BGOS: Beer Game on Steroids Tutorial

Created by:

VIASIM SOLUTIONS
SUCCESS VIA SIMULATION

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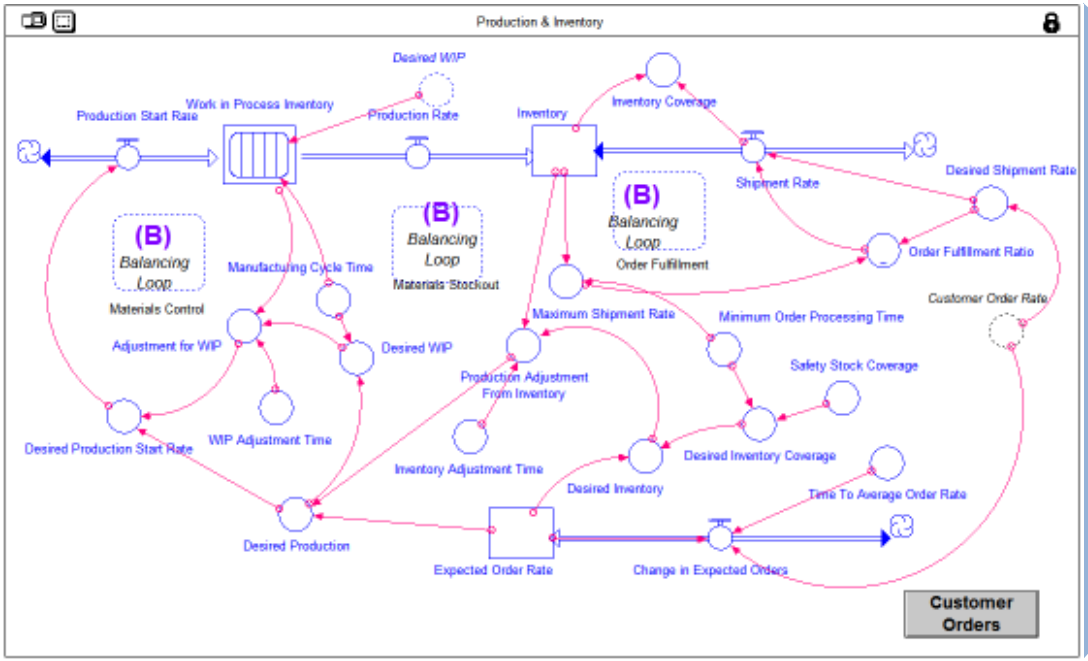
SimBLOX

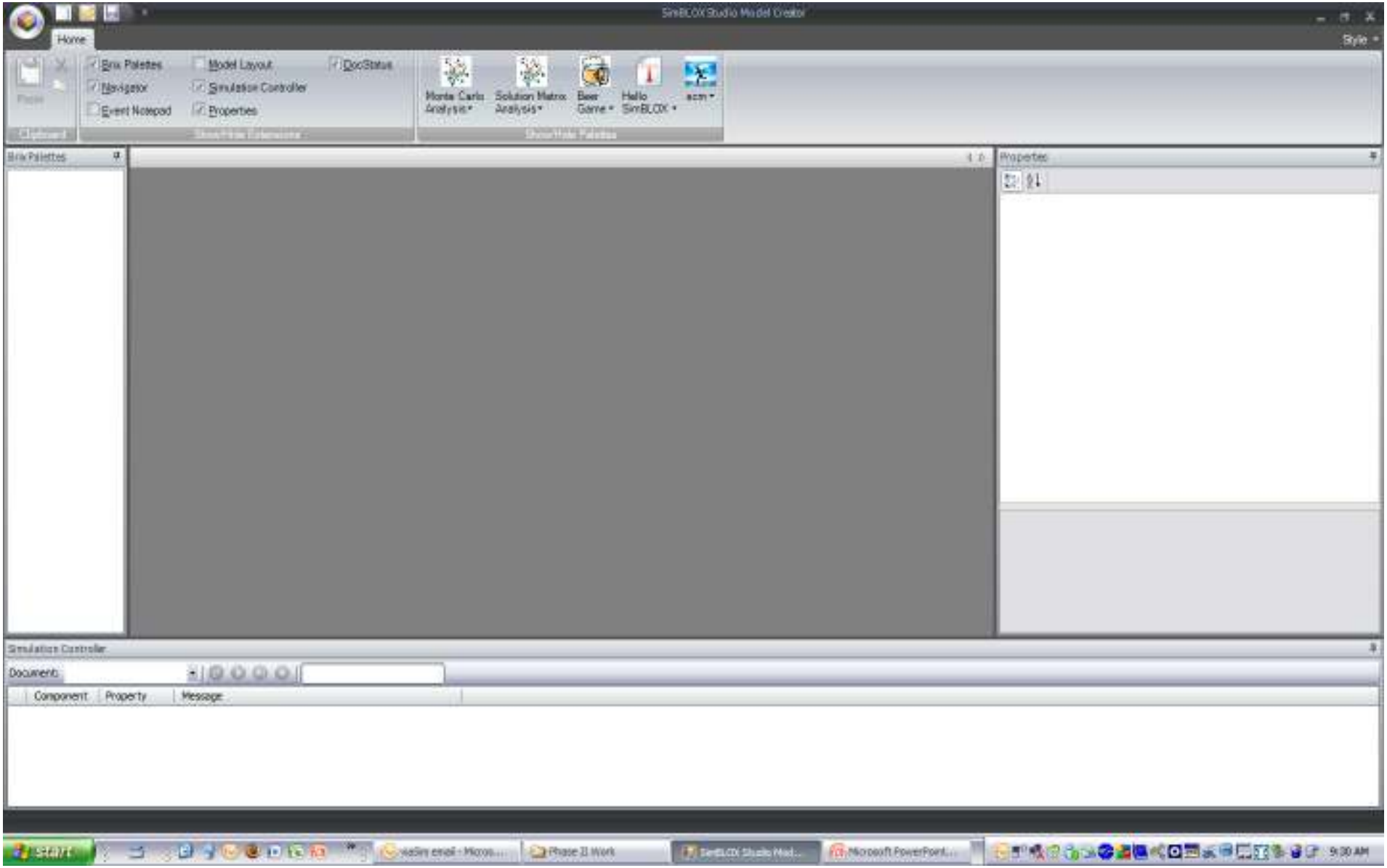
SimBLOX Methodology

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.

