

INTEGRATING GLOBAL ENGINEERING AND PROCUREMENT AT AIR PRODUCTS

Air Products, an industrial chemical producer headquartered in the U.S., designs, builds, and operates air separation facilities worldwide. Unfortunately, industrial buyers increasingly view the company's primary products as commodity items, which, along with intense global competition, have created extensive downward price pressures. Product prices in real terms are equivalent to levels not seen since the early 1980s. This has created the primary challenge that Air Products faces—margins are declining yet the company has made strong performance commitments to investors and financial analysts. Executive management has concluded that the company must lower facility-related costs by 30% to meet financial and operating targets.

Air Products has historically operated as an engineer-to-order company, which implies a great deal of design work customized to each new project. New facilities have largely been engineered without considering previous designs or leveraging commonality across the company's two major design and procurement centers. The company's objective has now shifted to entering the global marketplace as a single integrated company. Pursuing this objective resulted in the development of an integrated engineering and procurement process involving U.S. and European centers. Even if the U.S. and Europe required a similar or same item (which was often the case) or designed the same facility in terms of process technology, each would have separate material specifications and contracts developed by engineers and procurement specialists who did not coordinate their efforts.

During the latter part of 1999 Air Products introduced a global process that proactively integrates and coordinates common items, processes, designs, technologies, and suppliers across two worldwide buying and engineering centers (North America and Europe). This case reports on the efforts of Air Products to pursue a globally integrated approach to engineering and procurement.

Development of the Air Products Global Engineering and Procurement Process

The primary driver behind Air Products global engineering and procurement process is the need for cost reduction. This process evolved as senior engineering managers expressed a desire to gain advantages from “globalization” but were not sure what this meant or required. The vice president of engineering believed that the potential benefit of standardizing component designs and then using the procurement process to realize performance gains through leveraged sourcing with global suppliers could be significant. Recognizing the important linkage between engineering and procurement resulted in the development of the Air Products global engineering and procurement process.

Responding to the call to “globalize” engineering and procurement, a director of global projects and logistics supply assembled a leadership team to develop, sell internally, and launch a global process. This leadership team has evolved into a corporate steering committee with a full-time globalization manager assigned to oversee the process. A major part of the process development effort involved several procurement managers working together to define the concept of globalization and assume responsibility for creating a global engineering and procurement process, which required 3-4 months.

The global process at Air Products involves more than identifying similar items or commodities that have a global application. Each project involves an extensive analysis between the U.S. and European design centers to determine areas of commonality and synergy. A cross-locational team, with members from the U.S. and Europe participating, develop specifications that satisfy the needs of both design centers. While the process started with focused commodities, subsequent projects have become broader in scope once the cost-saving possibilities became obvious. Although the primary focus of the global sourcing effort involves commodities associated with plant and technical processes, telecommunications, travel, and some purchased chemicals are now part of the global process. Exhibit 1 highlights the main features of Air Products’s nine-step global engineering and procurement process.

Air Products has several advantages that increased the chances of global engineering and procurement success. This company has historically organized its purchasing group by commodity with a strong central focus. Although it operates facilities around the world, the practice of making decisions at one or several locations is not usually resisted.

Decentralization, which often affects how well global sourcing contracts are accepted at site locations, is fortunately not a concern at Air Products.

Air Products is also quite effective at sourcing and supply chain measurement. The company assesses the effectiveness of its global engineering and procurement process in four ways: direct savings realized from global agreements, ratings of global supplier performance, supplier ratings of Air Products as a customer, and evaluations of team members and team performance.

Global Engineering and Procurement Contracts The first round of global projects involved twenty agreements, ranging in value from several hundred thousand dollars to \$5 million, with total annual expenditures of \$25 million. These agreements, which are three-year single source contracts, are providing 20% cost savings on average compared to previous contracts. Managers view the global process as continuous because agreements will be renewed on a predictable basis. The company's aggressive three-year goal at the start of the process was to reach 20, 50, then 80 new global agreements over a three- year period.

Organizational Support Mechanisms The Air Products global engineering and procurement process has been successful due to the organizational support mechanisms put in place to guide the process. An executive steering committee, an operating steering committee, a globalization manager's position, and cross-locational teams have all been established to support the process. The executive steering committee consists of senior managers from engineering, procurement, and operations with a finance representative participating as required. This committee, which brings higher-level commitment and exposure to the process, has responsibility for allocating the budget that supports the globalization manager's staff along

with travel and living expenses for team members incurred during the development of global agreements.

