



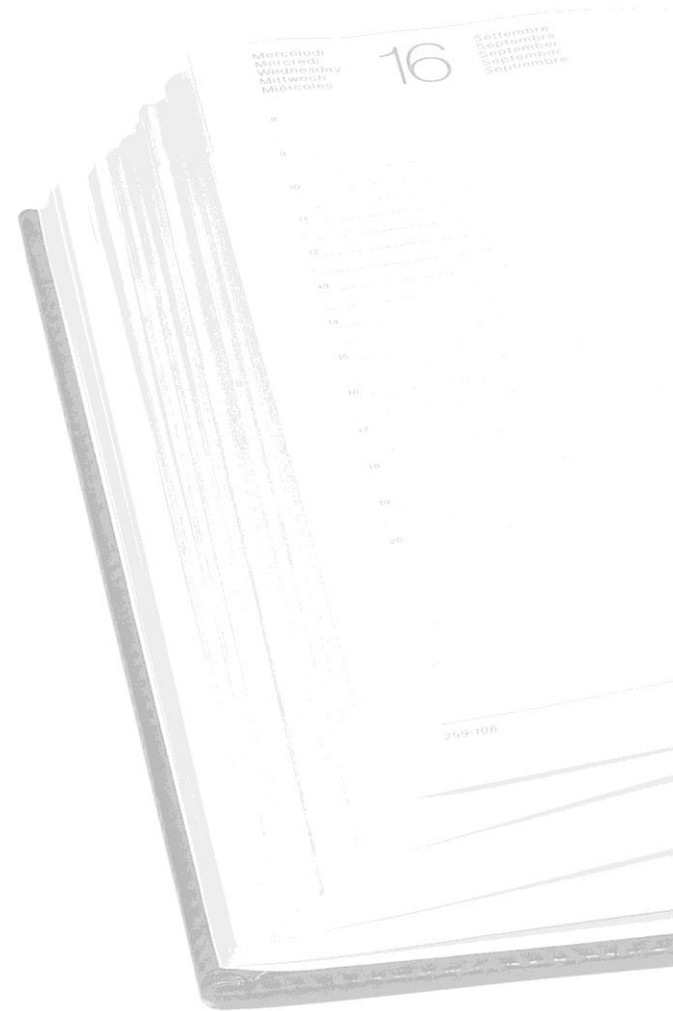
LISTEN.  
THINK.  
SOLVE. SMA

LISTEN.  
THINK.  
SOLVE.<sup>SM</sup>

**Rockwell**  
**Automation**

**Introduction to Arena Simulation Software**  
for Process Simulation, Modeling & Analysis

- Introductions
- Overview of Arena and Simulation
- Arena Product Family
- Demo Software
- Licensing and Training
- Questions



# Who are we?

## Rockwell Automation - (NYSE: ROK)

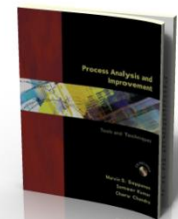
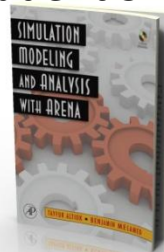
- Industrial automation solution provider and controls manufacturer
  - \$4.5B Annual Revenues
  - 20,000 Employees
- The Arena Team
  - Over 25 years leading the DES space
  - Over 350,000 users and growing
  - Over 700 Universities worldwide
  - Flexibility for any industry and any application

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- Textbooks referenceing Arena are in many languages:
  - Simulation with Arena (Kelton, Sadowski, Swets)
  - Applied Simulation Modeling (Seila, Ceric, Tadikamalla)
  - Simulation and Analysis with Arena (Altiok, Melamed)
  - Process Analysis and Improvements (Seppanen, Kumar, Chandra)
  - Simulation Modeling and Arena (Rossetti)
  - Simulation-Based Case Studies in Logistics (Merkuryev, Merkuryeva, Piera, Guasch)
  - Healthcare Operations Management (McLaughlin, Hays)
  - Dynamic Capacity Management for Healthcare (Story)
  - Reprints and other Arena textbooks also in Japanese, Korean, Spanish, German & Portuguese
- Taught at most universities that offer Industrial/Systems Engineering and Operations Research degrees. Growing use in MBA and Healthcare Management programs.
- Over 700 universities around the world!
- Rockwell sponsors the annual IIE Student Simulation Competition.



