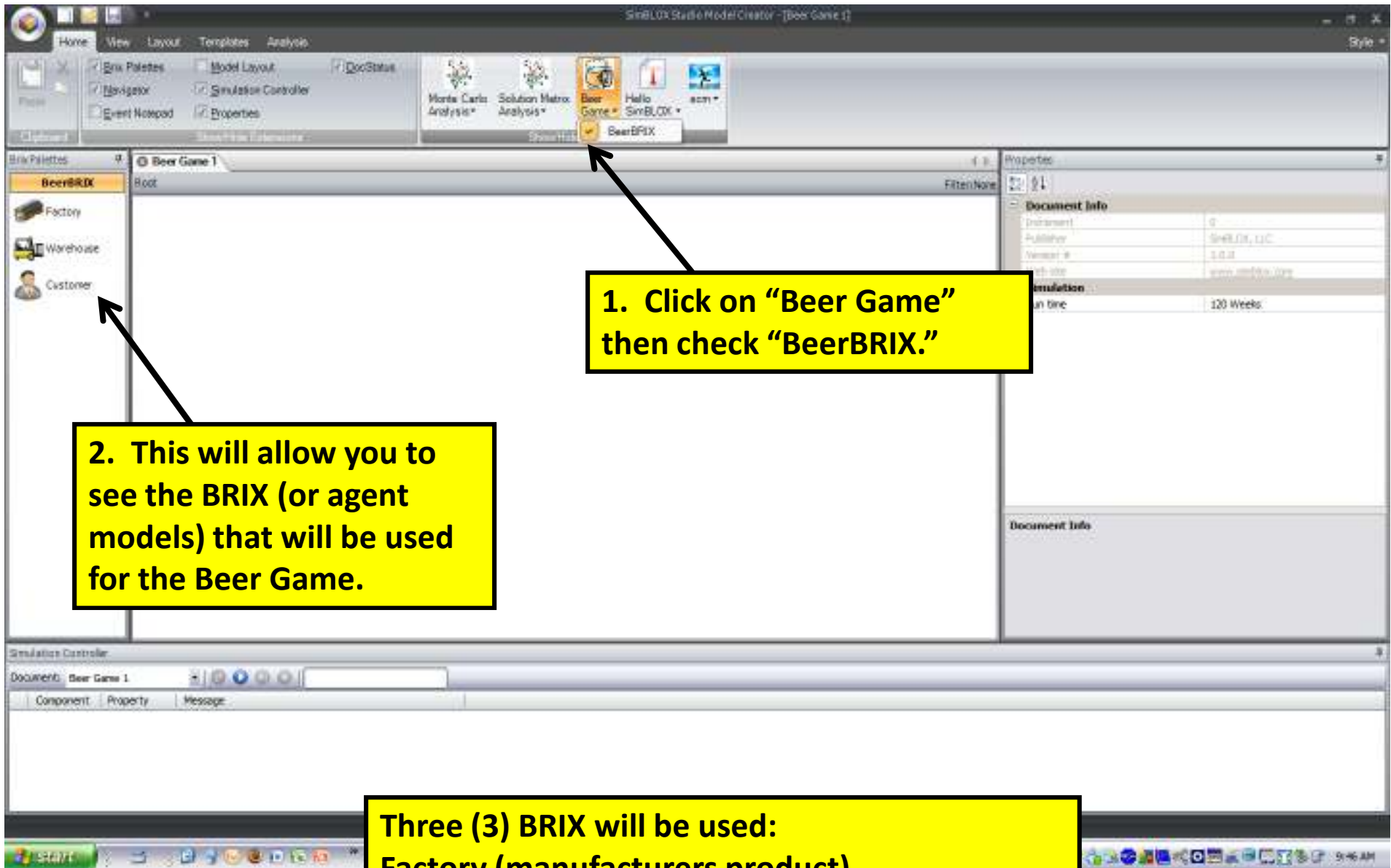
Factory



This is what you should see when you open BGOS.