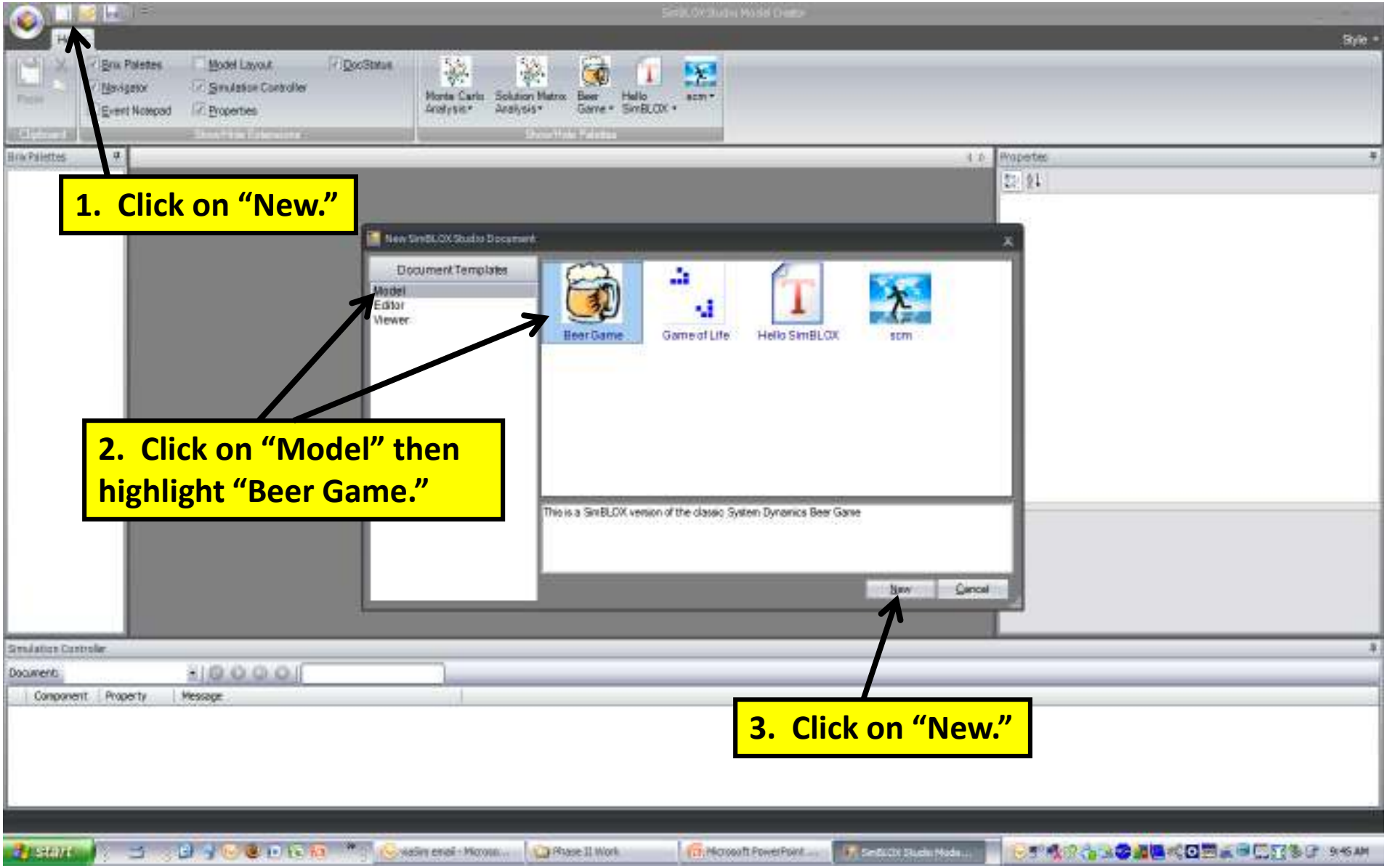
Simulation "agent" model

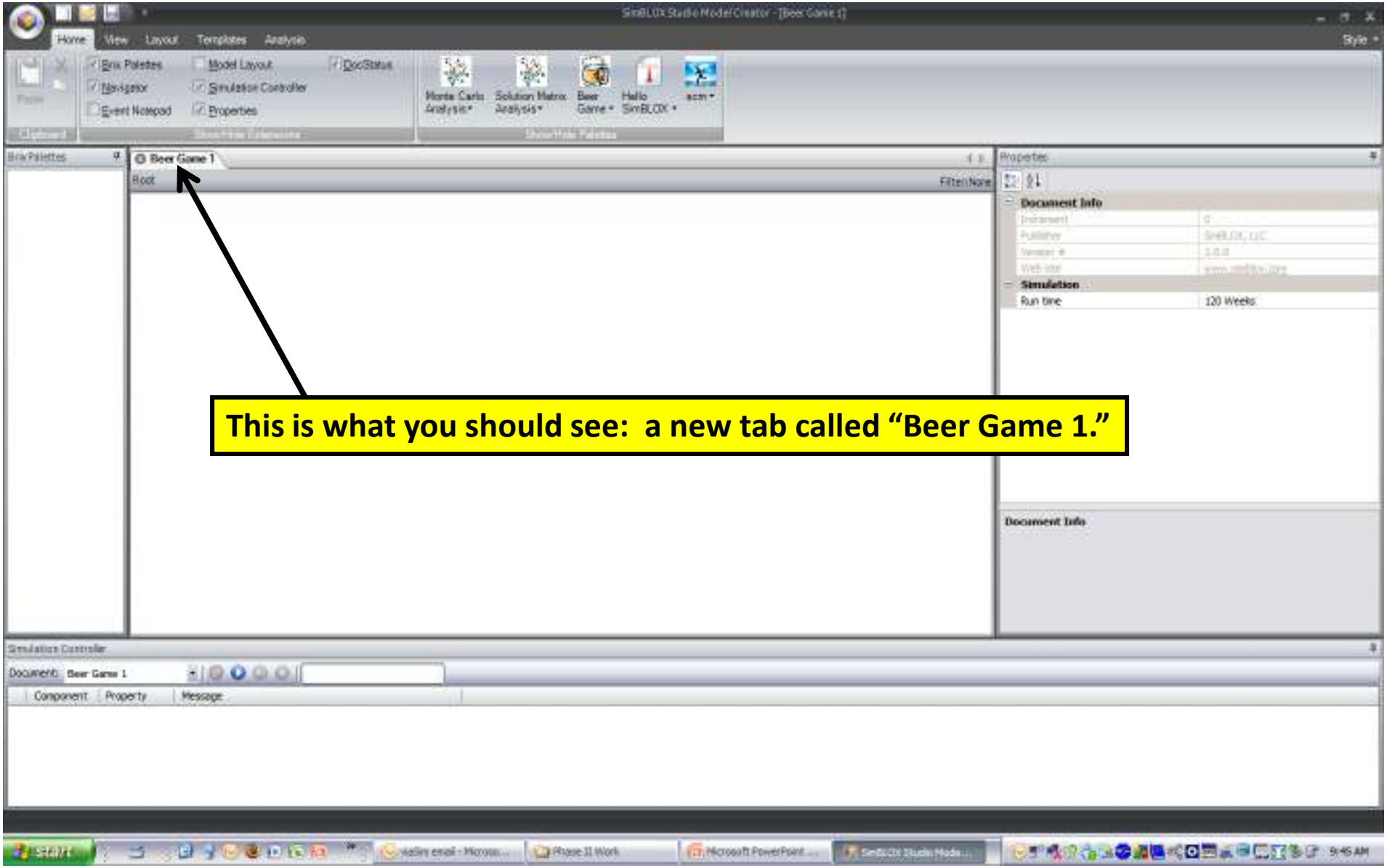


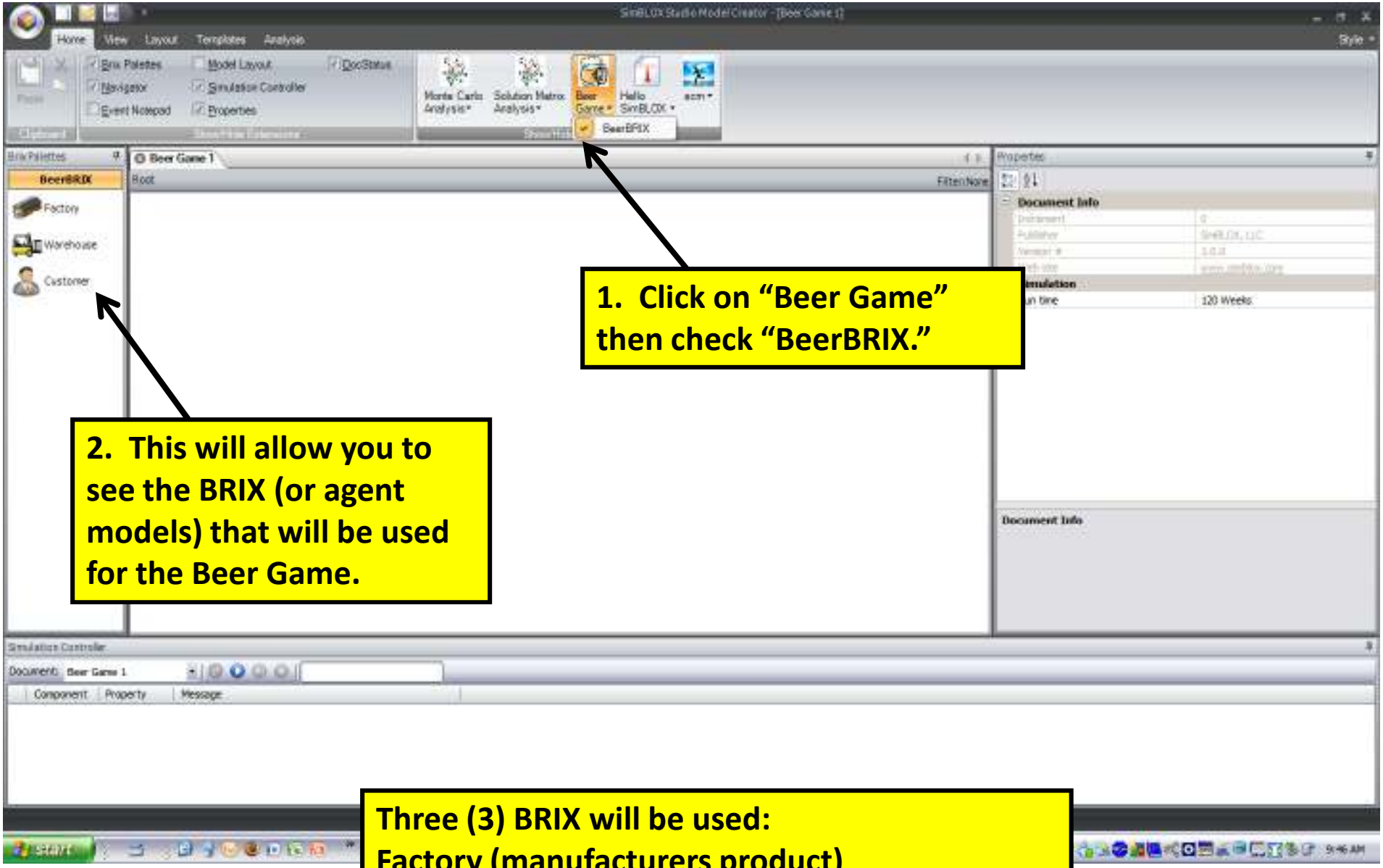
SimBRIX "icon"

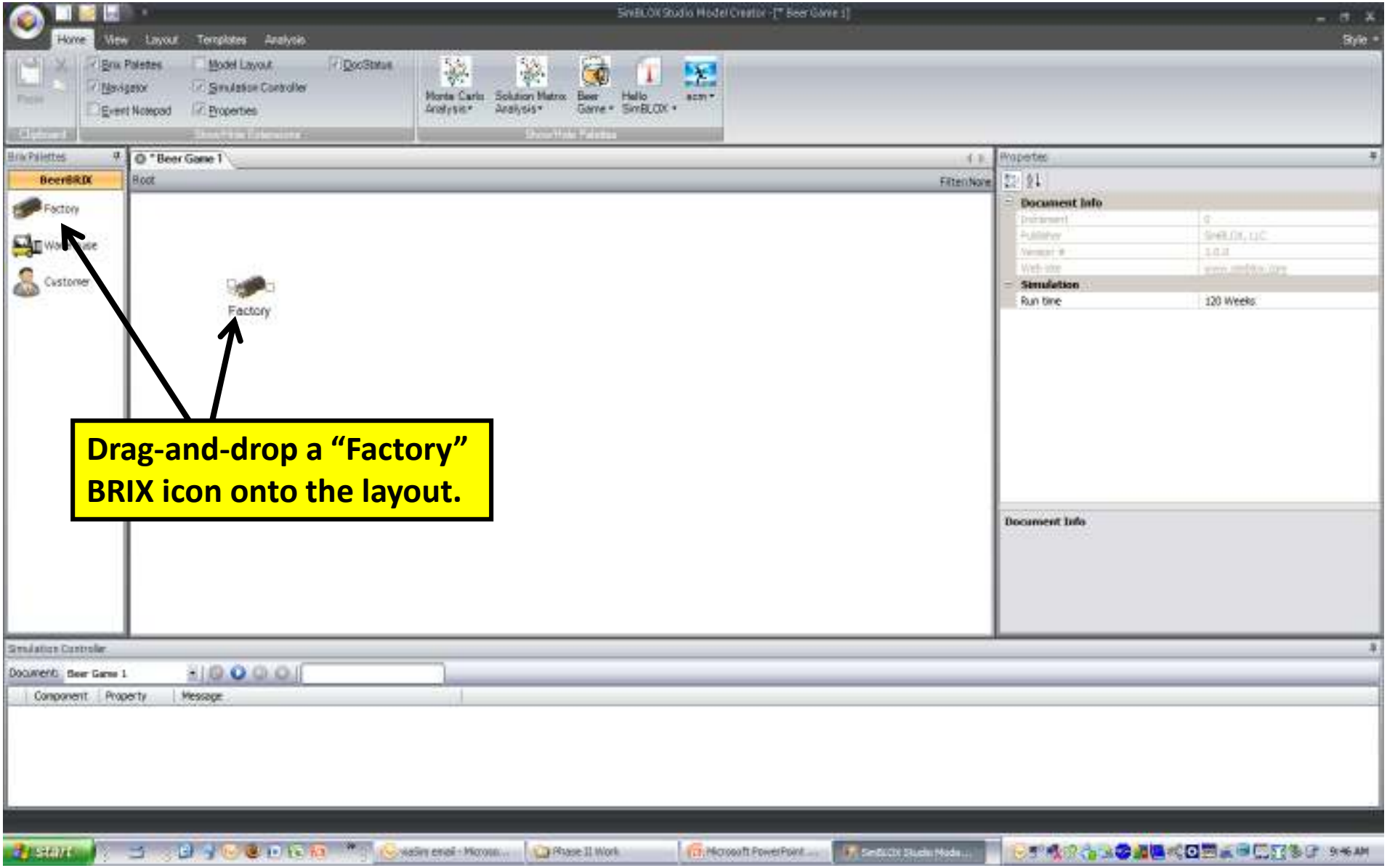


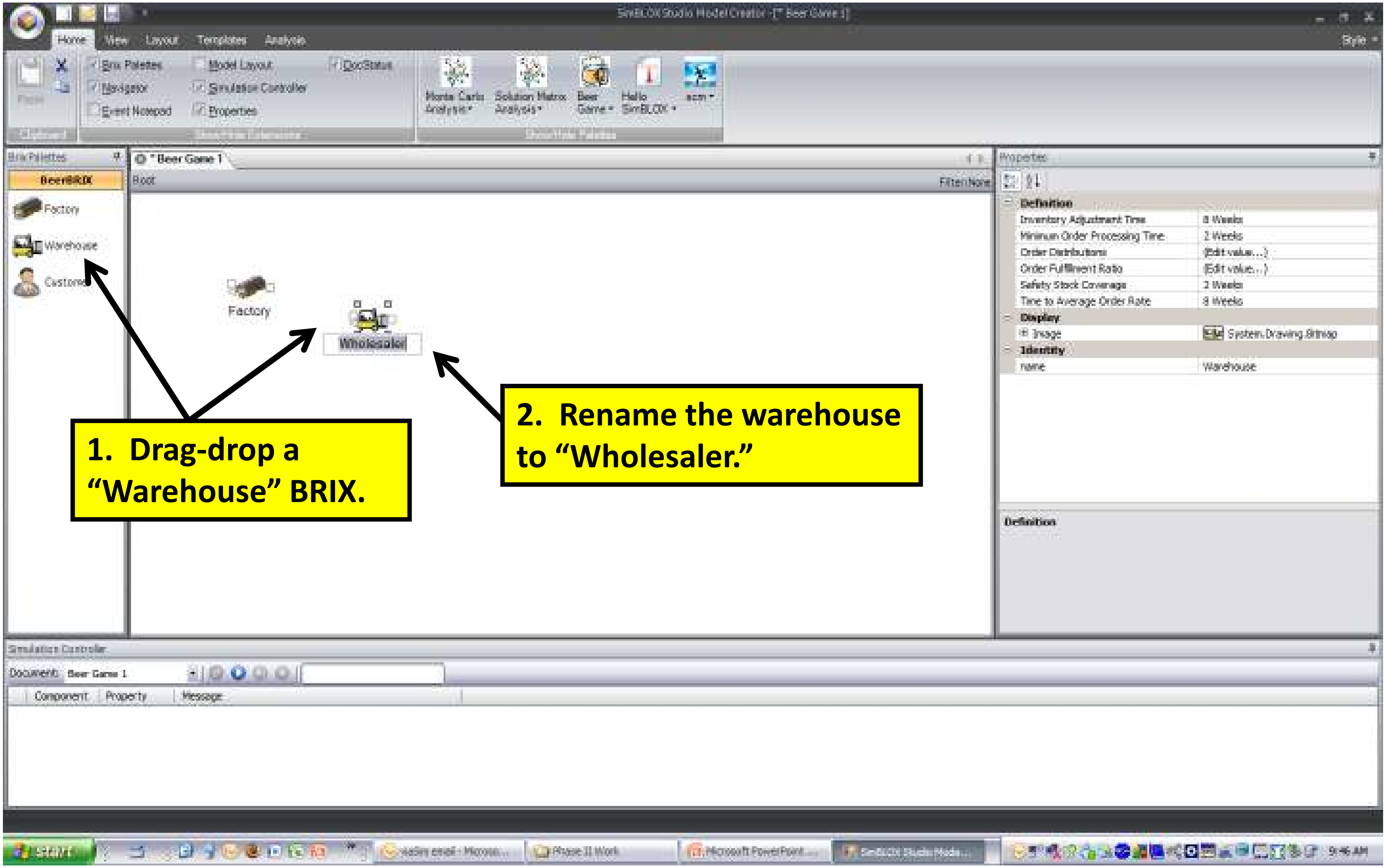
This is what you should see when you open BGOS.