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### Gartner Identifies the Top 10 Strategic Technologies for 2010

Analysts Examine Latest Industry Trends During Gartner Symposium/ITxpo, October 18-22, in Orlando

ORLANDO, Fla., October 20, 2009 —

Gartner, Inc. analysts today highlighted the top 10 technologies and trends that will be strategic for most organizations in 2010. The analysts presented their findings during Gartner Symposium/ITxpo, being held here through October 22.

Gartner defines a strategic technology as one that will have a significant impact on the enterprise in the next three years. These technologies include a high potential for disruption to IT, a high potential for a billion-dollar investment, or the risk of being late to market.

These technologies impact the organization's business process, either because they enable strategic advantage or because they disrupt the current business process.

"Companies should factor the top 10 technologies into their business process by asking key questions and making decisions about the next two years," said David Cearley, CEO of Gartner. "However, this does not necessarily mean that all of these technologies should determine their individual business initiatives."

The top 10 strategic technologies for 2010 are:

- Cloud Computing.** Cloud computing is a model in which providers deliver a variety of services to customers over the Internet. Cloud-based services can be exploited in a variety of ways to develop an application or a solution. Using cloud resources does not eliminate the costs of IT solutions, but does re-arrange some and reduce others. In addition, consuming cloud services enterprises will increasingly act as cloud providers and deliver application, information or business process services to customers and business partners.
- Advanced Analytics.** Optimization and simulation is using analytical tools and models to maximize business process and decision effectiveness by examining alternative outcomes and scenarios, before, during and after process implementation and execution. This can be viewed as a third step in supporting operational business decisions. Fixed rules and prepared policies gave way to more informed decisions powered by the right information delivered at the right time, whether through customer relationship management (CRM) or enterprise resource planning (ERP) or other applications. The new step is to provide simulation, prediction, optimization and other analytics, not simply information, to empower even more decision flexibility at the time and place of every business process action. The new step looks into the future, predicting what can or will happen.
- Client Computing.** Virtualization is bringing new ways of packaging client computing

# What is Discrete Event Simulation?

- **Discrete Event Simulation,**
  - *Modeling events that occur over **time**, with **variability** and **system interactions** to provide highly accurate predictions of system performance and capabilities under virtually any set of conditions.*

## What Simulation does for your company?

- Understand how complex systems work
- Answer critical “What if..?” questions
- Visualize operations
- Insurance policy for major decisions
- Completely risk-free environment

**Test Here**



**Implement Here**



- **Get it right the first time when changing or designing a complex process!**
  - What if our [product mix, tact time, call volume, failure rate, patient arrival rate, etc.] changes? How will that affect throughput, queues, costs, and resource utilization?
  - What if the new security regulations require 30 - 60 more seconds for each passenger and each piece of luggage being scanned?
  - If we consolidate these two facilities into one facility, what's the best layout for the new warehouse?
- **Avoid wasteful spending**
  - Why purchase 10 [fork trucks, mixing tanks, etc.] when purchasing 7 provides enough capacity?
  - What's the minimum inventory needed to prevent stock outs? How best to store and transport it?
- **Lean and Six Sigma initiatives**
  - Value Stream Mapping
    - Identify & eliminate NVA activities, streamline!
  - Analyze the impact of variability
    - DMAIC, DFSS, DMADV
- **Visualize problems and solutions**
  - Communicate ideas, gain consensus, destroy myths!

**Answer critical “What if...?” questions before  
investing capital and without disrupting current operations.**

Why?