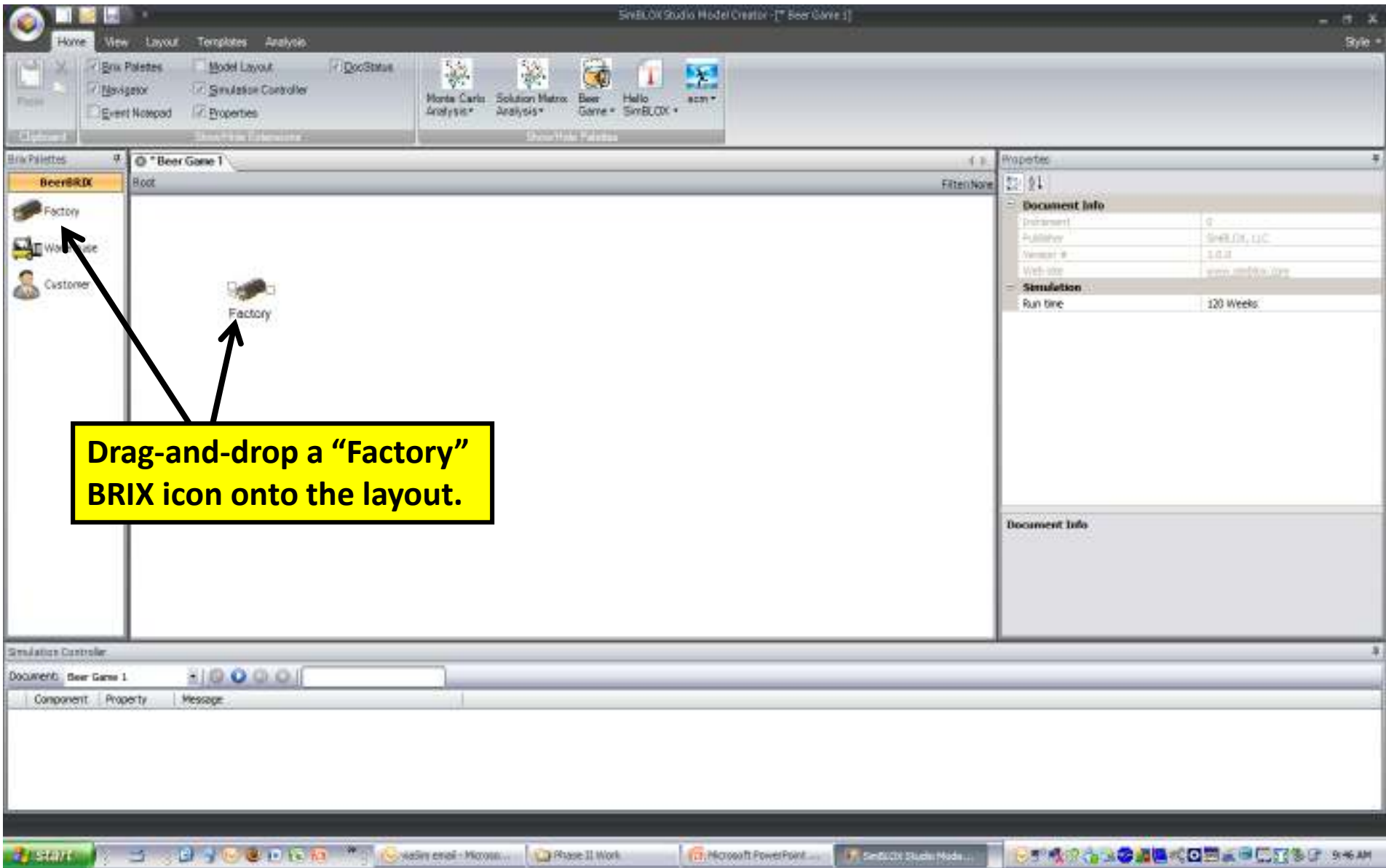


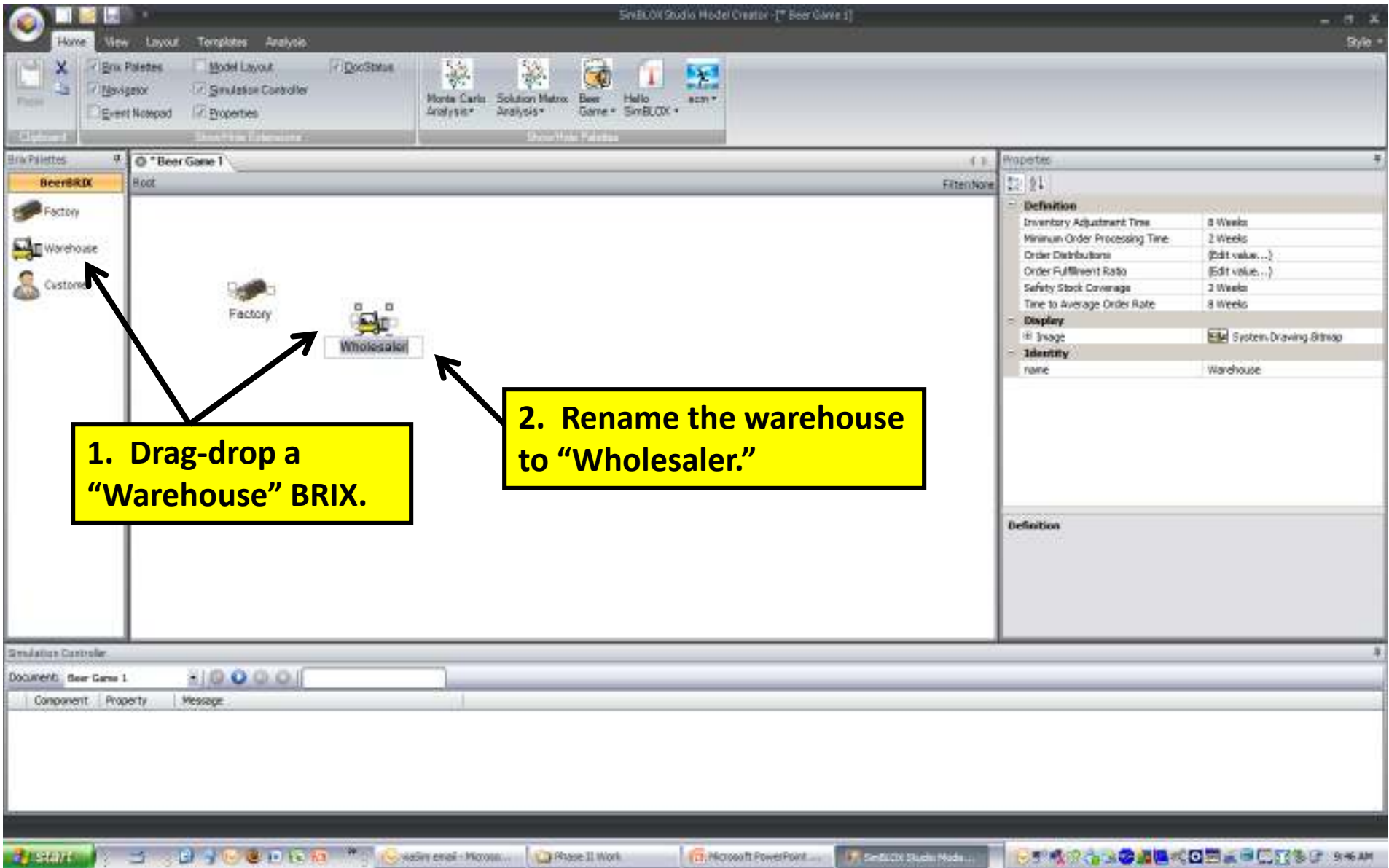


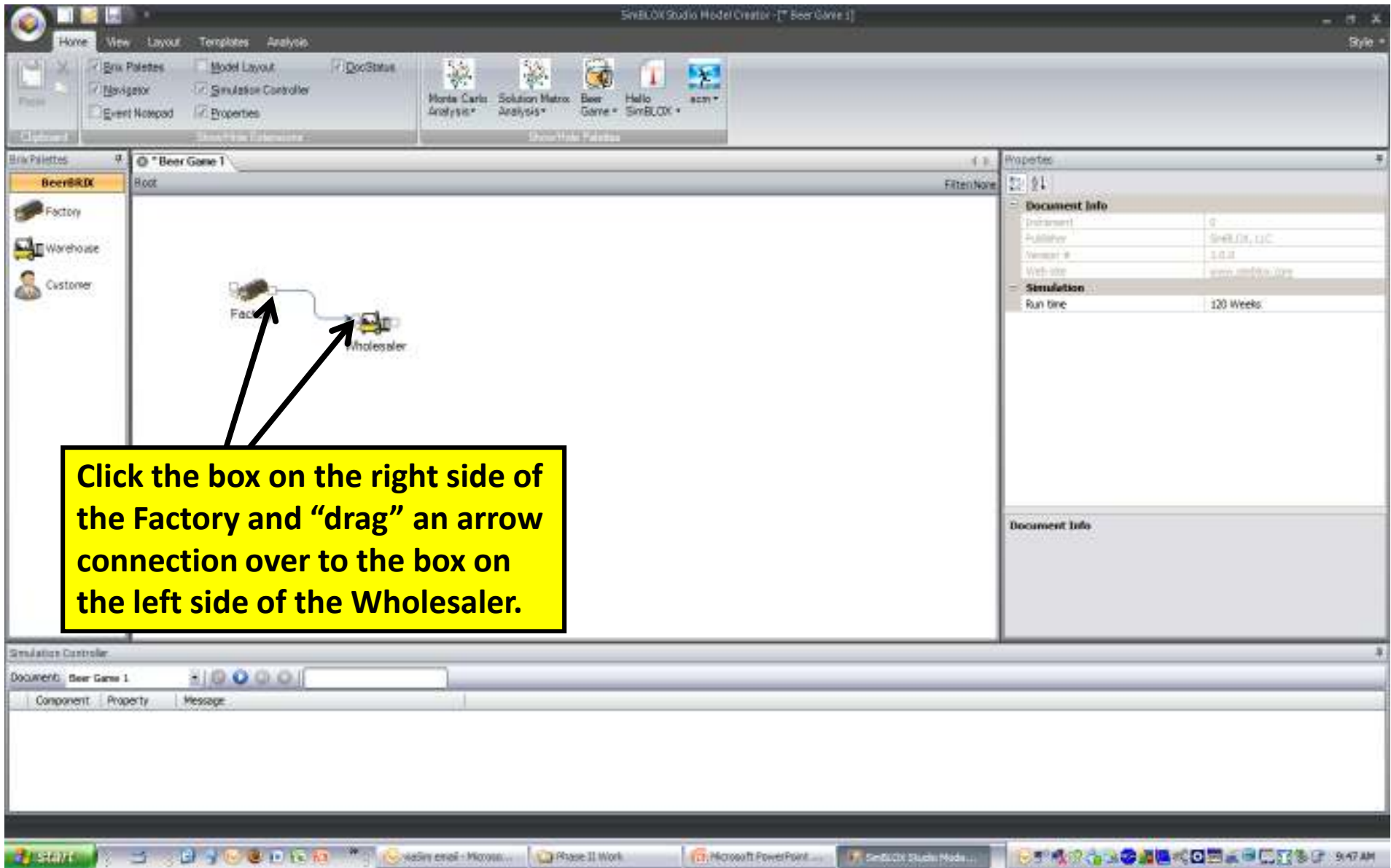
1. Click on "Beer Game" then check "BeerBRIX."

