Catalog of Simulations

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What's Included

Individual Student Engagement
Each student receives an individual account with personal login to the simulation. Students work individually or in teams, exploring and experimenting as they complete the simulation's challenges.

Summary of Class Results
Once the simulation is complete, your class results are automatically populated into a debriefing presentation to easily share with your students, making trends and high scores easy to decipher and discuss. Use your facilitator's guide to lead this presentation and discussion.

Facilitator Preparation
After purchase, a Forio simulation specialist schedules a one-on-one training session to ensure that you are familiar with all aspects of the simulation (excludes accredited academic purchases). Your purchase also includes a detailed facilitator's guide written by faculty at the authoring institution (Harvard, MIT, Wharton, Kellogg).

Support
From your initial quote to a post simulation follow up, Forio provides friendly, direct, and personalized support via phone or email.

Security
Student results are available to facilitators but are not shared across groups. Individual student logins help prevent students sharing results among themselves.
Everest: Leadership & Teamwork
Leadership / Team Building / Communication / Group Dynamics & Decision Making

Students explore group dynamics and leadership while attempting to summit Mount Everest in this collaborative, multiplayer simulation. During each round of play, students decide how to effectively distribute supplies and information needed for the ascent - choices that affect speed, health, and ultimately the team’s success in summiting the mountain. Failure to accurately communicate and analyze information has consequences on team performance.

Also available in Spanish.

Strategic Innovation: Back Bay Battery
Leadership / Team Building / Communication / Group Dynamics & Decision Making

Students assume the role of the CEO of Back Bay Battery where they are responsible for managing a portfolio of R&D investments for products in the portable power industry. Over eight simulated years, participants face budget constraints and uncertain market conditions as they attempt to balance existing financial goals with product performance constraints and the need for product innovation.

Developed in partnership with Clayton Christenson, based on his work The Innovator’s Dilemma.

Change Management: Power & Influence
Leadership / Team Building / Communication / Group Dynamics & Decision Making

This simulation includes four scenarios in which students play as either the CEO or Director of Product Innovation and face the challenges associated with implementing an organization-wide environmental sustainability initiative. In each round of play, students choose among 18 change levers while attempting to move the organization’s management team along a four-step pathway of adoption. Students are assessed on their ability to establish credibility and achieve the highest number of adopters.

Marketing: Managing Customers & Segments
Leadership / Team Building / Communication / Group Dynamics & Decision Making

In this single-player simulation, students define and execute a business-to-business marketing strategy to capture the most profitable market segments for a manufacturing firm. Students allocate sales and marketing resources for each targeted market segment, deciding which new customers they want to acquire and which loyal customers they need to retain. Ultimately, students work to find levels of spending on market research and marketing communications that maximize cumulative profit for the company.

Learning Focus
- Explore influences on collective decision-making including team dynamics, opposing interests, and cognitive biases
- Analyze different leadership approaches and team responses
- Understand effective strategies for building, participating in, and leading teams more effectively

Learning Focus
- Understand the challenges involved in simultaneously investing in core business and innovation
- Investigate different ways of assessing emerging market opportunities and emerging research
- Explore the timing and level of R&D spending to maximize long-term opportunity and growth

Learning Focus
- Understand the four stages of change management (change awareness, interest, trial, adoption)
- Experiment with different strategies for effective change management
- Explore power, influence, and resistance to change within an organizational setting

Learning Focus
- Understand segmentation, targeting, and positioning
- Create and execute an effective marketing strategy based on segment and customer needs analysis
- Investigate the relationships between customer satisfaction, customer buying patterns, customer loyalty, and profitability
Entrepreneurship: The Startup Game
Leadership / Team Building / Communication / Group Dynamics & Decision Making

Startups are different from larger firms, and often encounter unstructured and difficult problems that are not as well-defined as the strategy issues faced by established organizations. Students play one of three roles: founders, investors, or employees in a market full of early-stage startups. They gain an understanding of decision-making under uncertainty, the variations in strategy among individuals, and experience with common trade-offs resulting from different strategies and decisions.

Negotiation: OPEQ
Leadership / Team Building / Communication / Group Dynamics & Decision Making

In this highly interactive, team-based simulation, groups of students act as member nations of “OPEQ,” setting petroleum production levels with competing countries in order to maximize cumulative profits. Tension between cooperation and self-interest intensifies with each round of the game: cooperation has great benefits, but individuals have incentives to defect. The simulation explores the dynamics of cooperation and competition, negotiation, best response, Nash equilibrium, and other economic principles.