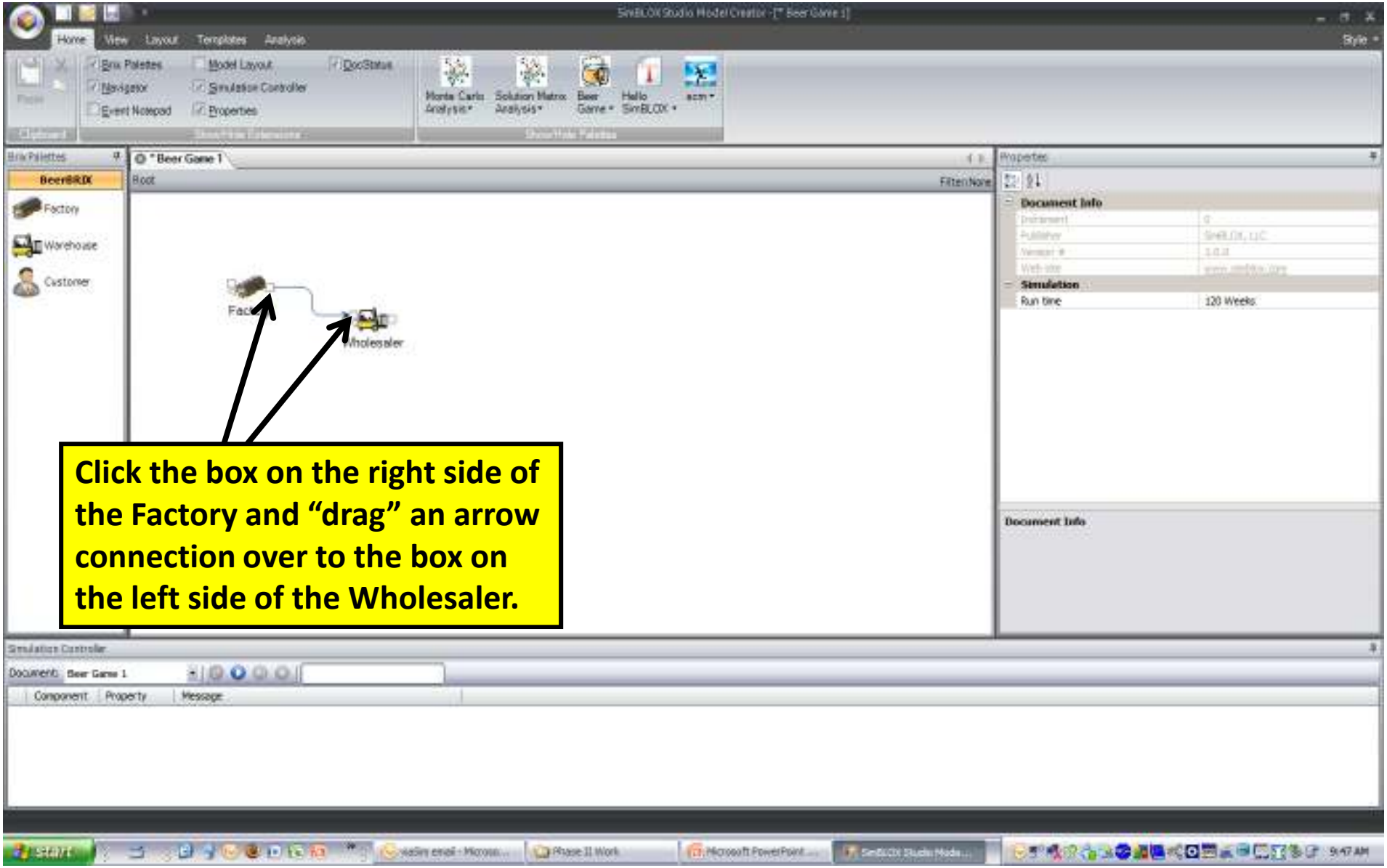

1. Click on “New.”
2. Click on “Model” then highlight “Beer Game.”
3. Click on “New.”
Document Templates
Model
Editor
Viewer
Beer Game
Game of Life
Hello SimBLOX
scm
This is a SimBLOX version of the classic System Dynamics Beer Game
New
Cancel

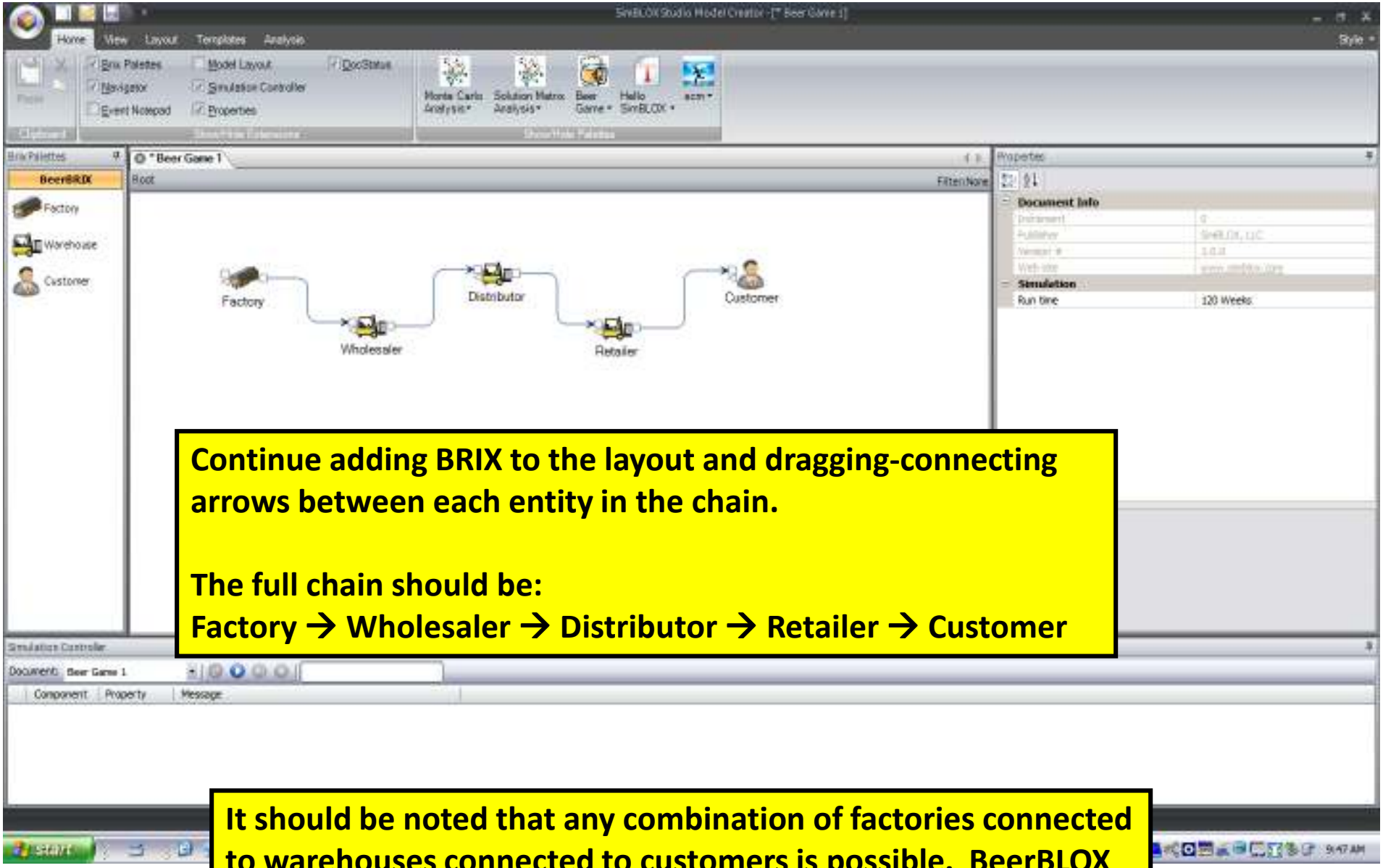

Home
View
Layout
Templates
Analysis
Beer Game 1
Root
Properties
Document Info
Simulation
Run time
120 Weeks
Simulation Controller
Component
Property
Message
This is what you should see: a new tab called “Beer Game 1.”


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)


Home
View
Layout
Templates
Analysis
Style
Brix Palettes
Model Layout
DocStatus
Navigator
Simulation Controller
Event Notepad
Properties
Monte Carlo Analysis
Solution Matrix Analysis
Beer Game
Hello SimBLOX
acm
BeerBRIX
Factory
Customer
Beer Game 1
Root
Filter:None
Factory
Properties
Document Info
Simulation
Run time
120 Weeks
Drag-and-drop a “Factory” BRIX icon onto the layout.
Simulation Controller
Document:
Beer Game 1
Component
Property
Message


1. Drag-drop a "Warehouse" BRIX.
2. Rename the warehouse to "Wholesaler."
Factory
Wholesaler

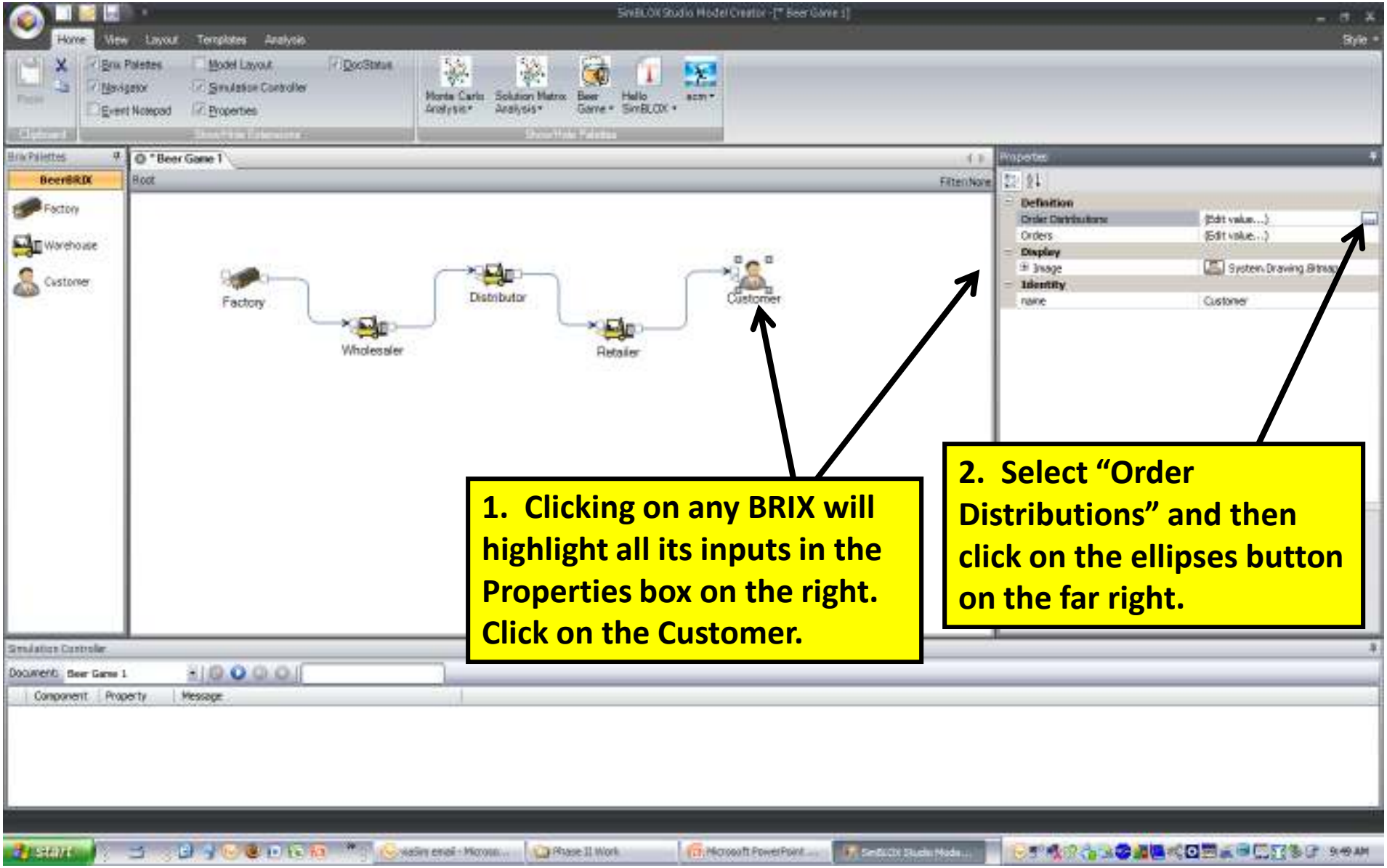

Home
View
Layout
Templates
Analysis
Style
Beer Game 1
Root
Filter:None
BeerBRIX
Factory
Warehouse
Customer
Wholesaler
Properties
Document Info
Simulation
Run time
120 Weeks
Simulation Controller
Component
Property
Message
Click the box on the right side of the Factory and “drag” an arrow connection over to the box on the left side of the Wholesaler.