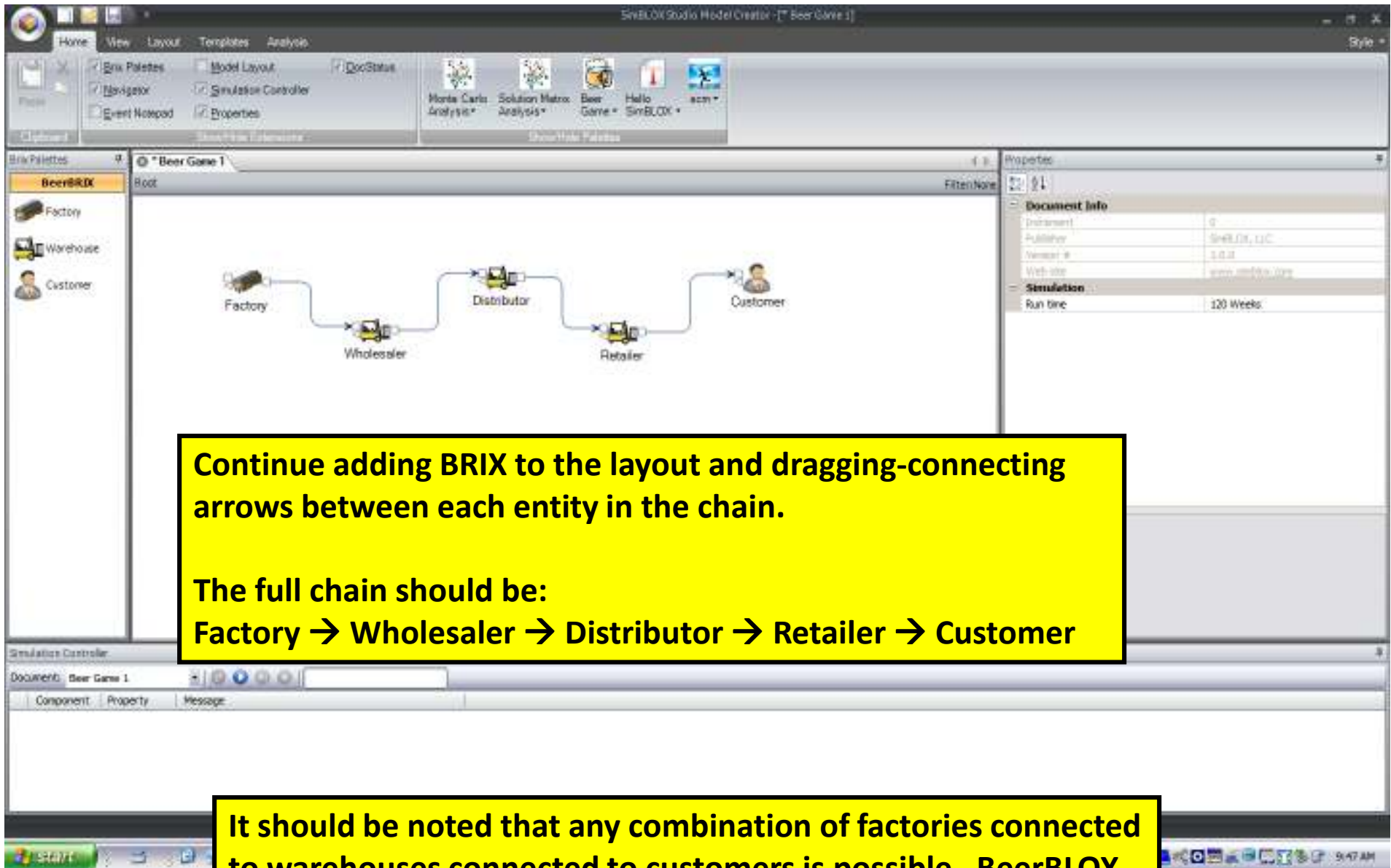
2. This will allow you to see the BRIX (or agent models) that will be used for the Beer Game.

Three (3) BRIX will be used:
Factory (manufacturers product)
Warehouse (stores product, no manufacturing)
Customer (orders/receives the end product)