Finance: Working Capital: Managing Growth
Leadership / Team Building / Communication / Group Dynamics & Decision Making

Students choose to invest in growth and cash flow improvement opportunities, such as taking on new customers, capitalizing on supplier discounts, and reducing inventory. Students experiment over ten simulated years, balancing the desire for growth with the need for maintaining liquidity, considering the effects of each opportunity on the firm’s financial position.

Project Management: Scope, Resources, Schedule
Leadership / Team Building / Communication / Group Dynamics & Decision Making

In this single-player simulation, students manage a project team responsible for delivering a product at a small electronics and computer peripherals manufacturer. Students must staff the project team, manage team process, and execute a project plan. Unanticipated events and challenges threaten the success of the project and force students to consider possible tradeoffs among project resources to bring the new product to market on time, on budget, and ahead of the competition.

Learning Focus
- Introduce key concepts in entrepreneurial management, including valuation approaches, compensation, fundraising considerations, Rich versus King orientation, exploration versus exploitation, and the effects of diversity
- Illustrate the interplay between the many factors required to make entrepreneurial ventures successful
- Provide classroom experiences in entrepreneurship

- Recognize interconnections between the income statement, balance sheet, and statement of cash flows
- Experiment with tradeoffs between managing revenue and managing working capital
- Explore the consequences of investing too much or too little in net working capital
- Understand the relationship between project scope, resources, and schedule
- Experiment with how team skill level, team morale, deadlines, and work quality are related both to each other and to project management decisions
- Determine realistic project objectives in the face of uncertainty
Operations Management Simulation: Benihana

Service Industry / Capacity Planning / Operations Management / Restaurant Management

Students explore the principles of operations and service management at a busy Benihana restaurant. Through a series of challenges, students examine individual operations management concepts; the final challenge requires students to design an overall operational strategy. In each challenge, the goal is to manage the bar and dining area to maximize utilization, throughput, and - most importantly - profit for the evening.

Operations Management Exercise: Inventory Basics

Inventory Control / Operations Management

Students manage a small hardware store and are responsible for inventory levels of up to three different products over a period of 12 simulated weeks. The exercise illustrates essential concepts in inventory management surrounding replenishment. Each week, students must decide how many units of each product to order based on holding costs, stockout costs, ordering costs, and variable demand. This exercise includes three configurable scenarios and an assessment quiz built in to the exercise.

Operations Management Exercise: Push vs. Pull Production

Inventory Control / Production Planning / Operations Management

Students manage the production facility of a computer manufacturer and develop intuition about production flow in a multi-stage process. Students work with both Push and Pull production triggering mechanisms, and explore the implications of each method for meeting demand, managing inventories, and managing capacity utilization. This exercise includes six configurable scenarios and an assessment quiz built in to the exercise.

Operations Management Exercise: Multiple-Server Queues

Capacity Utilization / Operations Management / Queuing

Students manage several configurations of a hospital Intensive Care Unit (ICU), including multiple specialized units or a larger pooled unit. Variability in arrival times, service times, and resource utilization are configurable, and all impact patient waiting times. The exercise illustrates trade-offs between cost, patient experience, and clinical quality in queuing systems. This exercise includes two configurable scenarios and an assessment quiz built in to the exercise.

Learning Focus

- Experiment with improving throughput using different batching strategies
- Test different strategies for influencing demand variability
- Investigate capacity, demand rates, cycle time, and throughput in a service operation
- Manage inventory levels and replenishment decisions in the face of different demand patterns, holding costs, stockout costs, & ordering costs
- Develop an intuitive strategy for balancing holding costs against ordering costs and avoid a stockout
- Understand the Economic Order Quantity (EOQ) and its role in basic inventory management
- Compare and contrast Push, Pull, and mixed systems of production planning
- Understand the relationship between batch size and setup times
- Understand how bottlenecks, capacity, and utilization impact production planning and inventory control
- Understand the relationship between utilization and waiting time in a service organization
- Manage variability in arrival and service times in a service organization
- Identify advantages and disadvantages of using pooled systems vs. specialized systems
- Understand the levers for improving performance of queuing systems
Operations Management Exercise: System Utilization in Service Management
Capacity Utilization / Demand Measure / Insurance

Based on the classic Manzana Insurance case, students manage a service process — reading and writing insurance policies — while developing intuition about capacity utilization, turn around time, work in progress, and the effects of demand variability. This exercise includes four configurable scenarios and an assessment quiz built in to the exercise.