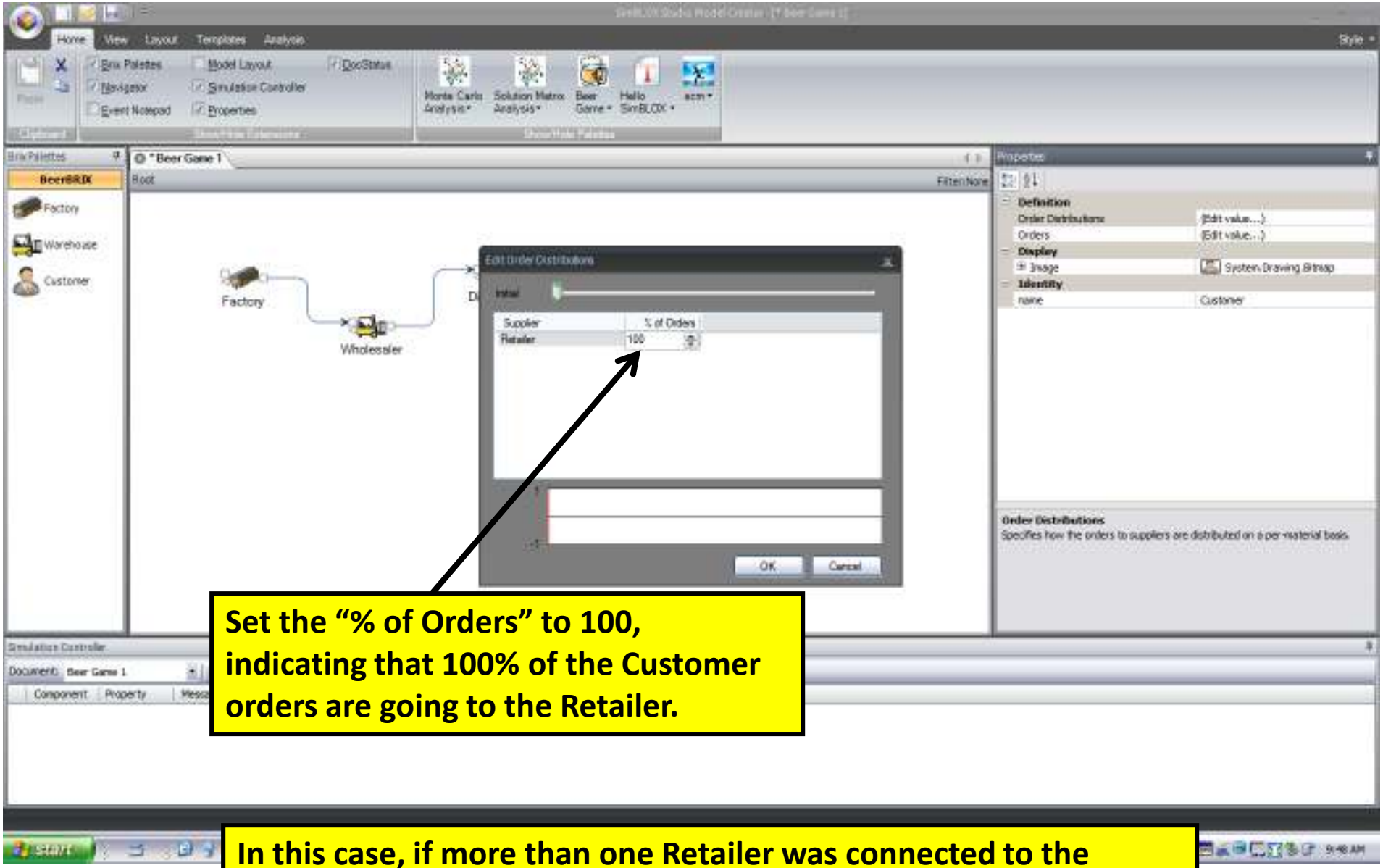


Continue adding BRIX to the layout and dragging-connecting arrows between each entity in the chain.

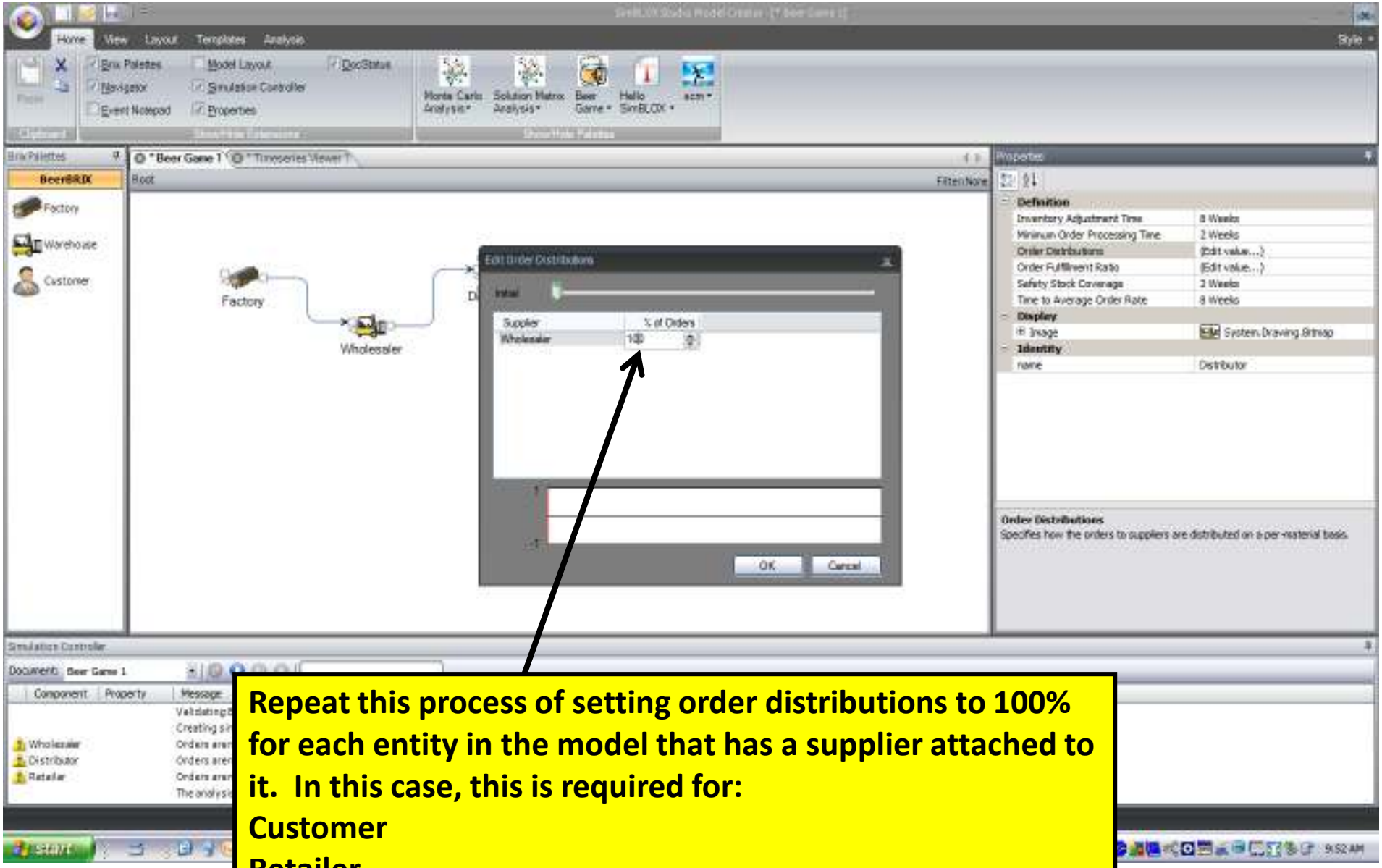
The full chain should be:
Factory → Wholesaler → Distributor → Retailer → Customer

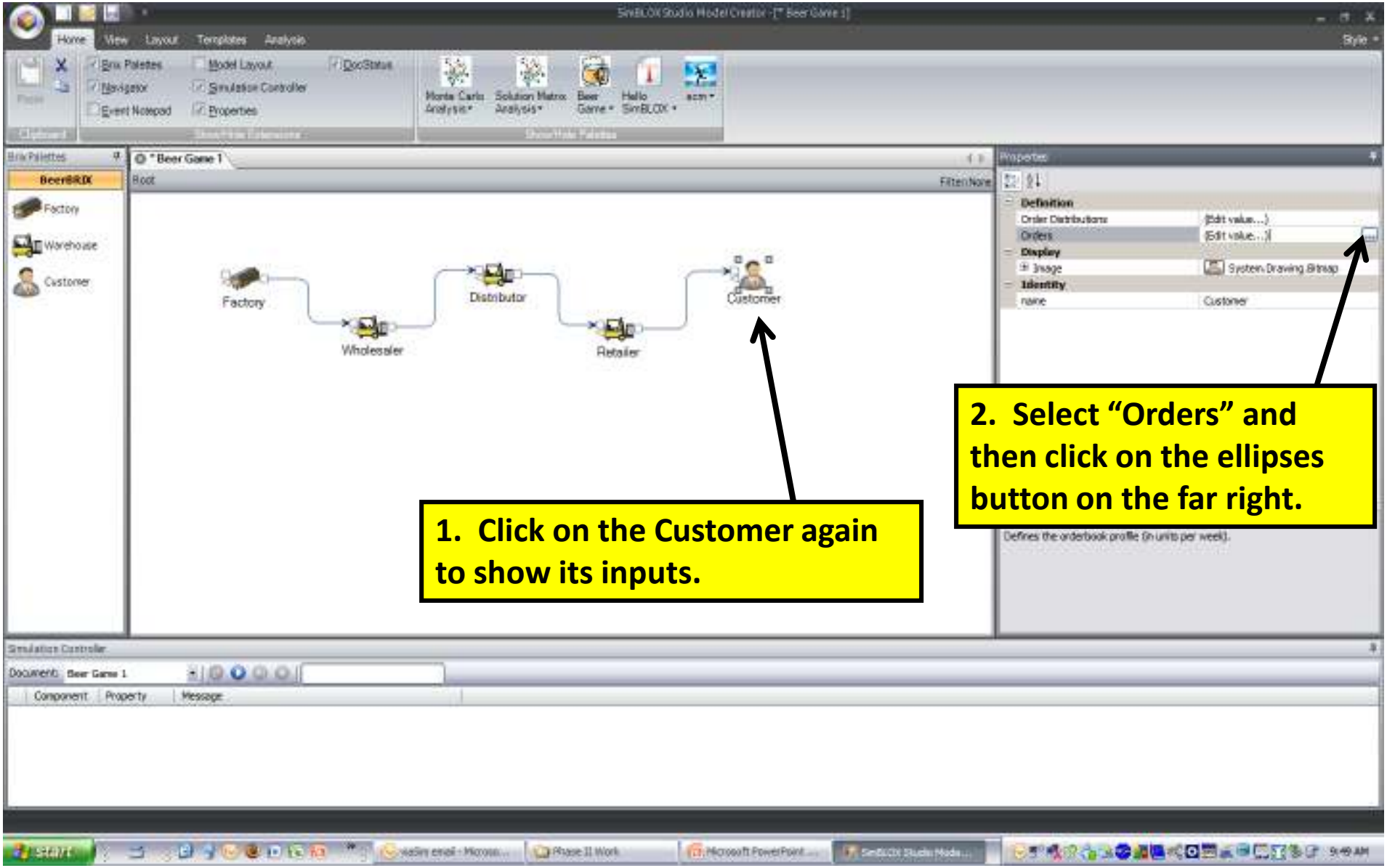
It should be noted that any combination of factories connected to warehouses connected to customers is possible. BeerBLOX automatically aggregates orders/shipments accordingly if, for example, there are multiple customers connected to a single warehouse.