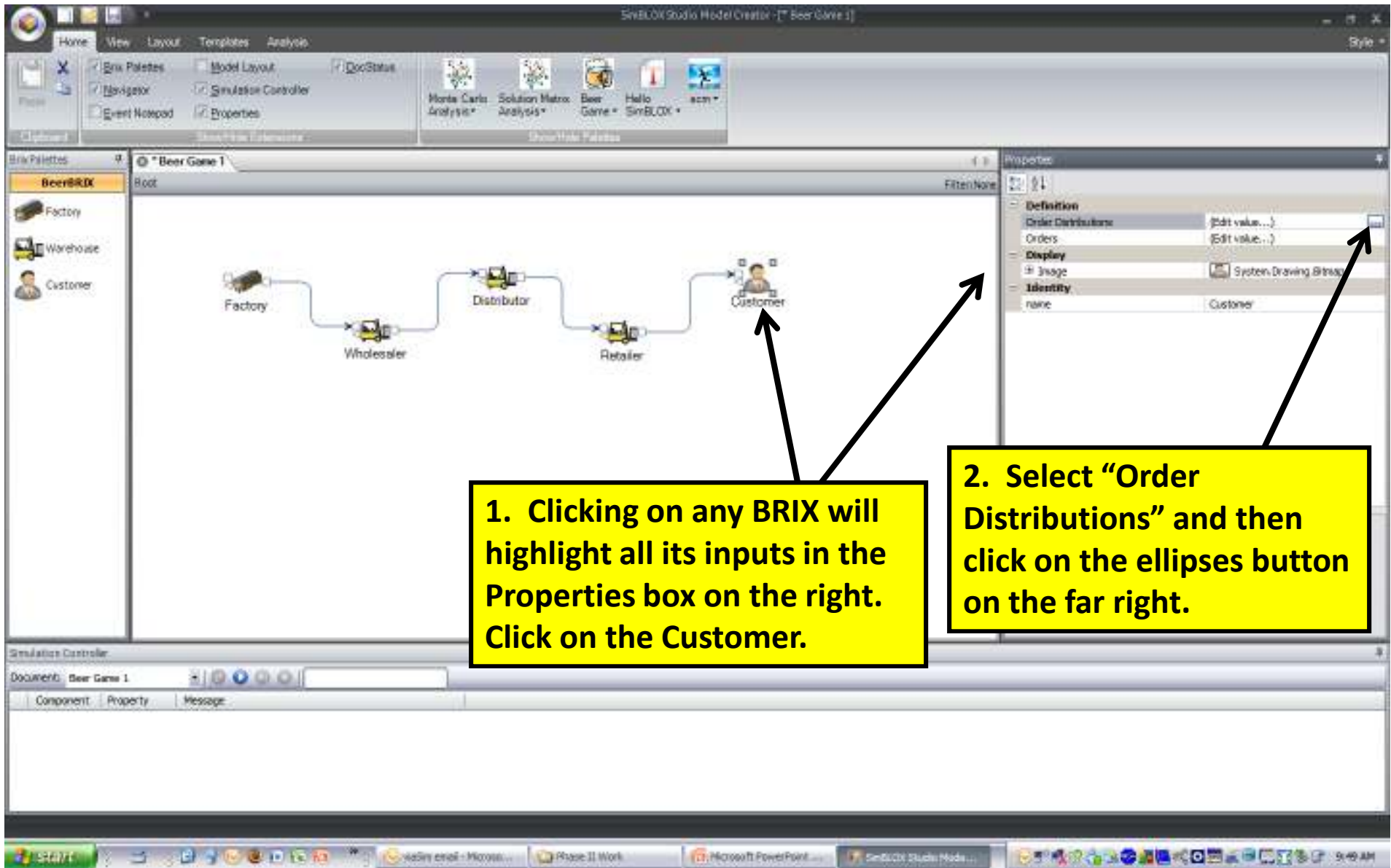


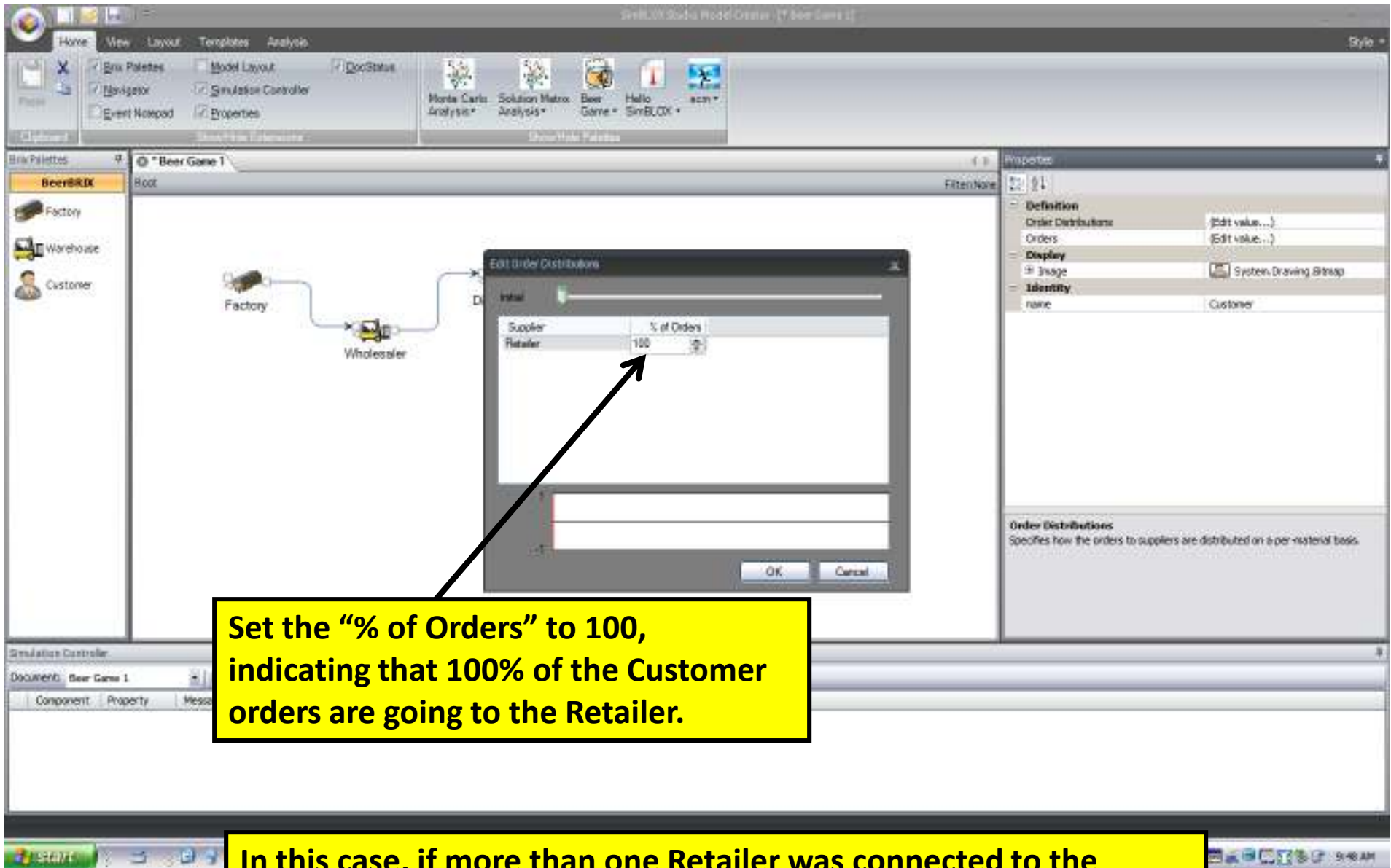


Continue adding BRIX to the layout and dragging-connecting arrows between each entity in the chain.

**The full chain should be:
Factory → Wholesaler → Distributor → Retailer → Customer**

It should be noted that any combination of factories connected to warehouses connected to customers is possible. BeerBLOX automatically aggregates orders/shipments accordingly if, for example, there are multiple customers connected to a single warehouse.





The screenshot shows the SimBLOK Soda Model Creator interface. On the left, a 'BeerBRDX' palette lists 'Factory', 'Warehouse', and 'Customer'. The main workspace displays a supply chain diagram with 'Factory' connected to 'Wholesaler', which is connected to 'Customer'. An 'Edit Order Distributions' dialog box is open, showing a table with the following data:

Supplier	% of Orders
Retailer	100

A yellow callout box with a black border points to the '100' value in the table, containing the text: "Set the “% of Orders” to 100, indicating that 100% of the Customer orders are going to the Retailer."

In this case, if more than one Retailer was connected to the Customer, the Customer could distribute orders in any way and even change this distribution over time so that there is a shift in orders as the simulation progresses.

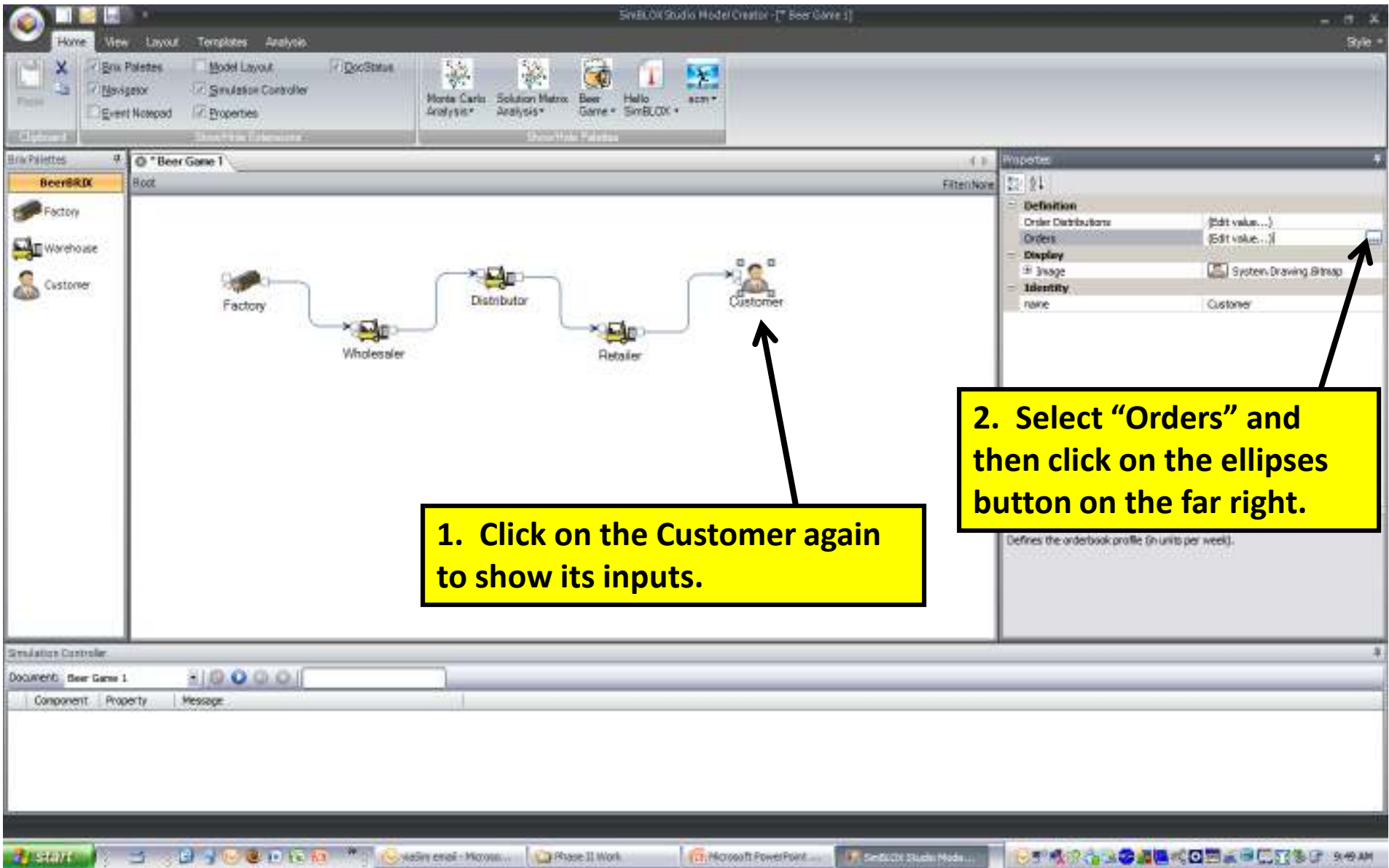
The screenshot shows the SimBLOK 2014 Model Creator interface. The main workspace displays a supply chain model with a Factory, a Wholesaler, and a Distributor. An 'Edit Order Distributions' dialog box is open, showing a table with the following data:

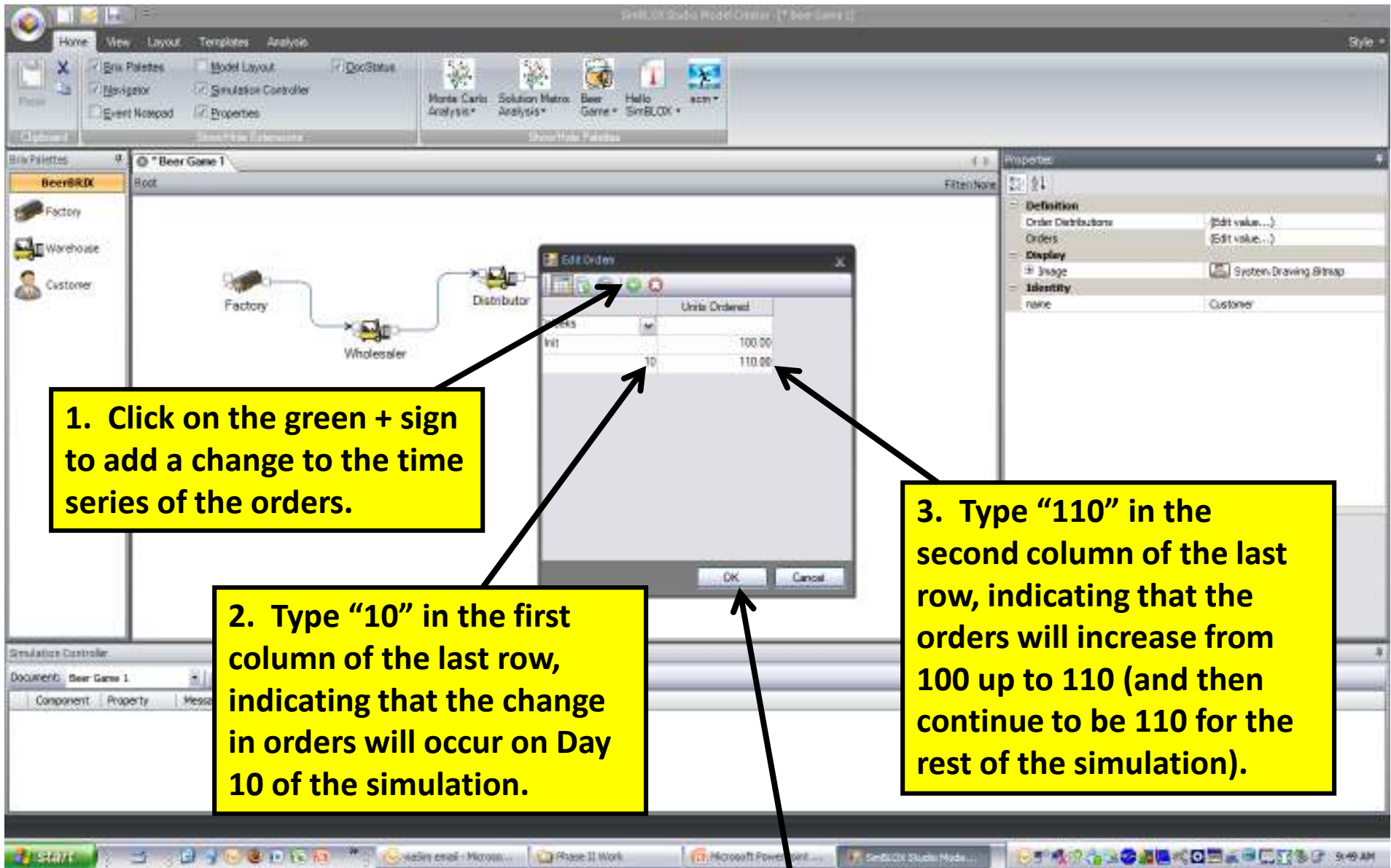
Supplier	% of Orders
Wholesaler	100

An arrow points from the '100' value in the table to a yellow text box at the bottom of the image. The right-hand side of the interface shows a 'Properties' panel with various simulation parameters such as 'Inventory Adjustment Time' (8 Weeks) and 'Minimum Order Processing Time' (2 Weeks). The bottom of the screen shows a 'Simulation Controller' panel with a log of events.

Repeat this process of setting order distributions to 100% for each entity in the model that has a supplier attached to it. In this case, this is required for:

- Customer**
- Retailer**
- Distributor**
- Wholesaler**





1. Click on the green + sign to add a change to the time series of the orders.

2. Type "10" in the first column of the last row, indicating that the change in orders will occur on Day 10 of the simulation.

3. Type "110" in the second column of the last row, indicating that the orders will increase from 100 up to 110 (and then continue to be 110 for the rest of the simulation).

4. Click OK to accept the change.

SimBLOK Studio Model Creator - [* Beer Game 1]

Home View Layout Templates Analysis

File Edit View Layout Templates Analysis

Clipboard Show/Hide Subelements Show/Hide Palettes

Monte Carlo Analysis* Solution Matrix Analysis* Beer Game* Hello SimBLOK* etc*

Brick Palettes

BeerBRDX

Factory Warehouse Customer

* Beer Game 1

Root Filter:None

```
graph LR; Factory --> Wholesaler; Wholesaler --> Distributor; Distributor --> Retailer; Retailer --> Customer;
```

Properties

- Definition
 - Order Distributions [Edit value...]
 - Orders [Edit value...]
- Display
 - Image [System.Drawing.Bitmap]
- Identity
 - name Customer

Orders

Defines the orderbook profile (in units per week).