Operations Management Exercise: Balancing Process Capacity
Capacity Utilization / Throughput & Cycle Time / Operations Management

Players are charged with eliminating process-related bottlenecks, maximizing utilization, reducing process variability, and improving profitability across three different sections of a car wash: vacuum, machine wash, and hand-dry stations. This exercise includes two configurable challenges. In some cases the demand is constant, and in other cases both the demand and the processes include variation.

Operations Management: Quality Analytics: Cost of Quality
Statistical Process Control / Process Capacity / Cost of Quality / Operations Management

Students work through a series of four challenges to calculate control limits for X-bar and R charts, make decisions about machine recalibrations and labor substitutions, determine whether processes are capable of producing to specifications, and make investment decisions in order to minimize the total cost of quality. Challenges span service, health care, and manufacturing settings. Students work as operators, responsible for keeping a process in control, and managers, responsible for process improvement.

Operations Management: Process Analytics
Capacity Management / Operations Management / Inventory Management

Students work with assembly process models over time in this series of problems dealing with production environments. While experimenting, students can monitor throughput, cycle times, production capacity, and utilization rates. Students add workers or set task times to improve yield.

Learning Focus
- Manage Turn Around Time (TAT) and Work In Progress (WIP) in a service organization
- Understand Little's Law (impact of WIP on throughput time)
- Identify bottlenecks in service organizations
- Develop intuition about the effects of demand variability in processing times in a service organization

- Measure the optimal performance of a process
- Understand relationships between throughput time, cycle time, throughput rate, and capacity utilization
- Understand Little's Law (balance of capacity utilization and management of bottlenecks)
- Explore how variability affects key process measures and profitability

- Understand the difference between a process that is in control and a process that is capable
- Understand the relationship between Internal Failure Costs, External Failure Costs, Appraisal Costs, Prevention Costs, and the total cost of quality
- Explore how managerial decisions about quality control affect product yields and costs

- Develop intuition around core operations management concepts
- Investigate fundamental concepts of process analysis
- Facilitate discussion around the interplay between various elements of process analytics
Marketing: Pricing Universal Rental Car

Capacity Management / Pricing / Marketing / Demand Elasticity

Students assume the role of a district manager at a rental car agency responsible for setting prices and fleet size for rental cars in Tampa, Orlando, and Miami. Over 12 simulated months, students must analyze the economic, seasonal, and competitive forces of the rental car market and develop a pricing strategy to maximize the cumulative profit for the firm.

Supply Chain Management: Root Beer Game

Order to Delivery Time / Supply Chain / Inventory Management / Value Chain Management

Students play one of four roles in a root beer supply chain: factory, distributor, wholesaler, or retailer. Each role can influence the entire chain by ordering too much or too little. This lack of coordination, called the “bullwhip effect,” worsens shortages and overstocks. Students work together to minimize inventory holding costs while avoiding inventory shortages. Based on the classic Beer Game developed by Jay Forrester at MIT.

Finance: Capital Budgeting

Capital Rationing / Capital Budgeting / Risk-Associated Discount Rates / NPV, IRR, Payback / Profitability Index

Capital constraints limit financial resources and force students to carefully evaluate capital investment proposals across the company’s three divisions. Students examine cash outlays and flow patterns and analyze common metrics such as net present value (NPV), internal rate of return (IRR), payback, and profitability index. Ultimately, students develop a capital budgeting strategy and choose projects with the greatest impact on the company’s value.

Finance: M & A in Wine Country

Mergers & Acquisitions / Negotiations / Financial Valuation

As CEO one of three publicly traded wine producers, each student evaluates merger and/or acquisition opportunities among the three companies. Students determine reservation prices, value targets, and negotiate deal terms before deciding whether to accept or reject final offers. Each company’s stock price reacts to the bidding activity, and all bids are public, creating a competitive and fast-paced negotiation environment.