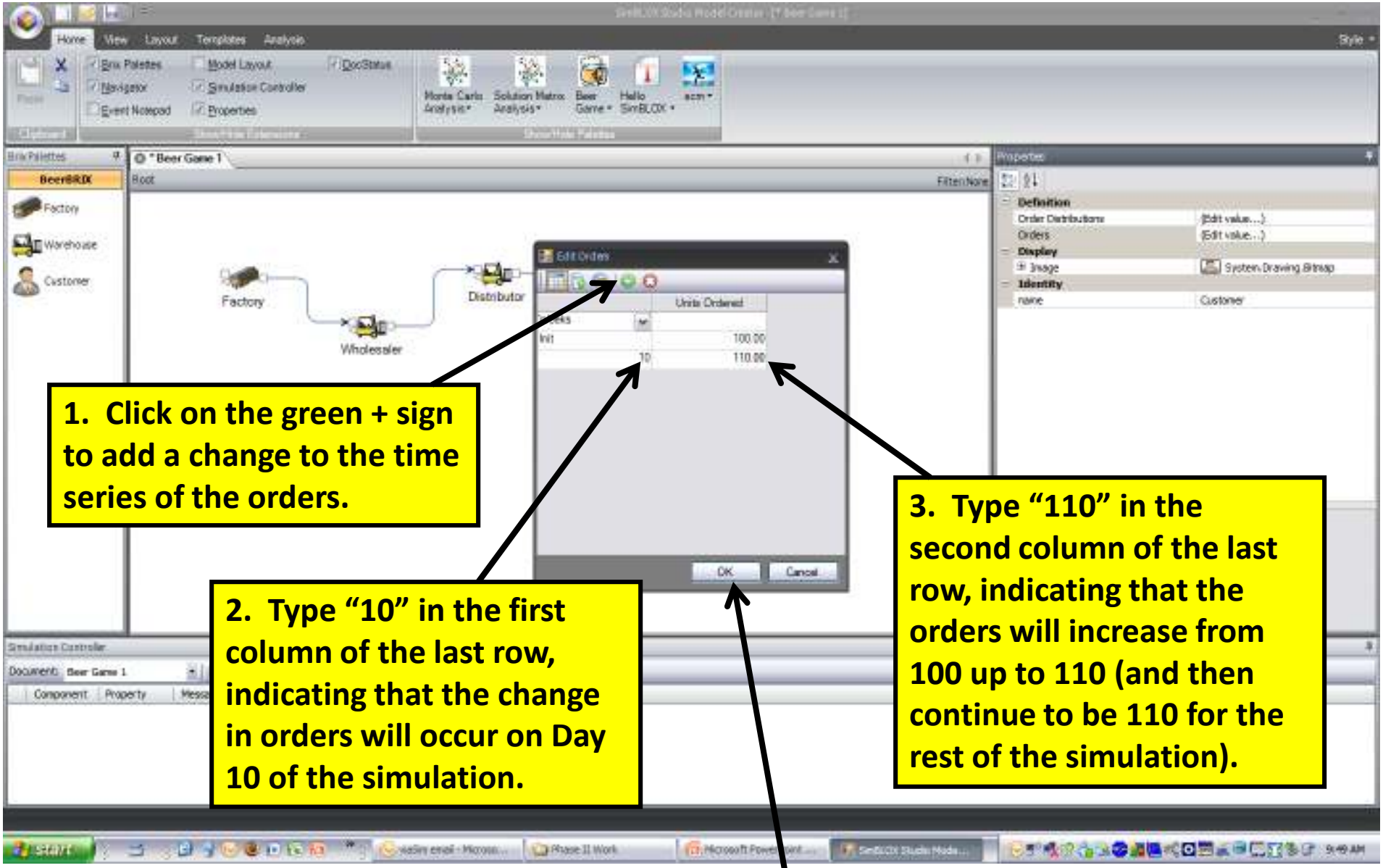

Factory
Wholesaler
Distributor
Retailer
Customer
1. Clicking on any BRIX will highlight all its inputs in the Properties box on the right. Click on the Customer.
2. Select "Order Distributions" and then click on the ellipses button on the far right.

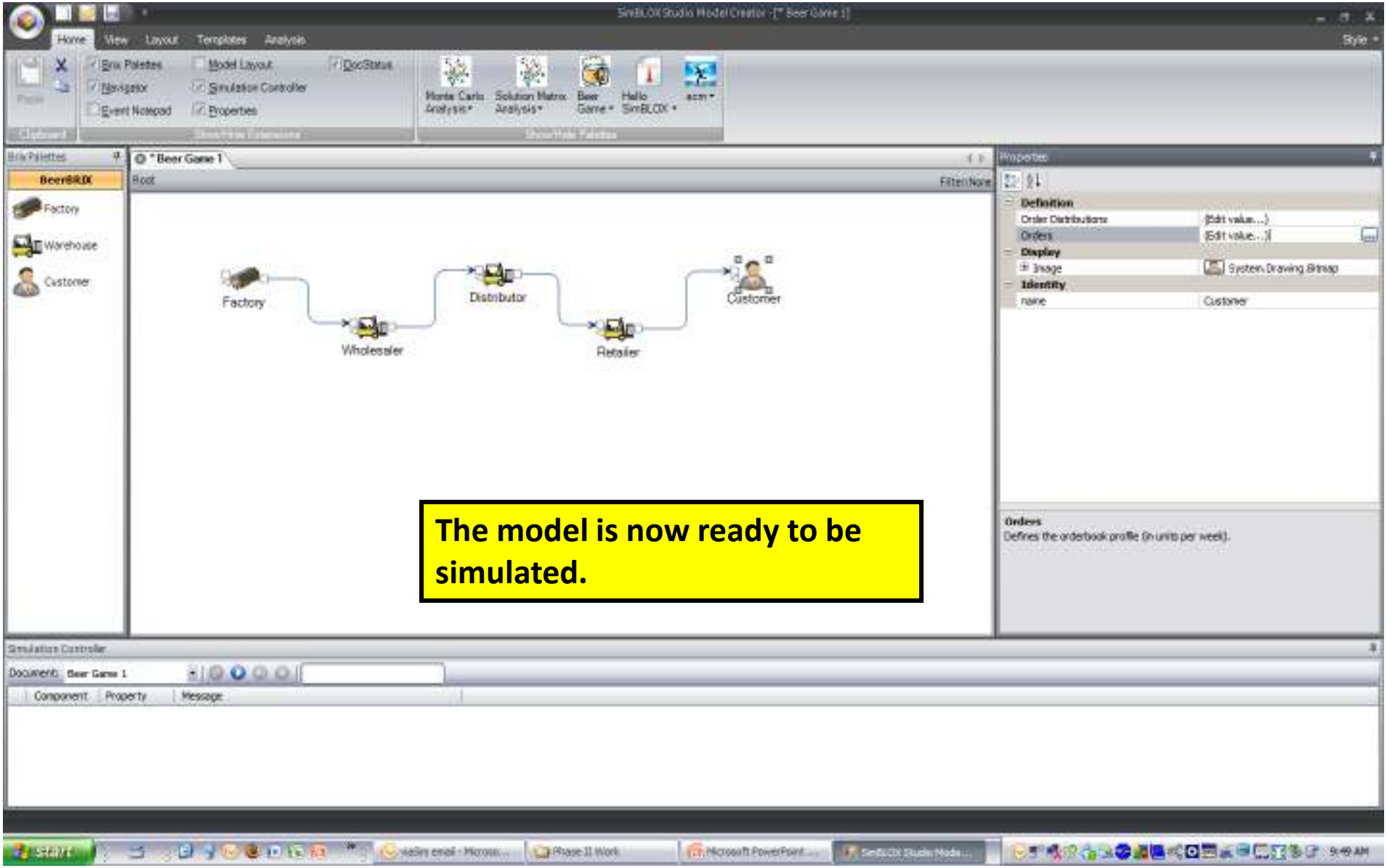


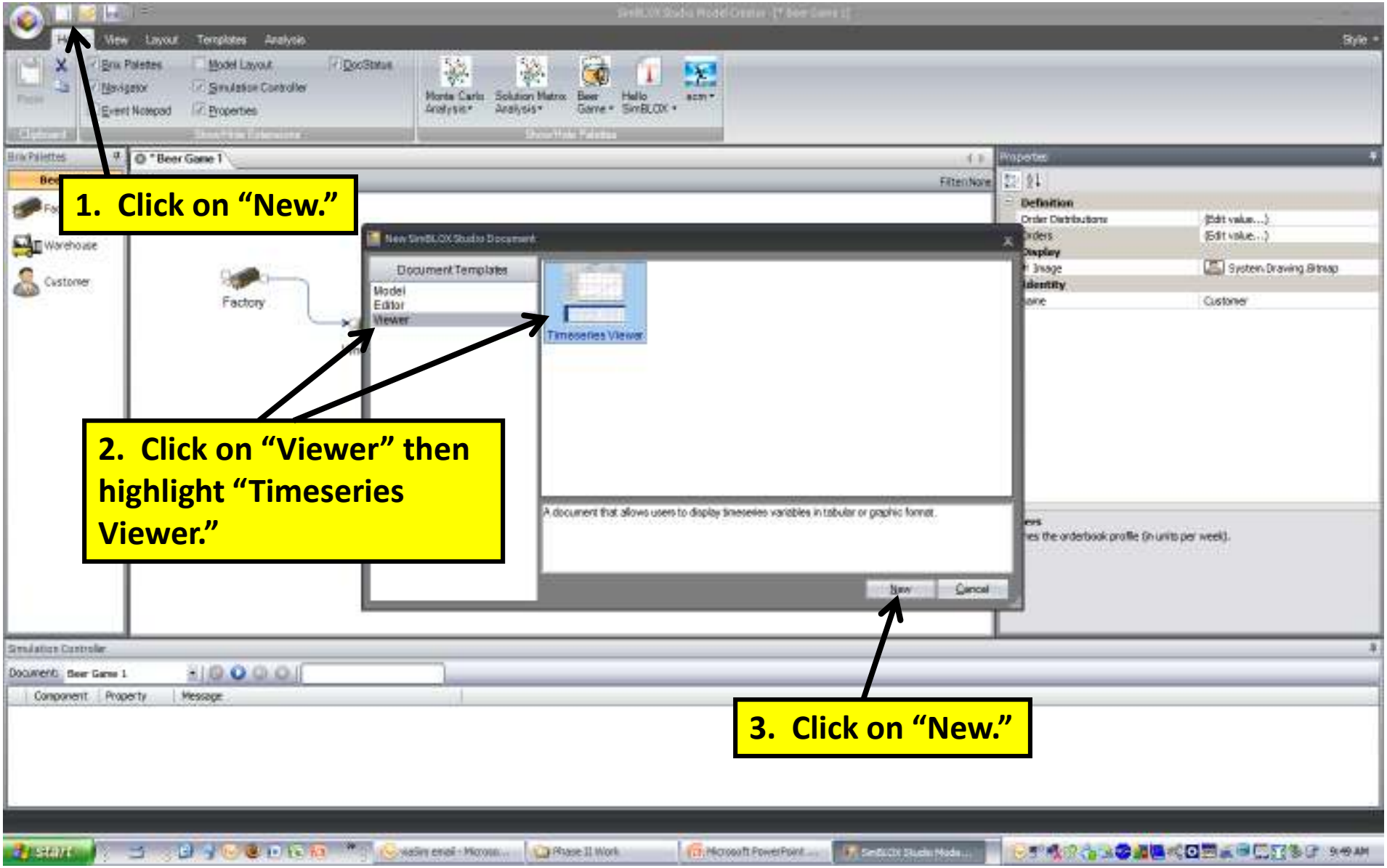
In this case, if more than one Retailer was connected to the Customer, the Customer could distribute orders in any way and even change this distribution over time so that there is a shift in orders as the simulation progresses.