Simulate Controller

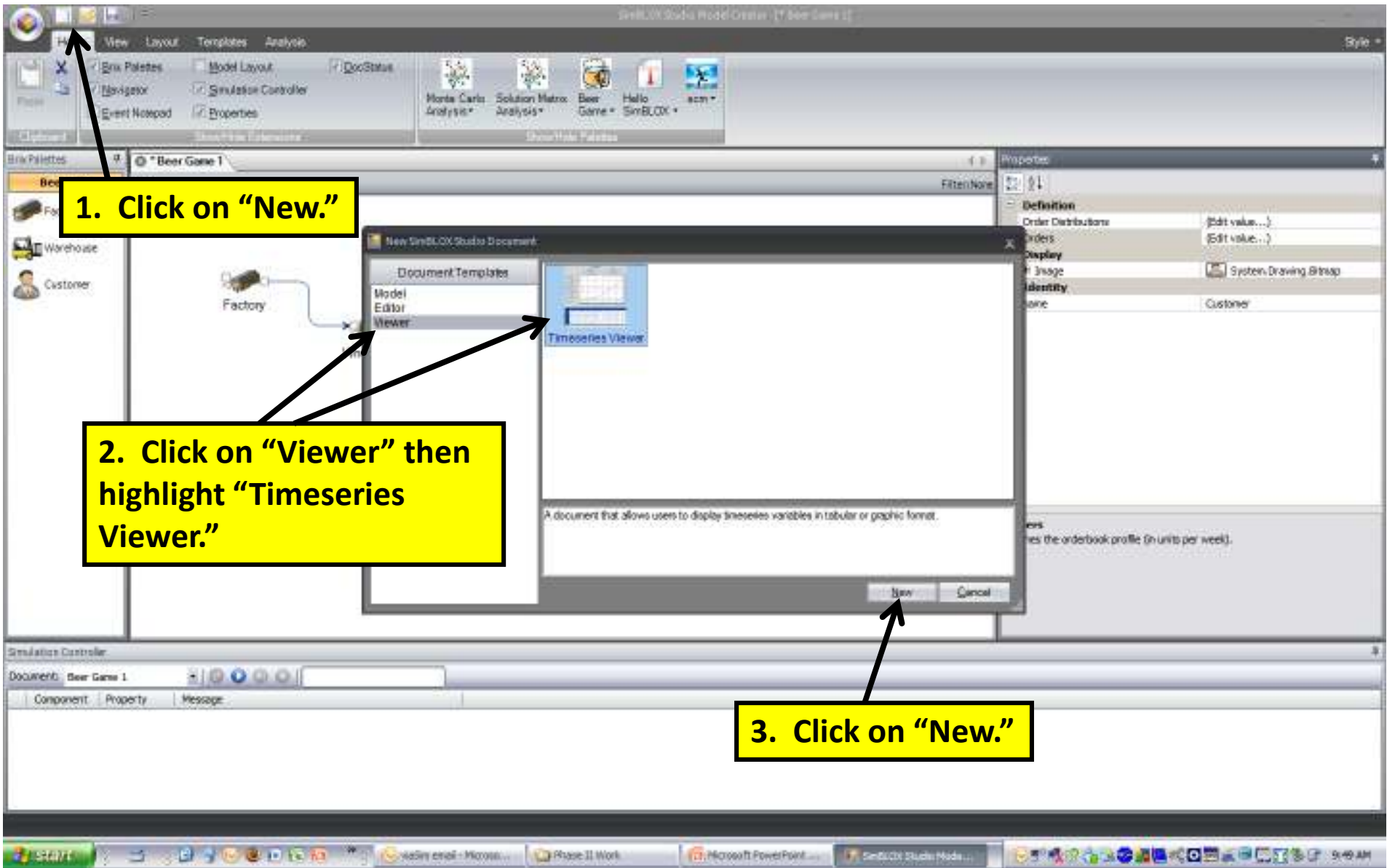
Document: Beer Game 1

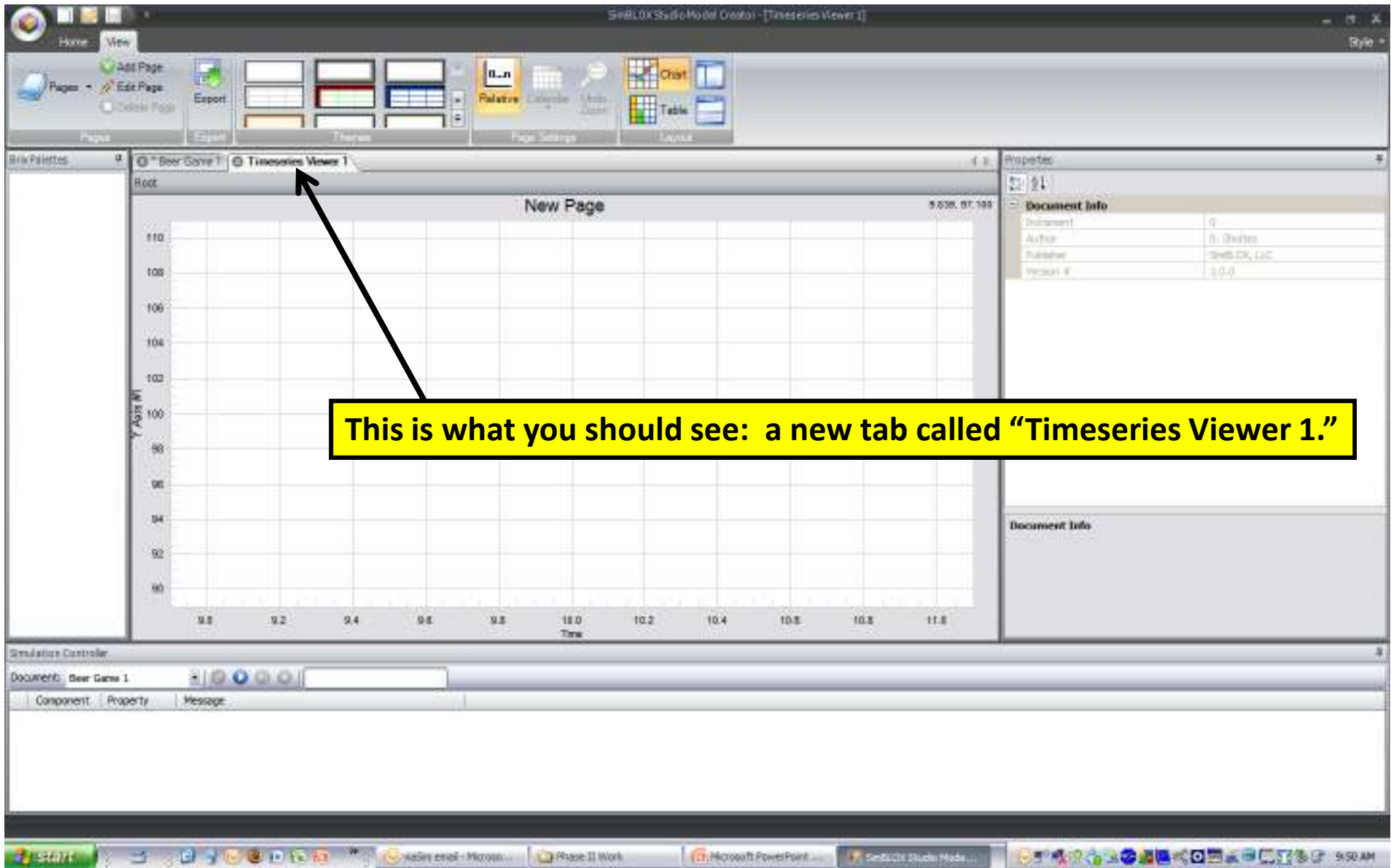
Component Property Message

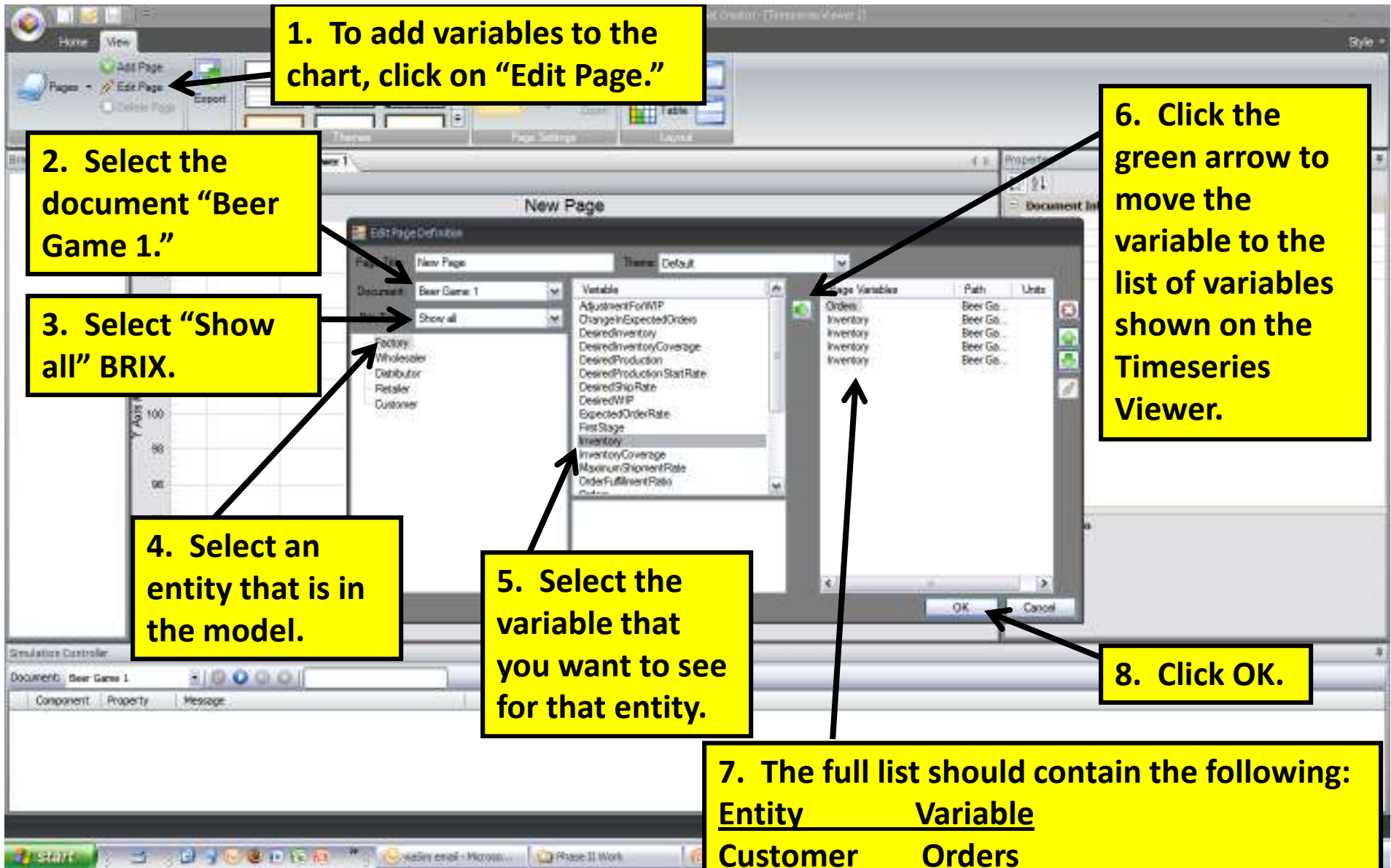
3477

ready excel - Microsoft... Phase II Work Microsoft PowerPoint... SimBLOK Studio Model... 9:49 AM

The model is now ready to be simulated.