Learning Focus

• Explore the dynamics of consumer response to price changes across customer segments and geographic markets
• Understand the roles of fixed costs and variable costs in pricing decisions
• Understand the role of pricing in managing inventory

• Explore influences on collective decision-making including team dynamics, opposing interests, and cognitive biases
• Analyze different leadership approaches and team responses
• Understand effective strategies for building, participating in, and leading teams more effectively

• Explore resource allocation within a corporation
• Understand different tools of investment analysis (NPV, IRR, payback, profitability index, risk-adjusted discount rates)
• Investigate how capital budgeting and capital rationing influence company performance and market position

• Investigate different valuation models, including discounted cash flow, adjusted present value, and multiples
• Explore value creation during a merger or acquisition
• Understand differences between equity transactions and cash deals
In 2003, The Blackstone Group LP was contemplating whether to launch a tender offer for Celanese AG's common shares as part of a friendly takeover. The transaction, if successful, would constitute the largest European public-to-private transaction in history. Students play the role of either Celanese or Blackstone and conduct due diligence, establish deal terms, and respond to bids and counter-bids, all while balancing interests of other stakeholders.

Students take the role of top management of B & B Enterprises, a fictitious firm based on a variety of real cases. The game begins as a new product is launched. Students are responsible for marketing, pricing, and capacity expansion decisions to maximize their cumulative profit over the next 40 quarters. Students also face a simulated competitor whose pricing, marketing, and capacity expansion strategies are unknown.

SoftStrat helps students understand the complexities and challenges in dealing with disruptive business models and how to transition to new models while maintaining a healthy business, particularly within the context of Enterprise software and SaaS. Students play the role of the Chief Strategy Officer and must decide how to allocate scarce financial resources across R&D, marketing, and operations investments as well as set prices for legacy and SaaS software offerings.

Each student plays the role of a product manager at a medical device manufacturer. Customers report a series of critical problems with the company's newly launched blood glucose monitor. Each student receives a barrage of communications about the problem — via email, video messages, voicemail, and instant message chats — and must quickly determine the root cause of the issue and make recommendations on how to proceed. The simulation explores issues related to human judgment, cognitive bias, decision-making, and root cause analysis during a crisis.
Startups & Entrepreneurship: CleanStart

In this single-player simulation, students play the role of the founder of a new startup company in the clean tech sector. They must win customers, hire and motivate people, improve the product, and finance their growth. Each quarter, students set prices, decide on new hires, set compensation (including salary, stock, options, and profit sharing), and raise capital through sales or by approaching venture capitalists.

Renewable Resource Management: Fishbanks

Sustainable resource management is an essential skill for businesses and policy makers alike. In this multiplayer simulation, students take on the role of fishing companies, competing against other players to maximize net worth. Students buy, sell, and build ships, decide where to fish, and negotiate with one another. Facilitators can set different policy options in the game, including instituting permits and quotas.

Also available in Spanish, Portuguese, and Chinese.

Network Externalities: Video Game Platforms

In many industries, success does not depend exclusively on price, quality, and functionality, but also on network externalities. Students play the role of senior management at a video game hardware platform producer. Students set prices for their gaming console and royalty rates for game designers as they try to simultaneously grow their install base (direct network externality) and grow the ecosystem of complementary products and games (indirect network externality).

Pricing Strategy: Salt Seller

Understanding cost structure and competitive dynamics in a basic commodity market is a crucial prerequisite for analyzing more complex markets. This simulation gives students the opportunity to set prices for a commodity in an imperfectly competitive market. Students play the role of CEO of a salt producer selling salt for de-icing roads. The simulation lets students experiment with different profit-maximizing strategies.

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Market Growth: Eclipsing the Competition
Pricing Strategy / Technology Strategy / Scale Economies / Learning Curves

Managing growth and profitability can be especially difficult in a market with learning curves and scale economies, where the market leader can often gain a cumulative advantage. Students play the role of senior management at a leading firm in the solar photovoltaic industry. They seek to maximize profits over a 20-year time horizon, setting product prices and budgets for process improvements. Students compete against other firms, including potential new entrants, played by the computer.

Contract Negotiation: Coffee Trade Game
Contracts / Negotiation

Negotiations around buyer-supplier contracts are critical to supply chain communication and coordination. In this team-based simulation, students apply strategies for contract negotiation in a rapidly changing environment. Students manage two supply chains simultaneously: one that converts raw green beans into roasted beans, and one that converts other varieties of roasted beans into coffee blends. Working as both buyers and sellers, teams compete to accumulate total profit.