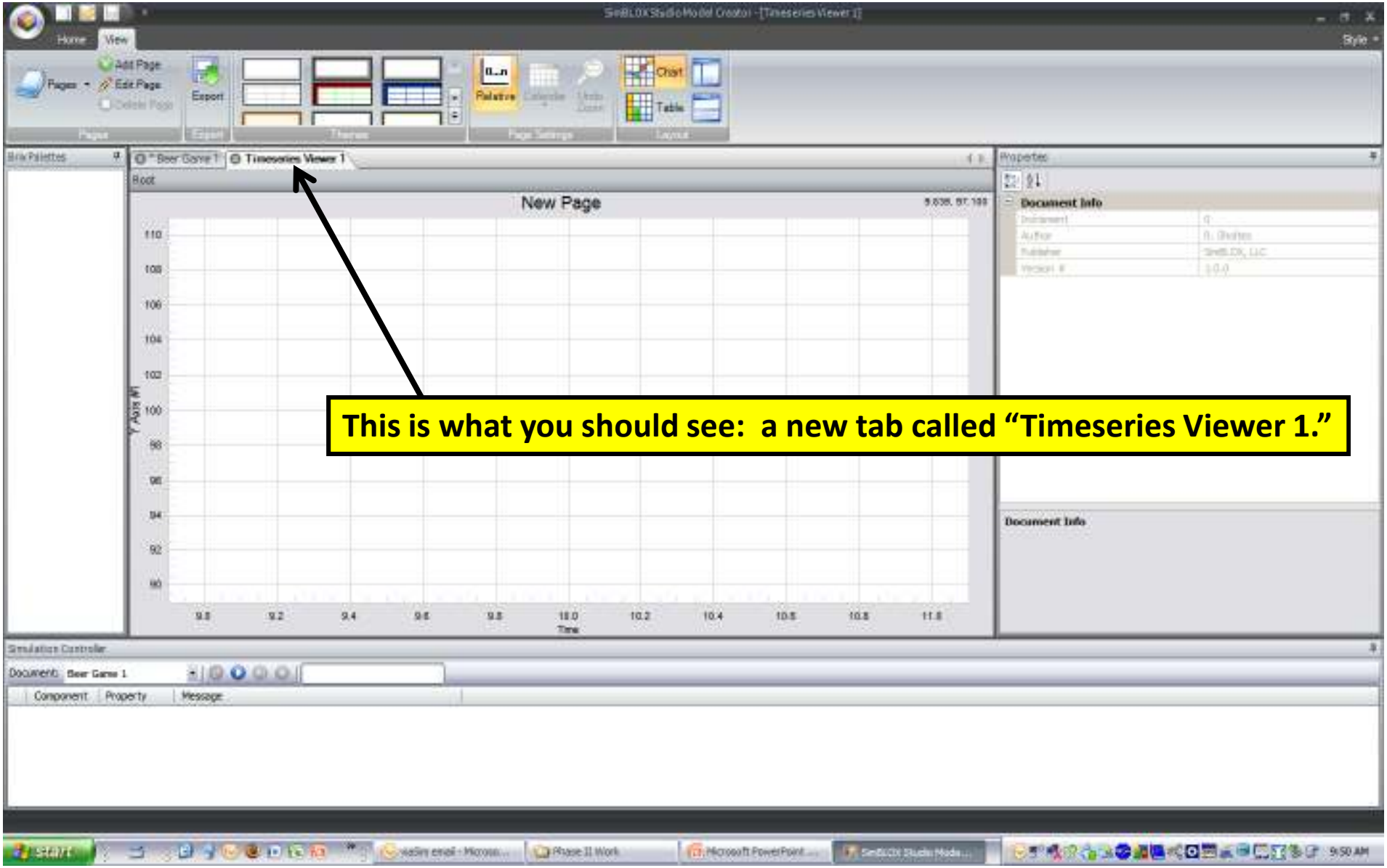

Repeat this process of setting order distributions to 100% for each entity in the model that has a supplier attached to it. In this case, this is required for:
Customer
Retailer
Distributor
Wholesaler

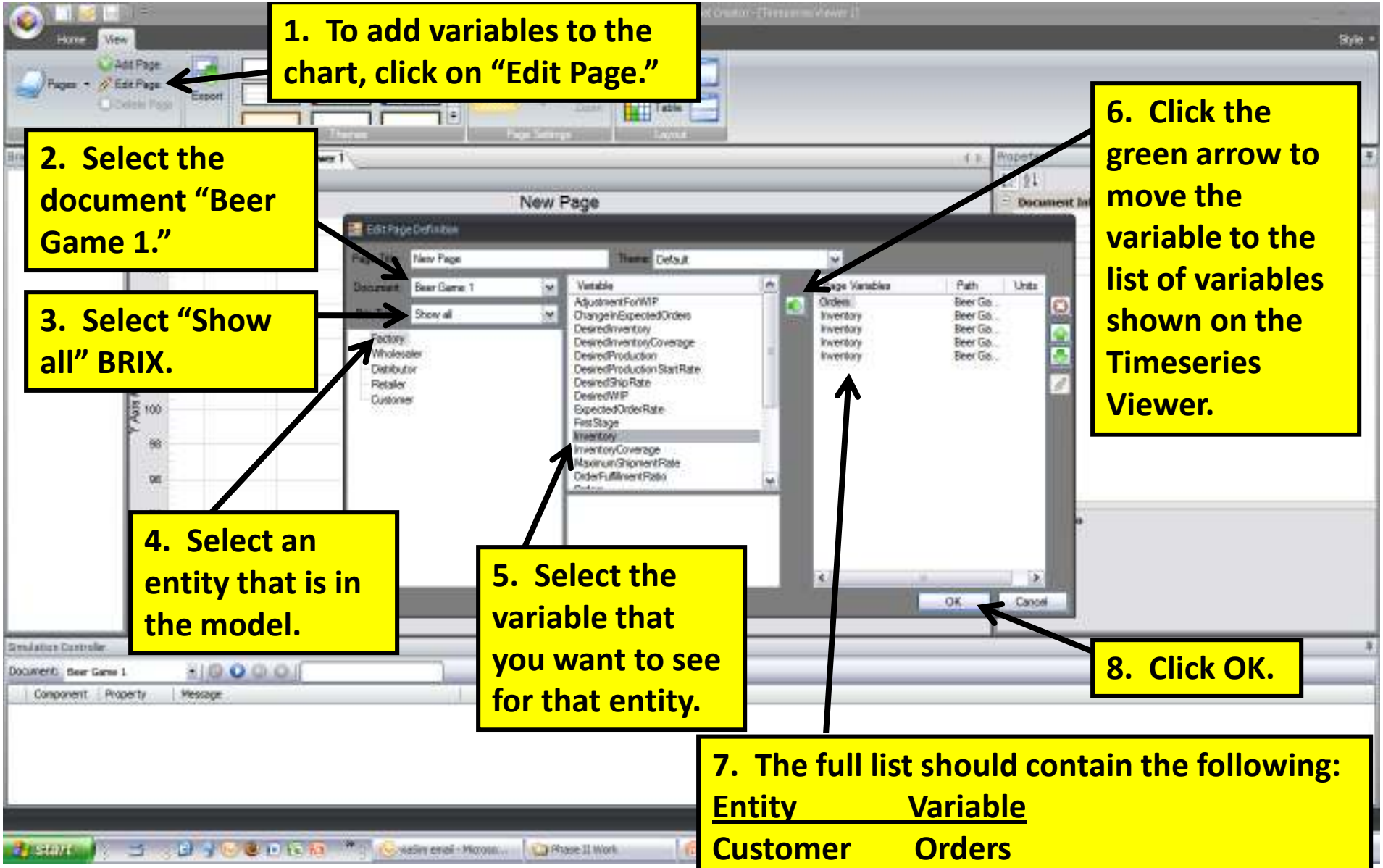

Factory
Wholesaler
Distributor
Retailer
Customer
1. Click on the Customer again to show its inputs.
2. Select “Orders” and then click on the ellipses button on the far right.

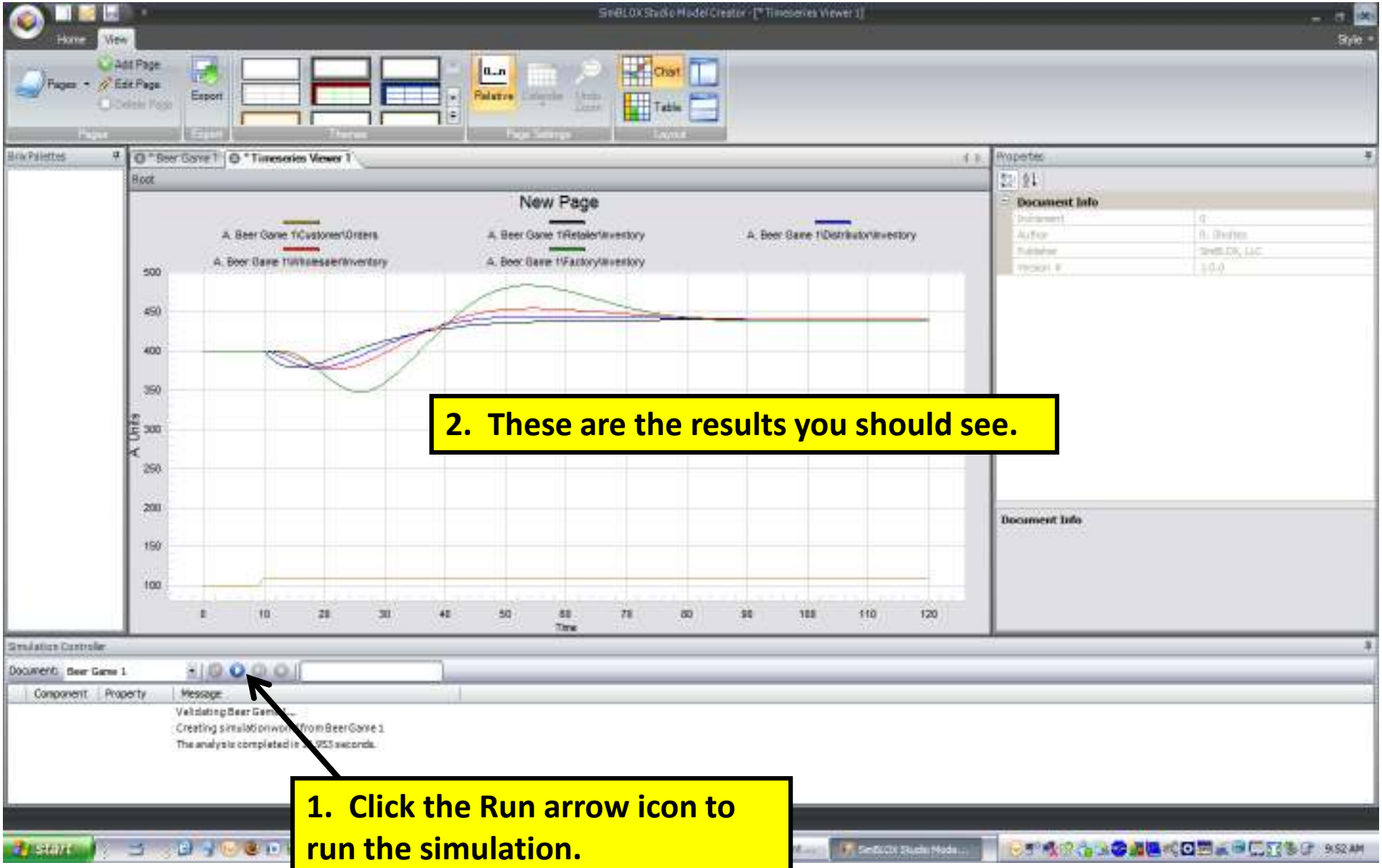

1. Click on the green + sign to add a change to the time series of the orders.
2. Type “10” in the first column of the last row, indicating that the change in orders will occur on Day 10 of the simulation.
3. Type “110” in the second column of the last row, indicating that the orders will increase from 100 up to 110 (and then continue to be 110 for the rest of the simulation).
4. Click OK to accept the change.