1. To add variables to the chart, click on "Edit Page."

2. Select the document "Beer Game 1."

3. Select "Show all" BRIX.

4. Select an entity that is in the model.

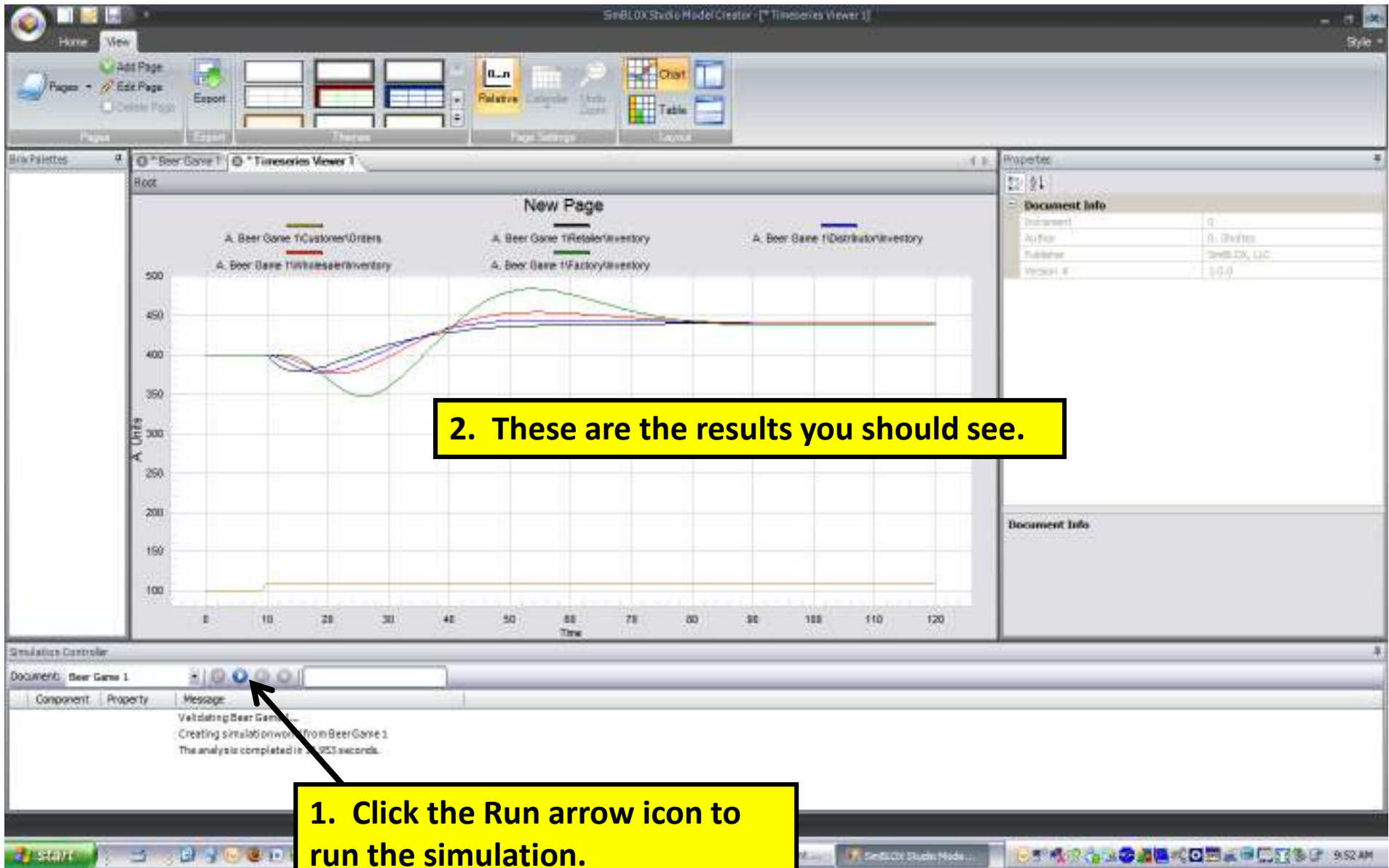
5. Select the variable that you want to see for that entity.

6. Click the green arrow to move the variable to the list of variables shown on the Timeseries Viewer.

8. Click OK.

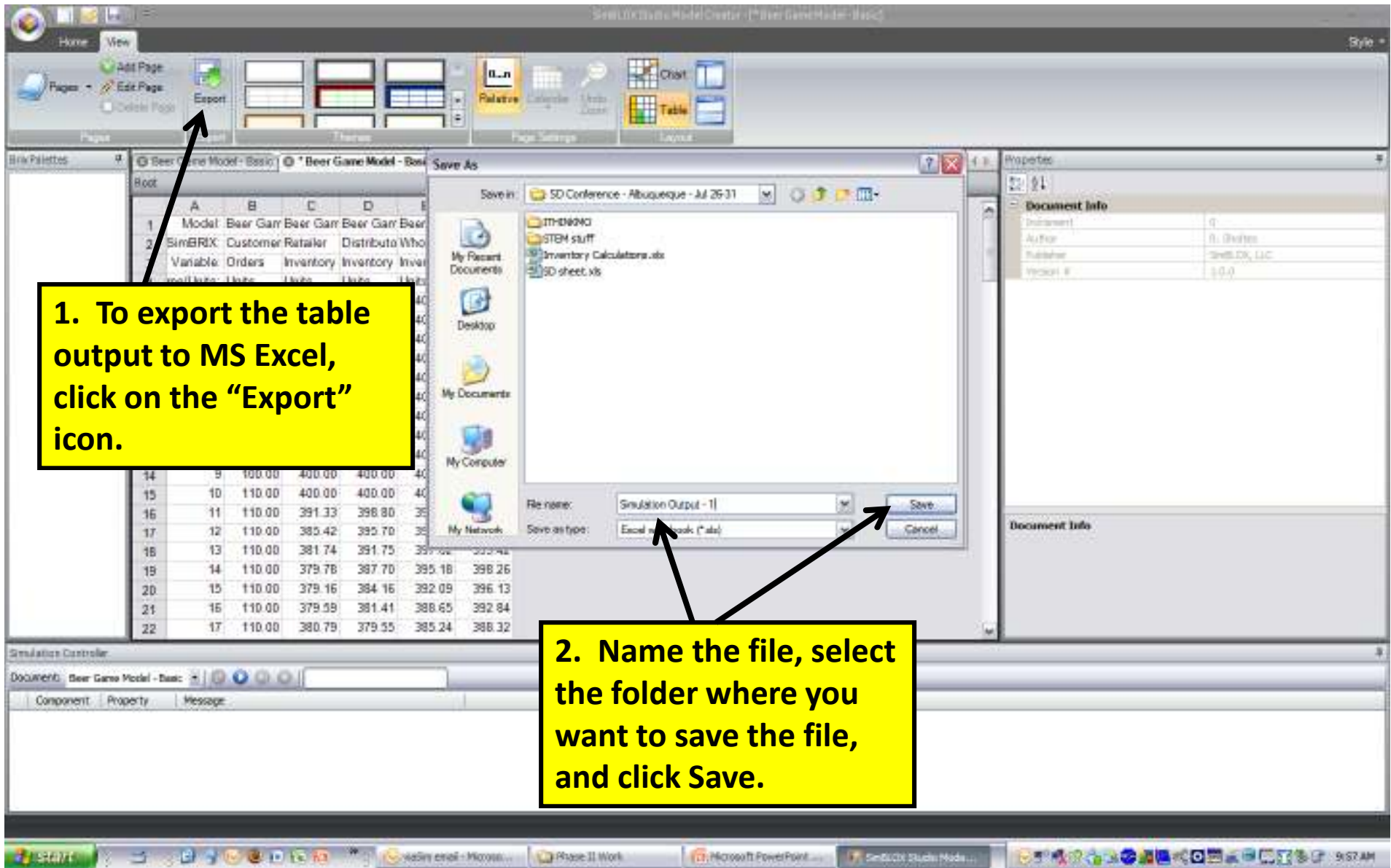
7. The full list should contain the following:

<u>Entity</u>	<u>Variable</u>
Customer	Orders
Retailer	Inventory
Distributor	Inventory
Wholesaler	Inventory
Factory	Inventory



The screenshot shows the SimBLOX Studio Model Creator interface. The main workspace displays a table with simulation data. The table has columns labeled A through F and rows numbered 1 through 22. The data represents a Beer Game model simulation. The 'Table' icon in the toolbar is highlighted with a yellow callout box containing the text: "To see the output in table form, select the 'Table' icon." The callout box is yellow with a black border and a black arrow pointing to the 'Table' icon.