A full-time globalization manager, a procurement manager (who commits 15% of his time to the global process), and a director of worldwide sourcing (who commits 50% of his time to the global process) comprise the core operating steering committee. This committee is joined in a weekly teleconference by a capital equipment supervisor from the U.S., a control systems (instrumentation) supervisor from the U.S., a capital equipment supervisor from Europe, and the globalization manager's counterpart in Europe. Global sourcing project teams do not talk with the committee at this time—this meeting involves the internal steering committee only. Committee members maintain that this group has a good fit between the managers and areas represented. While the group communicates formally each week, informal communication occurs daily to address a broad range of issues.

Consensus exists throughout Air Products concerning the importance of the globalization manager, a position created specifically to oversee the global engineering and procurement process. This manager, who is also the operating steering committee leader, is a well-respected engineer, not a procurement manager, with 25 years of experience. He reports to the vice presidents of engineering in Europe and the U.S. This is important since the two design centers must work closely during global projects. He has located his office and staff with the procurement group at U.S. headquarters, which facilitates teamwork and trust between functional groups. The manager's salary, along with that of his staff, is charged directly to the globalization manager's account number. While his account also pays team member travel and living expenses incurred during a project, member salaries remain an obligation of the members' procurement or engineering group. The budget committed to support the global process has recently doubled as the number of new projects increases dramatically.

Air Products relies extensively on cross-functional/cross-locational project teams to support its global projects. Teams are formed and chartered by the operating steering

committee to develop global strategies and contracts. These teams, each consisting of 4-6 members, have responsibility for determining which suppliers will receive formal proposals or bids and then proposing and negotiating a global sourcing strategy. An engineering representative from the U.S. and one from Europe, called specifiers, work full-time to develop standardized specifications between design centers. Time commitment can be an issue for the two buyers since team assignments are in addition to regular job responsibilities.

The globalization manager solicits team participation through each member's functional manager, a responsibility that he feels is one of his most important duties. If a steering committee selects a commodity for a global sourcing project, then the buyer and engineer closest to the commodity are invited to become team members. Engineering is responsible for developing specifications and evaluating the technical responses from suppliers while procurement evaluates the commercial issues.

Each project team works directly with the globalization manager to develop milestones and expected completion dates. Teams meet face to face on a monthly basis, which is impressive considering that each team has members from two continents. At these meetings, and informally throughout the process, teams update their milestones. Updates may also occur through team conference calls. A steering committee member receives regular team updates and reports the status of each project on the Air Products intranet.

Project teams perform supplier site visits as necessary using an ISO 9000 procedure and internal support documents to guide these visits. Perhaps the most important responsibility performed by these project teams is the development of a hypothetical best material cost model that identifies where savings can be realized. Savings occur primarily in three areas: material design savings, currency savings, and savings due to leveraging and opening the commodity to competition. The on-line manual available through the company's intranet provides a cost reduction methodology to support this exercise.

Project teams disband after negotiating a global agreement. At that point the buyer who is closest to the commodity has responsibility for executing and maintaining the agreement. This buyer may have been a part of the team that crafted the strategy. Disbanding a team at this point of the process is not unusual. Many of the companies visited during this research assigned another group or manager the task of executing and managing the global agreements.

Use of Information Technology The global engineering and procurement process has benefited directly from information technology support. Project teams can easily retrieve historical purchase data for a commodity from a data warehouse and evaluate volumes given new plant requirements, alleviating some of the data collection burden typically faced during global aggregation efforts. Air Products has been recognized as a world leader in its innovative use of information technology systems.

The operating steering committee, with support from information technology personnel, has placed a number of global sourcing support documents on the Air Products intranet. A sample of these on-line documents include a global engineering and sourcing process outline; a procurement strategy development template; a contract terms and conditions checklist; a global status report on completed, in-process, authorized, and future ideas; a request for proposal template; and currency risk-management guidelines.

Global Engineering and Procurement Risks and Benefits Managers who are most familiar with this process have identified some major benefits and risks to global engineering and procurement. The primary benefit, of course, is material cost savings that are averaging 20% compared to regional agreements. Managers also argue that transaction costs savings, not easily measured like material costs savings, have been realized due to maintaining fewer suppliers and less competitive bidding and analysis over the three-year agreements. Furthermore, engineering design savings are being realized as the process fosters a common set of specifications between design centers. Part number specifications are also becoming better known as they are communicated throughout the company. This allows site users to

order requirements directly from suppliers without procurement involvement, allowing procurement to focus on other value-added activities.