- Variability
- System Interactions
- Time
- Animation
- Bottlenecks
- Complexity
- Low Risk/High Return
- System Discovery


**Make Better Decisions**

## *Excel*



## *Simulation*



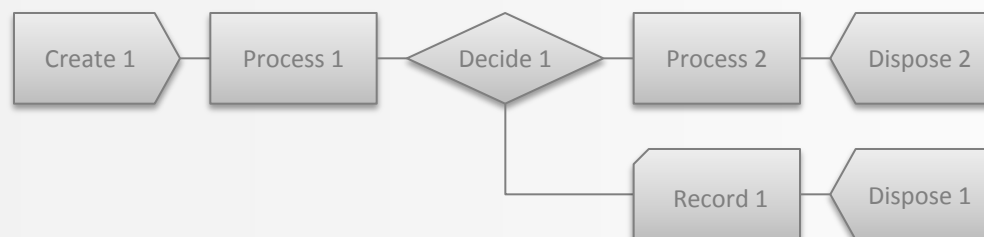


## With many simulation software packages to choose from, why Arena???

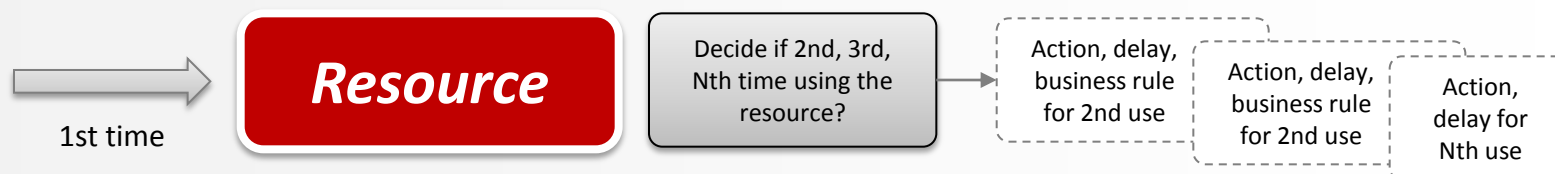
- Easy to Use
- Proven
- Latest Technology and backed by Rockwell (we will be here tomorrow)
- Over 350,000 users worldwide
  - Connect with us on Facebook and Linked-in!
- Thousands trained each year