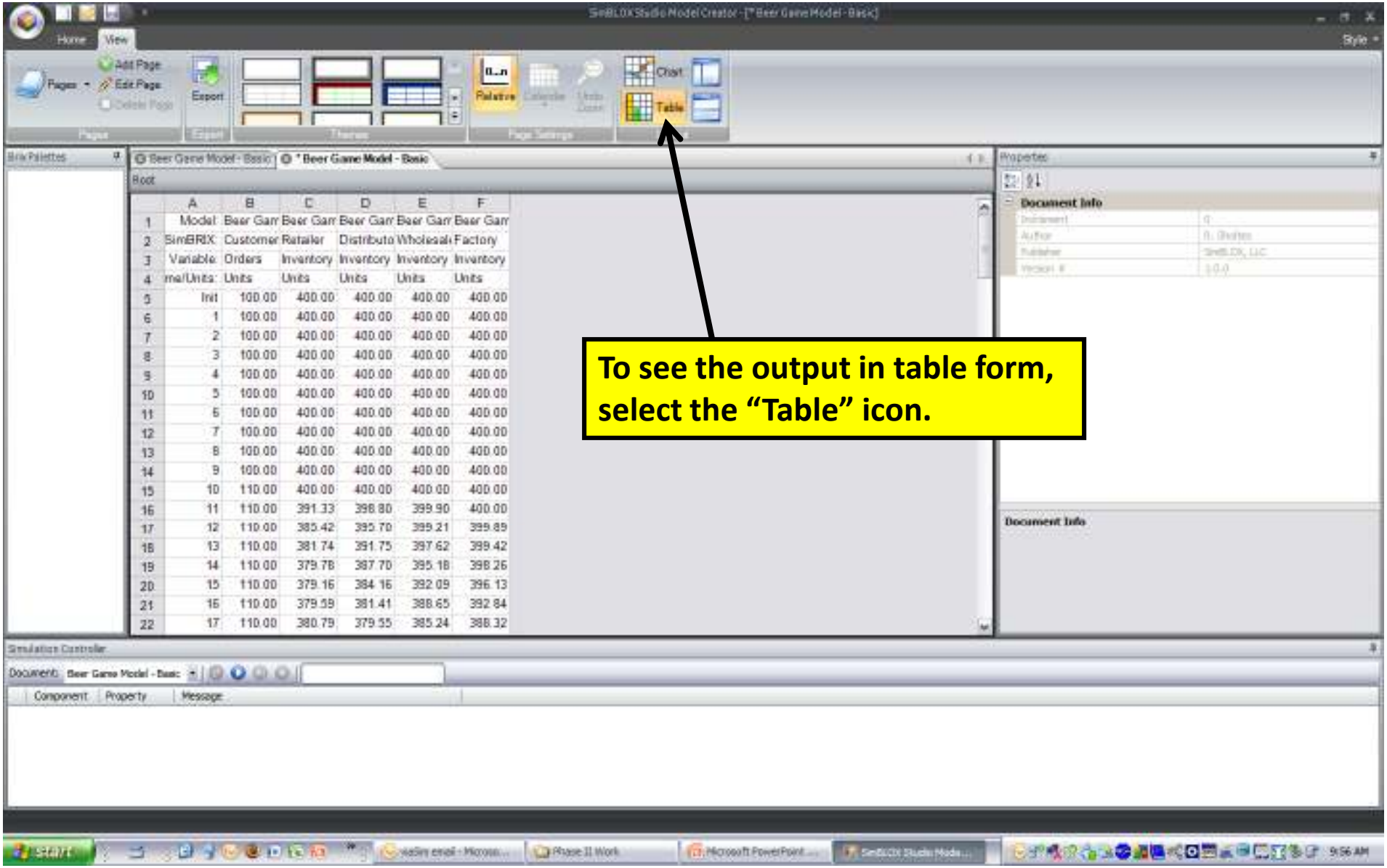

Home
View
Layout
Templates
Analysis
Style
Beer Game 1
Root
Factory
Warehouse
Customer
Factory
Wholesaler
Distributor
Retailer
Customer
Properties
Definition
Order Distributions
Orders
Display
Image
Identity
name
Customer
Orders
Defines the orderbook profile (in units per week).
The model is now ready to be simulated.
Simulation Controller
Document:
Component
Property
Message

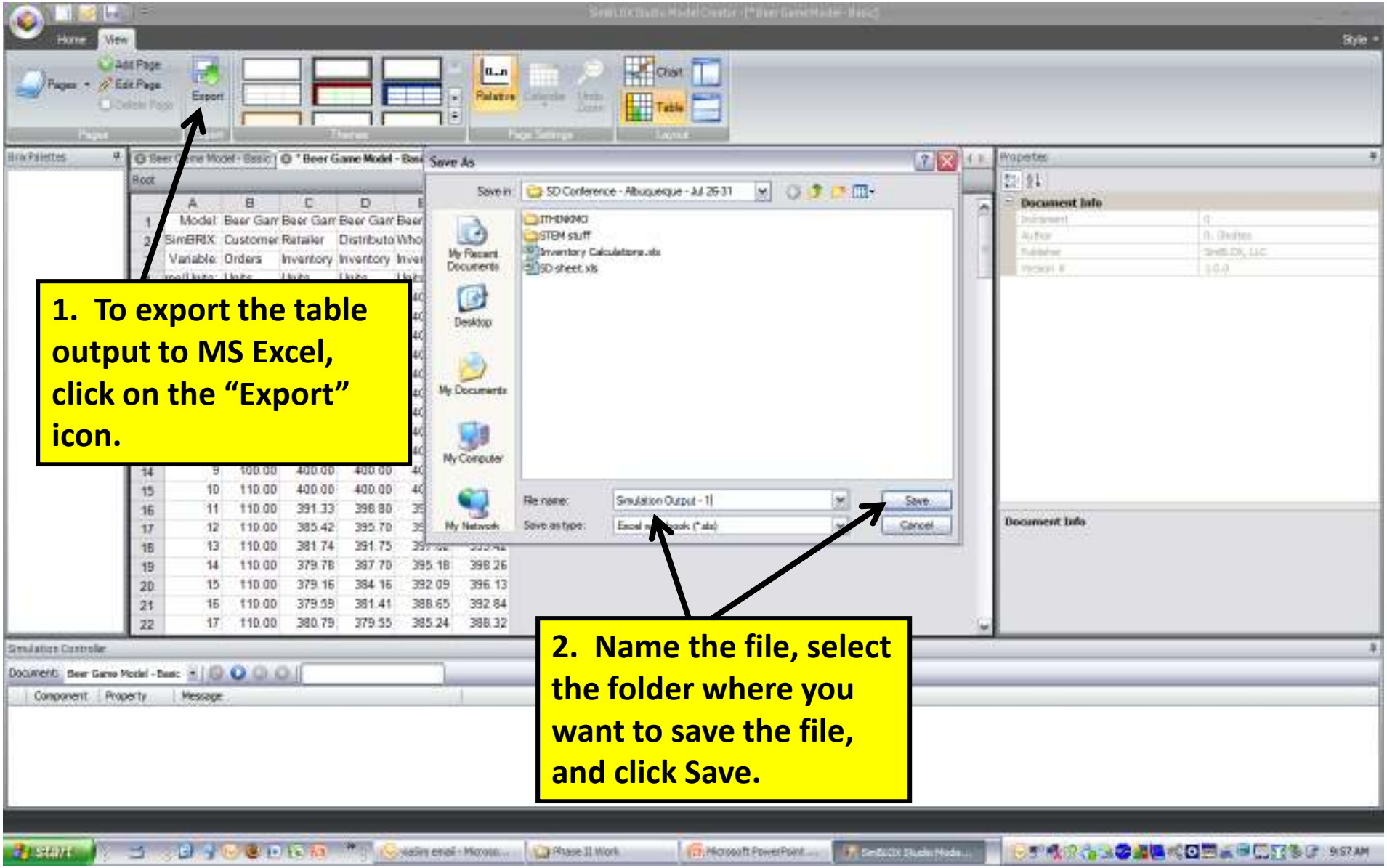

1. Click on "New."
2. Click on "Viewer" then highlight "Timeseries Viewer."
3. Click on "New."
Document Templates
Model
Editor
Viewer
Timeseries Viewer
A document that allows users to display timeseries variables in tabular or graphic format.
New
Cancel
Factory
Warehouse
Customer
Beer Game 1

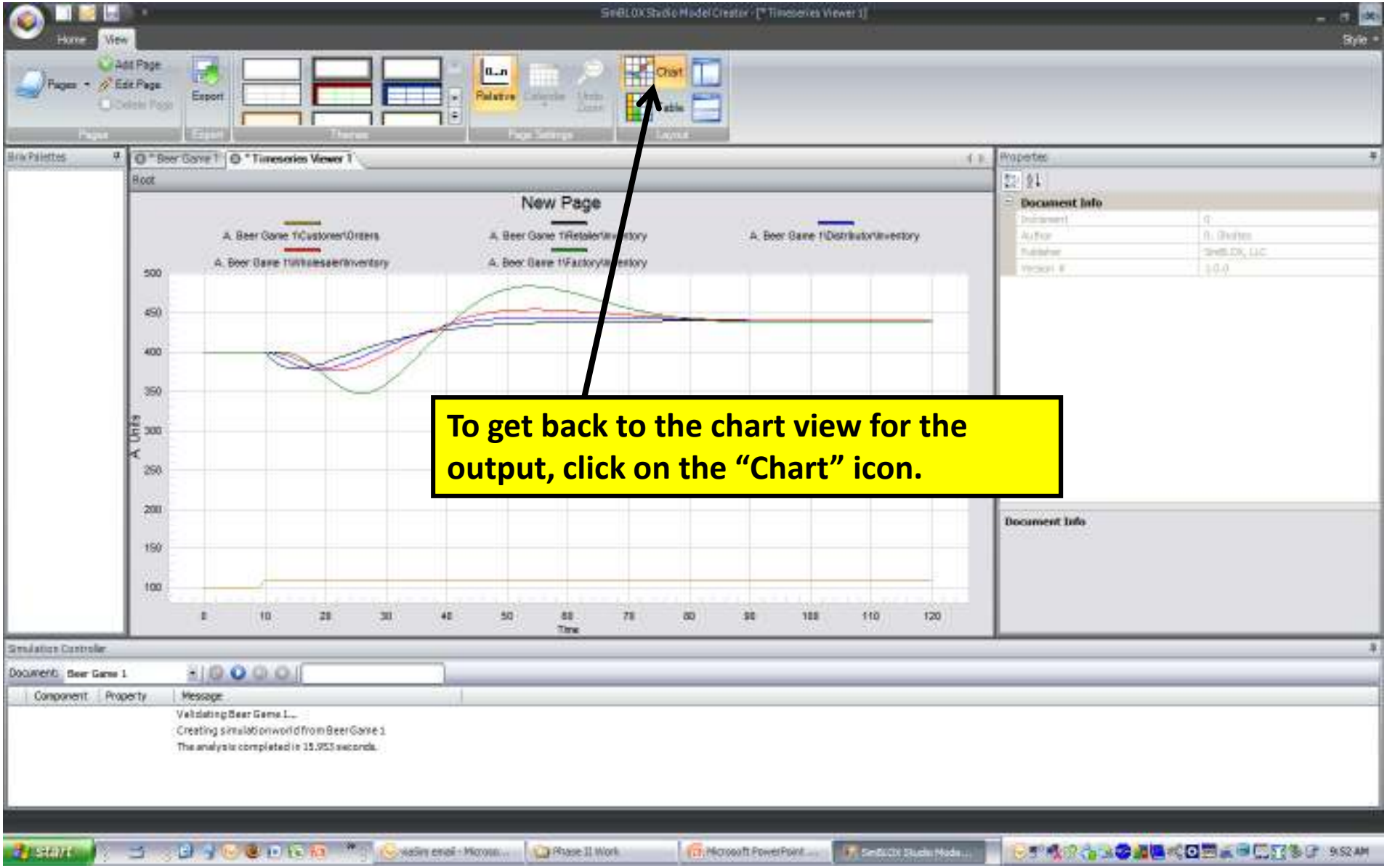

Timeseries Viewer 1
New Page
This is what you should see: a new tab called “Timeseries Viewer 1.”