Data Analytics: Strategic Decision Making
Analytics / Decision Analysis & Decision Making / Market Analysis & Marketing Strategy

Organizations of all sizes use data from operations and from customer & supplier interactions to improve their strategic and tactical decisions. In this single-player simulation, students play the role of a product marketing manager for a brand of laundry detergent at a large consumer products firm. Students formulate a marketing strategy; manipulate and analyze market data; and employ these descriptive and predictive analytics to inform internal decisions.

New Venture Exercise: The Food Truck Challenge
Prototyping / Innovation / Product Development / Market Research

In this exercise, students play the role of an entrepreneur working to maximize revenue by selling ice cream, frozen yogurt, or smoothies. During each of five simulated weeks, students choose between conducting additional market research, opening a food truck, or opening a small pushcart. Instructors choose from three scenarios available in the underlying model, each with different optimal outcomes — so students can play a second time after a debriefing session, and apply what they’ve learned.

Learning Focus
• Explore the challenges of pricing and strategy in a market with significant learning curves
• Understand the market impacts of entry of competitors with radical new technologies
• Experiment with different strategies in the presence of learning curves and scale economies

Learning Focus
• Develop strategies for spend categories
• Negotiate favorable contracts over multiple rounds
• Manage and adapt contracts based on negotiation strategies
• Recognize that negotiations are key to net income

Learning Focus
• Explore underlying factors and segments in data to develop a coherent marketing approach
• Iteratively analyze and understand data
• Recognize that predictions and forecasts are based on probabilistic assumptions

Learning Focus
• See the value of rapid prototyping in a changing environment
• Understand how learning-by-doing may have advantages over research in some environments
• Practice making key decisions and adapting choices based on market feedback
Global Supply Chain: Management Simulation

Demand Analysis / Forecasting / Supply Chain Management

In this single-player simulation, students design a mobile phone product line, forecast demand, choose a set of suppliers, and allocate production among them. Students then observe actual demand, and have opportunities to respond to demand shifts and unexpected events over the course of four simulated years. Students are scored both on their cumulative results, reflected in their profits, and on their process choices, reflected by the support of board members.

PFG Bank: Credit Card Exercise

Test-cell Marketing / Product Tailoring / Market Research

Students review a variety of products (12 versions of a credit card) and detailed information about several thousand potential customers. Then, students use test-cell marketing to determine which products to market to which customers, and send out multiple direct mail campaigns, each with different associated costs.

Positioning Game: Market Segmentation Exercise

Market Definition / Market Segmentation / Market Positioning / Perceptual Maps

Students compete to position products and find the ideal market for new offerings. After reviewing a perceptual map of market structure and noting consumer preferences, students place their products. Over several simulated rounds, students seek to increase total market share by updating market positioning for their products.

List Testing Exercise: Economic Selection

List Testing / Sample Size Analysis / Market Research

Students explore the practice of testing a random sample of names from a set of rented lists, deciding how many names to test and how many rounds of testing to conduct before making each rollout decision. Students must weigh the value of testing against its costs while working to maximize profits for their marketing campaign.

Learning Focus

- Create a cost-effective and flexible supply chain
- Evaluate forecasting methods
- Build a production plan
- Weigh the relative importance of results and process performance measures

- Demonstrate test-cell marketing
- Estimate Customer Lifetime Value (CLV) for different market segments
- Illustrate the benefits of product tailoring

- Understand perceptual maps and how to use them in market definition
- Analyze markets and recognize consumer segments, underserved segments, and ideal points for targeting opportunities
- Critique brand perceptions and recognize perception problems

- Experiment with the mechanics of list testing
- Understand the statistical reasons why testing results differ from rollout results
- Learn how simulation can be used to answer statistical questions
The Beer Game: Supply Chain Communication

Bullwhip Effect / Inventory Control / Supply Chain Visibility

Teams of students take on different roles in a supply chain and experience for themselves the challenges of minimizing costs. Teams must cope with variable demand, lead times, modes of transport, inventory-carrying costs, stock-out costs, and incomplete information across the supply chain. Instructors determine whether members of each team are able to share information with each other, and how much the information may cost.

Learning Focus

- Understand the causes, consequences, and counterstrategies for the bullwhip effect
- Explore the challenges of inventory management in a dynamic environment with limited access to information