	A	B	C	D	E	F
1	Model:	Beer Gam	Beer Gam	Beer Gam	Beer Gam	Beer Gam
2	SimBRIX:	Customer	Retailer	Distributo	Wholesale	Factory
3	Variable:	Orders	Inventory	Inventory	Inventory	Inventory
4	ma/Units:	Units	Units	Units	Units	Units
5	Init	100.00	400.00	400.00	400.00	400.00
6	1	100.00	400.00	400.00	400.00	400.00
7	2	100.00	400.00	400.00	400.00	400.00
8	3	100.00	400.00	400.00	400.00	400.00
9	4	100.00	400.00	400.00	400.00	400.00
10	5	100.00	400.00	400.00	400.00	400.00
11	6	100.00	400.00	400.00	400.00	400.00
12	7	100.00	400.00	400.00	400.00	400.00
13	8	100.00	400.00	400.00	400.00	400.00
14	9	100.00	400.00	400.00	400.00	400.00
15	10	110.00	400.00	400.00	400.00	400.00
16	11	110.00	391.33	398.80	399.90	400.00
17	12	110.00	385.42	395.70	399.21	399.89
18	13	110.00	381.74	391.75	397.62	399.42
19	14	110.00	379.78	387.70	395.18	398.26
20	15	110.00	379.16	384.16	392.09	396.13
21	16	110.00	379.59	381.41	388.65	392.84
22	17	110.00	380.79	379.55	385.24	388.32



The screenshot displays the SimBLOX Studio Model Creator interface. The main window shows a time-series chart titled "New Page" with the y-axis labeled "A Units" (ranging from 100 to 500) and the x-axis labeled "Time" (ranging from 0 to 120). The chart contains five data series: "A. Beer Game 1 Customer Inventory" (yellow), "A. Beer Game 1 Retailer Inventory" (red), "A. Beer Game 1 Distributor Inventory" (blue), "A. Beer Game 1 Wholesaler Inventory" (green), and "A. Beer Game 1 Factory Inventory" (purple). A yellow callout box with a black border contains the text: "To get back to the chart view for the output, click on the 'Chart' icon." An arrow points from this box to the "Chart" icon in the top toolbar. The toolbar also includes icons for "Table" and "Layout". The right sidebar shows "Document Info" with fields for Document, Author, Publisher, and Version. The bottom status bar shows "Simulation Controller" with a message log.

To get back to the chart view for the output, click on the "Chart" icon.

The screenshot displays the SimBLOX Studio ModelCreator interface. The main workspace shows a flow diagram of a Beer Game Model with components: Factory, Wholesaler, Distributor, Retailer, and Customer. A yellow callout box with a black border contains the text: "To get back to the model, select the tab for the model. In this case, the model was saved as 'Beer Game Model - Basic.blx' and the viewer was saved as 'Beer Game Model - Basic.viewer.'" An arrow points from the callout box to the 'Beer Game Model - Basic' tab in the top-left pane. The right pane shows 'Properties' with 'Document info' and 'Simulation' sections. The bottom pane shows 'Simulation Controller'.

SimBLOX Studio ModelCreator - [Beer Game Model - Basic]

Home View Layout Templates Analysis

File Palettes Model Layout DocStatus

Navigator Simulation Controller

Event Notepad Properties

Monte Carlo Analysis Solution Matrix Beer Game Hello SimBLOX

Clipboard Show Hide Palettes

Beer Game Model - Basic Beer Game Model - Basic

Root Filter None

Factory Wholesaler Distributor Retailer Customer

Properties

Document info

Document	0
Publisher	SimBLOX, LLC
Version #	1.0.0
Web site	www.simblox.org

Simulation

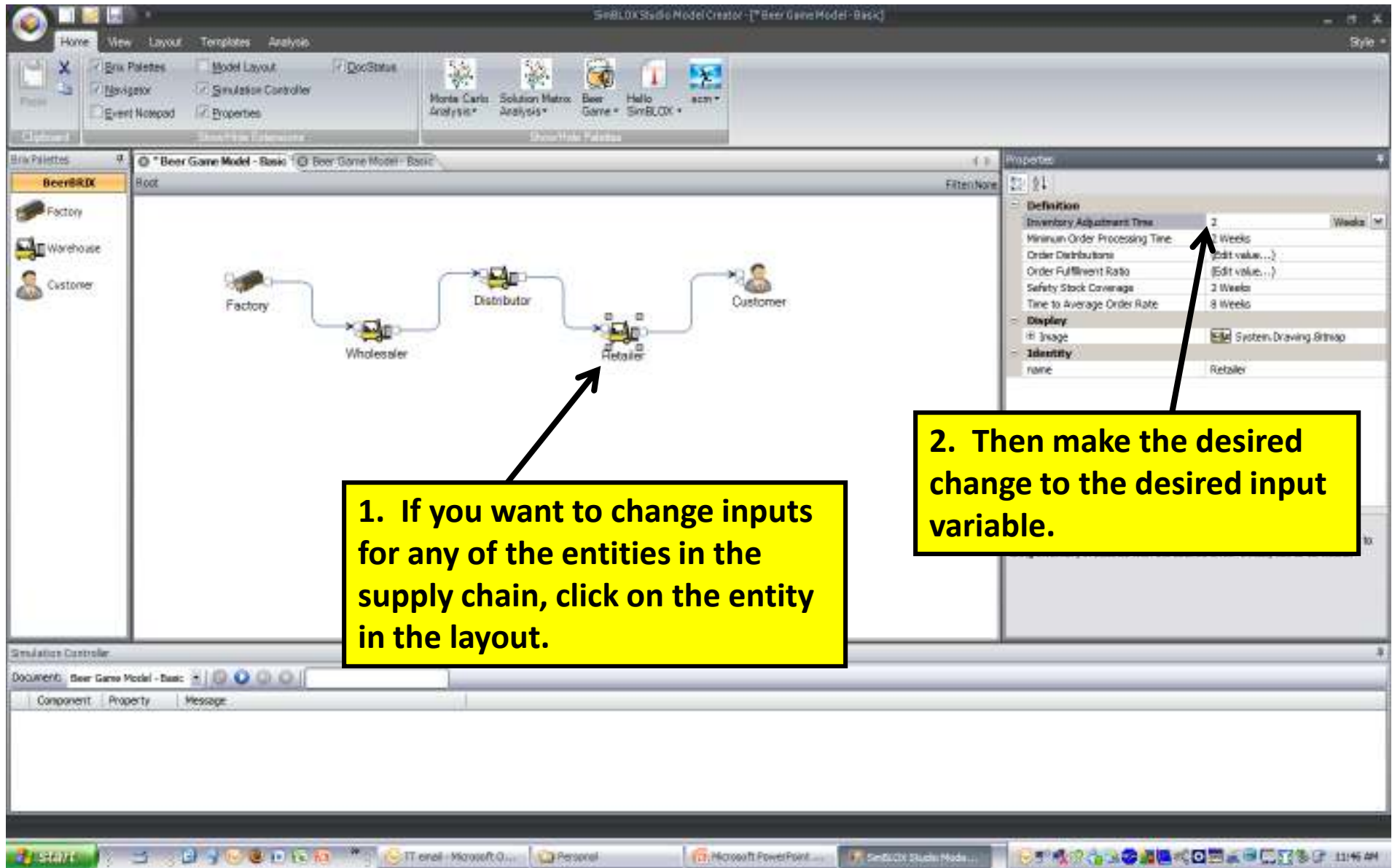
Run time	120 Weeks
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Simulation Controller

Document: Beer Game Model - Basic

Component Property Message

11:25 AM



SimBLOX Studio Model Creator - [Beer Game Model - Basic]

Home View

Pages: Add Page, Edit Page, Delete Page

Export

Themes

Page Settings: Relative, Absolute, Grid Lines

Layout: Chart, Table

Root

New Page

A. Beer Game Model - Basic/Customer/Orders
A. Beer Game Model - Basic/Wholesaler/Inventory
A. Beer Game Model - Basic/Retailer/Inventory
A. Beer Game Model - Basic/Factory/Inventory
A. Beer Game Model - Basic/Distributor/Inventory

500
450
400
350
300
250
200
150
100

0 10 20 30 40 50 60 70 80 90 100 110 120

A Units

Time

Document Info

Document	0
Author	B. Givites
Publisher	SimBLOX, LLC
Version #	1.0.0

Document Info

Simulation Controller

Document: Beer Game Model - Basic

Component	Property	Message
		Validating Beer Game Model - Basic...
		Creating simulation on world from Beer Game Model - Basic
		The analysis is completed in 15.934 seconds.
		Validating Beer Game Model - Basic...
		Creating simulation on world from Beer Game Model - Basic
		The analysis is completed in 15.936 seconds.

Re-run the simulation and see the new results.

11:34 AM

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