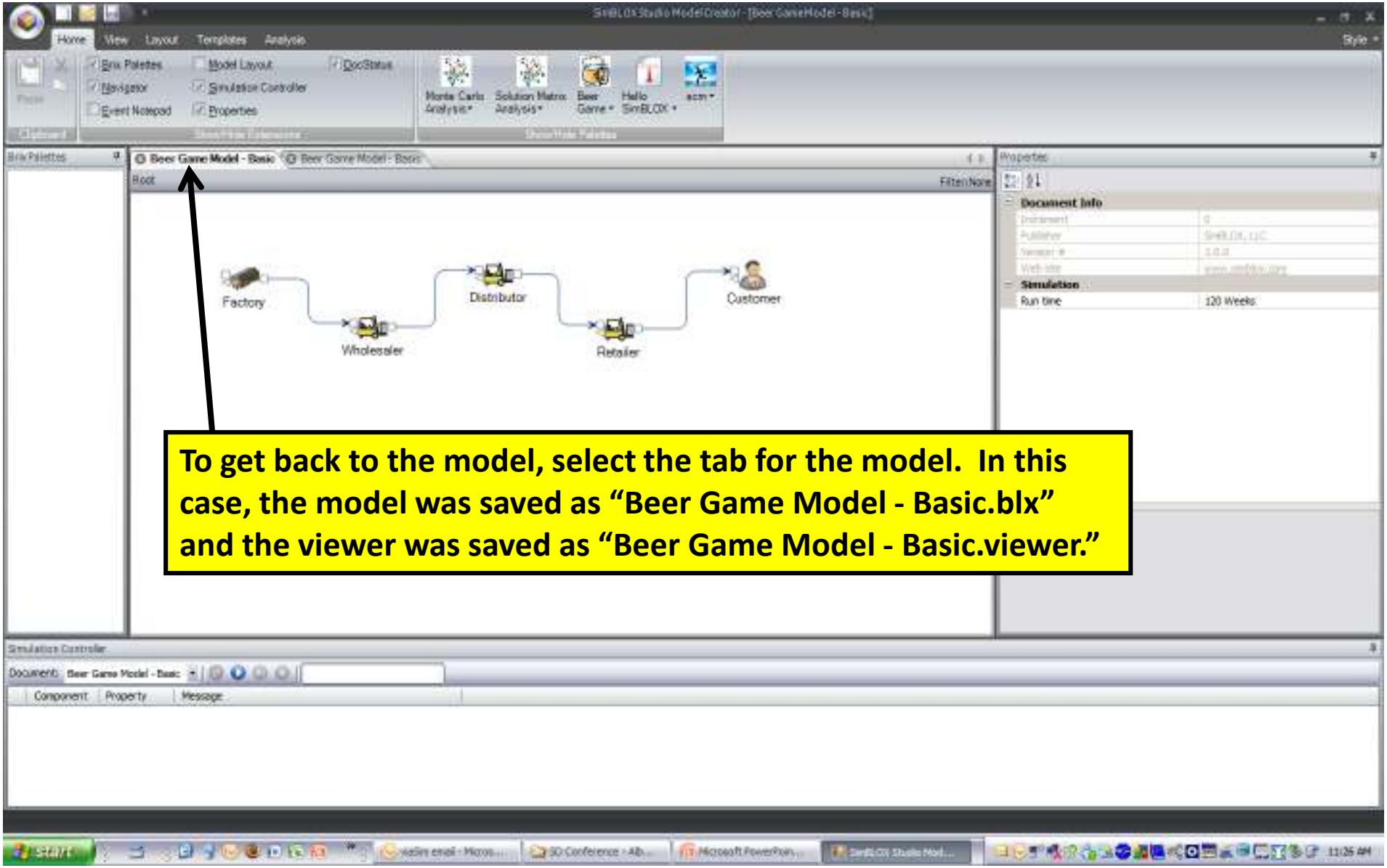

1. To add variables to the chart, click on "Edit Page."
2. Select the document "Beer Game 1."
3. Select "Show all" BRIX.
4. Select an entity that is in the model.
5. Select the variable that you want to see for that entity.
6. Click the green arrow to move the variable to the list of variables shown on the Timeseries Viewer.
7. The full list should contain the following:
Entity Variable
Customer Orders
Retailer Inventory
Distributor Inventory
Wholesaler Inventory
Factory Inventory
8. Click OK.
New Page
Edit Page Definition
Beer Game 1
Show all
Factory
Wholesaler
Distributor
Retailer
Customer
Inventory
OK
Cancel

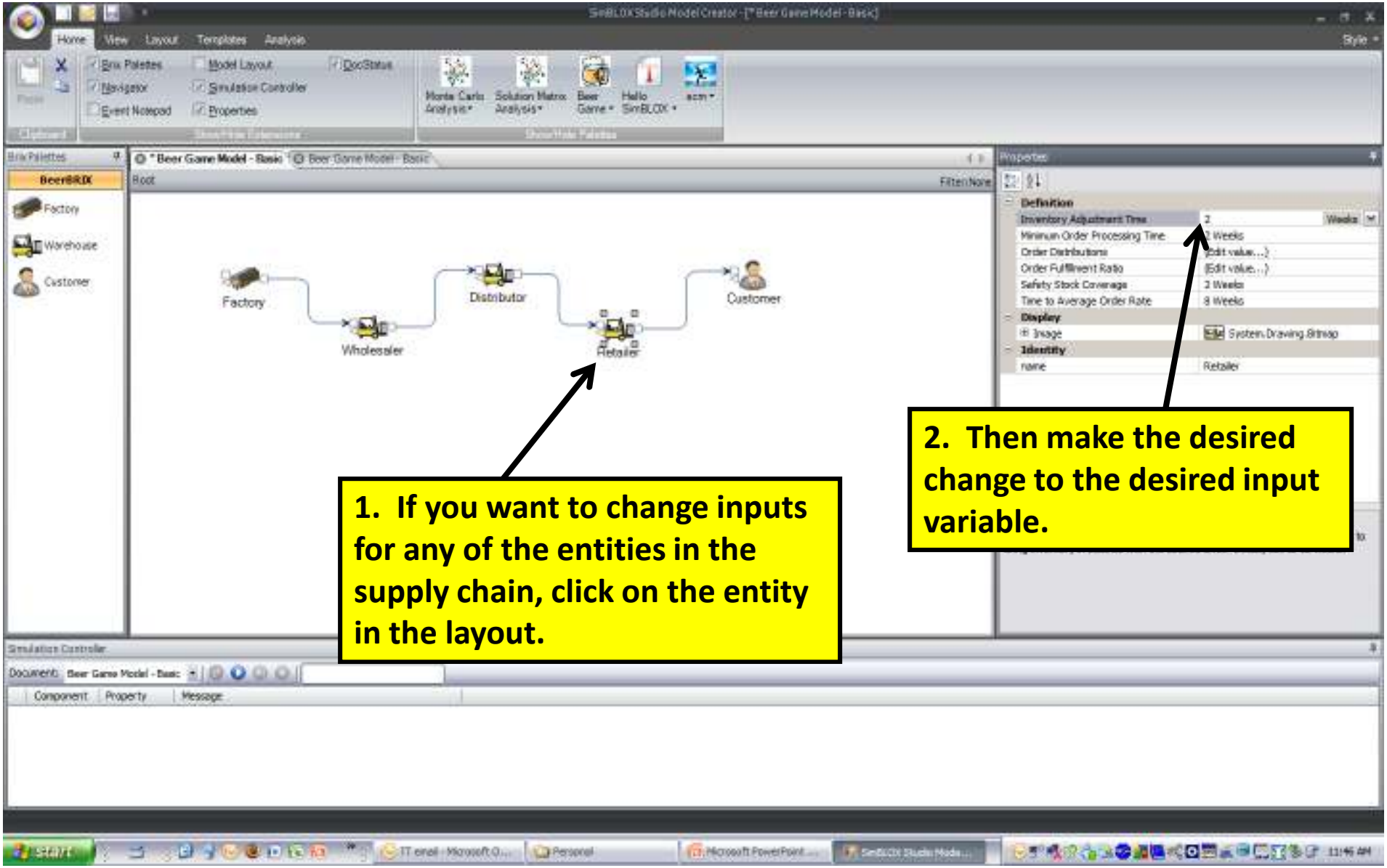

New Page
A. Beer Game 1\Customer\Orders
A. Beer Game 1\Retailer\Inventory
A. Beer Game 1\Distributor\Inventory
A. Beer Game 1\Wholesaler\Inventory
A. Beer Game 1\Factory\Inventory
A. Units
Time
2. These are the results you should see.
1. Click the Run arrow icon to run the simulation.

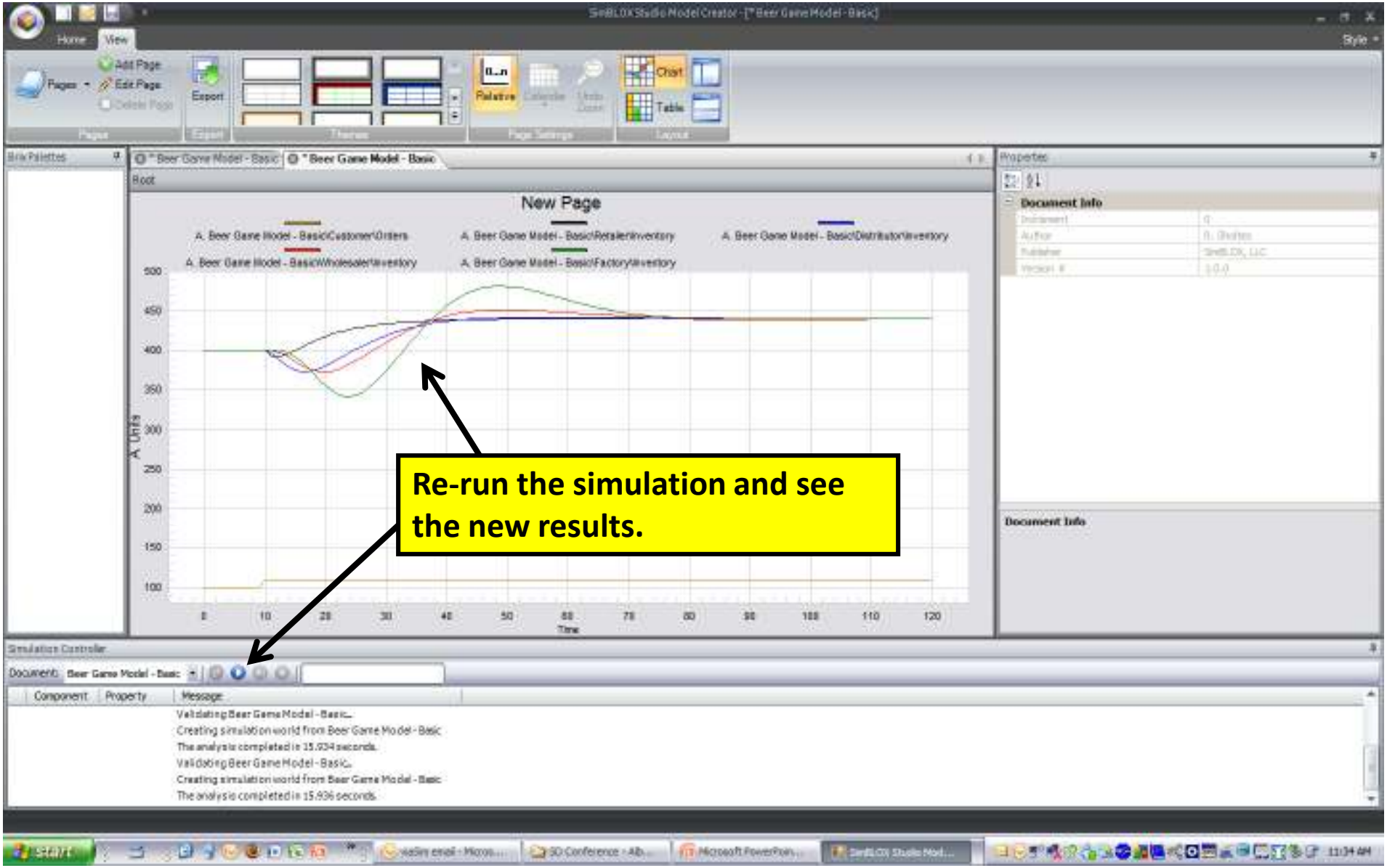

To see the output in table form, select the “Table” icon.


1. To export the table output to MS Excel, click on the "Export" icon.
2. Name the file, select the folder where you want to save the file, and click Save.
Export
Save As
Save in:
SD Conference - Albuquerque - Jul 26-31
File name:
Simulation Output - 1
Save
Cancel
Save as type:
Document Info


Home
View
Chart
New Page
A. Beer Game 1\Customer\Orders
A. Beer Game 1\Retailer\Inventory
A. Beer Game 1\Distributor\Inventory
A. Beer Game 1\Wholesaler\Inventory
A. Beer Game 1\Factory\Inventory
A. Units
Time
To get back to the chart view for the output, click on the “Chart” icon.
Document Info
Simulation Controller
Component
Property
Message
Validating Beer Game 1...
Creating simulation world from Beer Game 1
The analysis completed in 15.953 seconds.


Home
View
Layout
Templates
Analysis
Beer Game Model - Basic
Root
Factory
Wholesaler
Distributor
Retailer
Customer
Properties
Document Info
Simulation
Run time
120 Weeks
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.”


Factory
Wholesaler
Distributor
Retailer
Customer
1. If you want to change inputs for any of the entities in the supply chain, click on the entity in the layout.
2. Then make the desired change to the desired input variable.


New Page
A. Beer Game Model - Basic\CustomerOrders
A. Beer Game Model - Basic\RetailerInventory
A. Beer Game Model - Basic\DistributorInventory
A. Beer Game Model - Basic\WholesalerInventory
A. Beer Game Model - Basic\FactoryInventory
A. Units
Time
Re-run the simulation and see the new results.
Document Info
Simulation Controller
Component
Property
Message
Validating Beer Game Model - Basic...
Creating simulation world from Beer Game Model - Basic
The analysis completed in 15.934 seconds.
Validating Beer Game Model - Basic...
Creating simulation world from Beer Game Model - Basic
The analysis completed in 15.936 seconds.

For more information, please contact:

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