- Volumes of 3rd Party Reference Materials
- Our Team
- Visit us at [www.ArenaSimulation.com](http://www.ArenaSimulation.com) to learn more

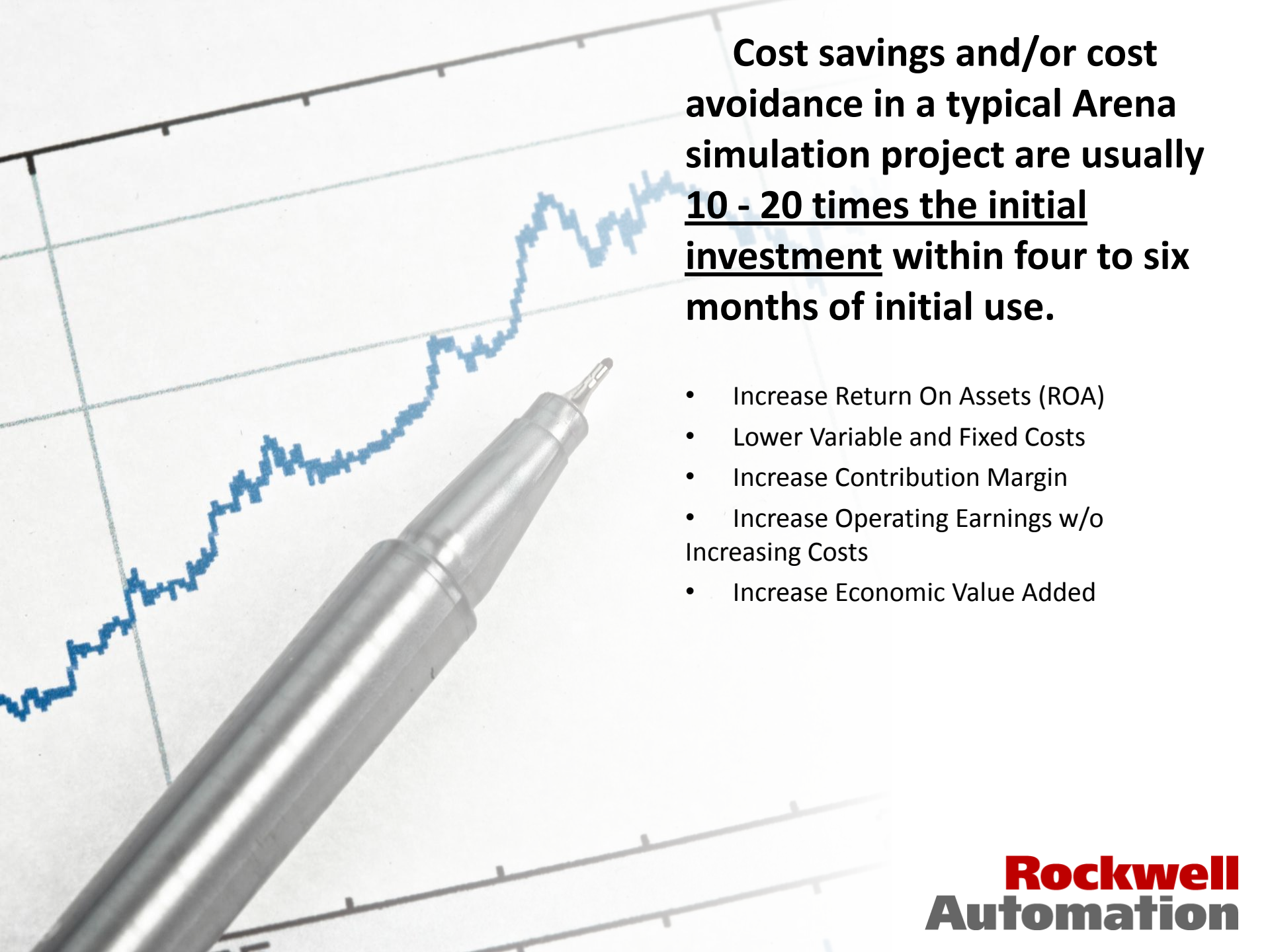
- **Fundamental difference in modeling approach**
- **Flowchart Based Modeling vs Animation Based Modeling**
  - Document the process as you develop the model
  - Share models easily – new users can follow logic
  - Control of Resources – easily re-use resources throughout your model
  - Reduce learning curve and model development time
  - Flexibility – model any system to any level of detail