The communication and integration required during a global project has positively changed the perspective of the European design and procurement center. The Europeans now examine initiatives in terms of cost reduction, supplier accountability, and procurement process productivity, which are the three criteria used by the U.S. center. Previously, the European center took a more limited cost perspective.

Global engineering and procurement also presents risks. Shifting from a regional to a global perspective almost always results in the use of supply sources that are unfamiliar to some or all of the company. These agreements often feature a change of supplier, which requires the development of new supply chain relationships. Furthermore, transitioning from one supplier to another, or from one set of part numbers to another, requires time and creates administrative and transaction costs. The company is also increasing dramatically the number of global projects it expects to undertake, which some managers fear will be difficult to support. Finally, it is also not unusual for companies to budget anticipated savings from global contracts when developing capital plans for future facilities. What are the effects if the savings are not realized at the budgeted or anticipated level?

Those involved with the development of global agreements have found that a higher level of learning is required to initiate a process as complex as this one. Global agreements demand greater expense and time to prepare for and negotiate, contain additional terms and conditions, require detailed analysis of supplier proposals, and require a major effort to standardize and communicate specifications between worldwide design and procurement centers.

Even with these issues executive leadership at Air Products considers this process to be one of the key internal processes the company has in place today. This perception has

elevated senior management's expectations, which partly explains the aggressive global sourcing improvement targets established for 2004 and beyond.

Assignment Questions

1. Why was it important for Air Products to develop a global engineering and procurement process? What are the primary objectives of the process?
2. What are some of the disadvantages that Air Products has realized from viewing its European and U.S. procurement and engineering centers as separate operations?
3. Discuss the role of the corporate steering committee as it relates to global engineering and procurement. Discuss the other organizational support mechanisms the company has put in place to support its global process.
4. Describe Air Products global engineering and procurement process.
5. What are some organizational advantages that Air Products has that facilitated the development and execution of a global sourcing process?
6. When forming cross-functional/cross-locational teams, what are some of the planning and team formation issues that Air Products executive managers must consider?
7. What are some of the potential risks that Air Products faces due to its global engineering and procurement process?
8. What will it take for Air Products to achieve its aggressive target in terms of new global contracts?
9. Discuss how Air Products Chemical has used information technology to support its global efforts.
10. Create a job description for the globalization manager's position. Be sure to be explicit about his or her responsibilities.

Exhibit 1
Air Products Nine-Step Global Engineering and Procurement Process

STEP	DESCRIPTION	FEATURES
Step 1	Identify Global Sourcing Opportunities	<ul style="list-style-type: none"> ▪ When identifying specific commodities, the steering committee and globalization manager consider the following criteria: <ul style="list-style-type: none"> • What businesses require the largest cost reductions? • What does Emory currently buy? • How is the commodity currently specified? • How much effort will it take to create a global set of specifications for the commodity?
Step 2	Establish and Charter a Global Sourcing Development Team	<ul style="list-style-type: none"> ▪ Operating steering committee charters cross-functional/cross-locational teams to pursue specific global sourcing projects ▪ Team charter provides the teams with significant responsibility, including proposing the global sourcing strategy
Step 3	Propose Global Sourcing Strategy	<ul style="list-style-type: none"> ▪ Teams validate the original assumptions underlying the project, including current volumes, expected savings, and that the project is a global rather than regional opportunity ▪ Specific team responsibilities during this phase include: <ul style="list-style-type: none"> • Perform detailed fact finding and cost analysis • Identify potential suppliers to bid • Invite potential suppliers to the U.S. to confer and verify expectations and data • Establish timings, milestones, and targets • Document team activities • Use the negotiation check-list from the on-line manual to identify contract issues • Make strategy recommendations • Write and distribute the proposed strategy to purchasing and engineering
Step 4	Develop Requests for Proposal Specifications	<ul style="list-style-type: none"> ▪ Develop the proposal that suppliers receive ▪ The competitive bid model created previously at Emory is a major enabler to this step ▪ Suppliers are asked for suggestions concerning how to improve specifications in the proposal
Step 5	Release Requests for Proposal to Suppliers	<ul style="list-style-type: none"> ▪ Six suppliers on average receive detailed proposals ▪ Suppliers have four weeks to respond ▪ Face-to-face negotiation occurs after analyzing the returned proposals
Step 6	Evaluate Supplier Proposals	<ul style="list-style-type: none"> ▪ Commercial and technical evaluation of supplier proposals occurs ▪ Key output is a short list of technically qualified candidates ▪ Team asks each supplier for best and final prices---Emory considers this part of the