## ***Flowchart Based Modeling***



## ***Animation Based Modeling***





**Cost savings and/or cost avoidance in a typical Arena simulation project are usually 10 - 20 times the initial investment within four to six months of initial use.**

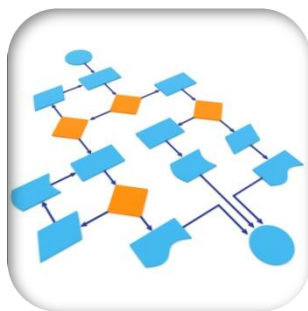
- Increase Return On Assets (ROA)
- Lower Variable and Fixed Costs
- Increase Contribution Margin
- Increase Operating Earnings w/o Increasing Costs
- Increase Economic Value Added



# A “typical” Arena project



***Interface for data  
and results***



***Crunched thru  
model logic***



***Creates a Visual  
Simulation***



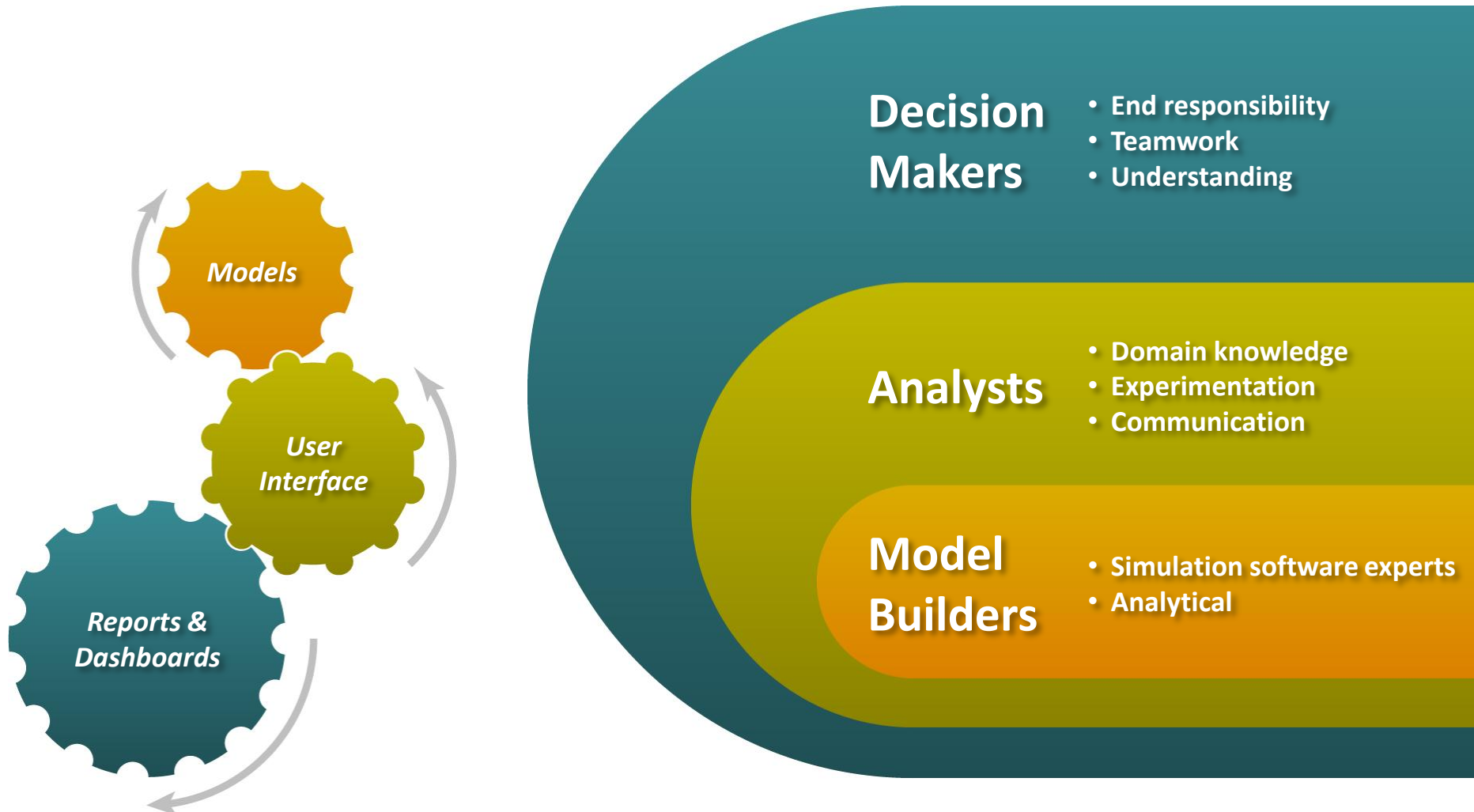
***That outputs  
statistical data***

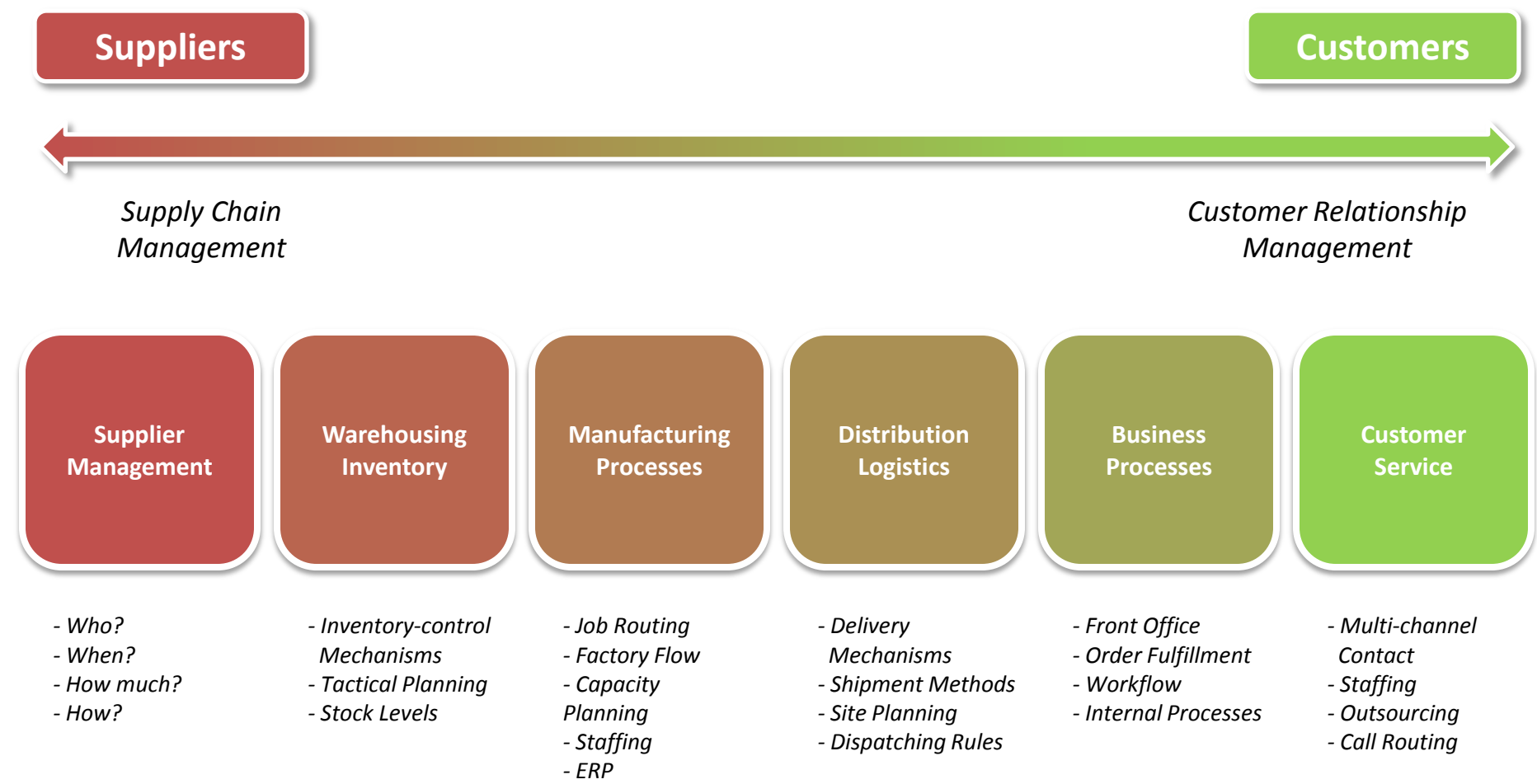


**That results in enlightenment**



## Arena Simulation Projects are Teamwork!





**Choose the Arena® product that matches simulation project requirements.**

<b>Entry level</b>	<b>Arena® Basic Edition</b>	A full-featured, entry-level modeling and simulation tool that is ideal for studying business processes. Import Visio® flowcharts. Crystal Reports® output reports.
	<b>Arena® Basic Edition Plus</b>	Enhance your Basic Edition models by animating the movement of people, objects, and/or material-handling devices such as conveyors, transporters, or AGV's. Animate entity travel on imported AutoCad® drawings, maps, or custom pictures.
<b>Full featured</b>	<b>Arena® Standard Edition</b>	Advanced modeling power for handling complex processes with intricate decision logic, control over entity movement, custom statistics, user-defined expressions, and interfacing with external data.
<b>Blackbelt</b>	<b>Arena® Professional Edition</b>	For modeling the most highly complex processes, as well as batch and semi-continuous processes. Access to the low-level SIMAN® modeling constructs makes this the ultimate modeling tool. Includes OptQuest for Arena and custom template development tools.
<b>Add-on products: Packaging Template, Contact Center Template and OptQuest for Arena</b>		



# Arena Services Essential for Your Success!

## •Training:


- Scheduled 3-day classes
- Onsite 2-day and 3-day classes

## •Turnkey simulation project services:

- Expert Systems Navigator consultants deliver complete models with user & data interfaces built to your exact specifications and train you on using them
- Provide complete analyses and interpretation of model output data
- Obtain all the value of simulation with no requirement to staff trained model builders

## •Embedded simulation services:

- Expert Systems Navigator simulation consultants perform a contractual number of weeks or months of simulation services for your company on an annual basis
- Obtain all the value of simulation with no requirement to staff trained model builders



**Thank you!**  
**Do you have any questions?**

**Rockwell**  
**Automation**