STEP	DESCRIPTION	FEATURES
		negotiation process even though minimum face-to-face negotiation has yet occurred
Step 7	Conduct Face-to-Face Negotiation	<ul style="list-style-type: none"> ▪ A smaller team negotiates directly with suppliers ▪ For complex or large contracts a steering committee member will support the negotiation by becoming involved in person ▪ All negotiations are conducted at U.S. corporate headquarters ▪ Typical issues that are addressed include price, delivery, terms and conditions, support outside the letter of the contract, commitment and accountability, currency issues, and after sale service ▪ Negotiation process lengthens if the team does not achieve its price targets
Step 8	Award Contract	<ul style="list-style-type: none"> ▪ Communicate information about the contract throughout the company via e-mail distribution ▪ Steering committee publicly recognizes the team and informs users of project success ▪ Steering committee maintains a continuous tally of agreements and savings
Step 9	Implement and Manage Global Agreement	<ul style="list-style-type: none"> ▪ Load global agreements into the appropriate corporate systems ▪ Manage the transition to new suppliers (if switching occurred) and new part numbers

Avion, Inc.

Instructor's Guide

This very integrative case should stress some key points clearly to the student:

- Communication with suppliers is perhaps even more critical after contracts are signed
- Changes in volumes and other requirements can alter the assumptions in the original negotiation and cause significant problems
- Buyers and sellers need to be proactive as demand and markets change
- Supplier switching costs are often very high, making the quality of the initial supplier evaluation and selection decision critical
- A natural tendency exists with many buyers to blame suppliers at the first sign of a problem, even when the buyer contributes to or even causes the problem
- Being a good customer entails certain responsibilities, such as treating the supplier ethically, communicating frequently, and working together to prevent or solve problems

Question 1:

Students should identify the different parts of the value chain involved in this situation. Look for the identification of specific departments or groups along with their responsibilities.

Question 2:

Stress that what initially appears to be the problem (i.e., the supplier) may not be the root problem. Furthermore, the initial reaction was to blame the supplier without collecting the required facts.

Students should probe to identify the root cause, which is really a lack of communication on the part of the buyer and changing demand and delivery conditions. It is possible the buyer has a poor forecasting system that created the initial demand figures.

Question 3:

Students should discuss the various costs, activities, and time associated with supplier switching decisions. In this case, switching would be a difficult activity.

Question 4:

Root cause is the cause that once corrected will eliminate the problem.

Question 5:

Suppliers enjoy working with buyers that are good customers just as buyers like to work with good suppliers. Some ways that a buyer can be a good customer include:

- Pays invoices promptly
- Treat the supplier ethically
- Share information early and often
- Work together to pursue new opportunities and solve problems (rather than blame)
- Respect the supplier's need to earn a fair profit
- Do not switch suppliers frequently to chase better prices

Question 6:

Frequent performance measurement can indicate when performance is trending downward or upward. Measurement can also indicate in what area performance is deteriorating (or improving). Measurement helps when investigating the root causes of problems.

Question 7:

Students should understand that suppliers have lead times with their suppliers, and that changes can cause higher costs, production schedule disruptions, and quality problems. At some point schedules should be frozen or locked in with minimal changes.

Question 8:

Reducing lead-time reduces uncertainty and variability. It is generally much easier to forecast for a short time horizon than a longer horizon.

The instructor should look for creativity and quality of ideas with this question. If this is a class discussion question, then the instructor should ask the students for suggestions to reduce the lead times for purchased materials and components. The instructor could create a table, such as the following:

Action or Activity to Reduce Material Ordering Leadtimes	Why the Action or Activity
<ul style="list-style-type: none"> ▪ ▪ ▪ ▪ ▪ ▪ ▪ ▪ ▪ ▪ 	<ul style="list-style-type: none"> ▪ ▪ ▪ ▪ ▪ ▪ ▪ ▪ ▪ ▪

Question 9:

Students should present at least four good reasons to single source a contract. Possible reasons include:

- Combine volumes with a single supplier for greater leverage
- Avoid additional negotiations
- Minimize supplier management and transactions costs
- To pursue a closer relationship with a single supplier, perhaps even an alliance
- Few qualified suppliers exist
- Switching costs may be low, reducing the risk of single sourcing

Question 10:

The instructor should look for a plan that (1) clearly defines specific actions that will be taken and (2) works collaboratively with the supplier to address the issues presented in the case. Some students will argue for a second supplier to alleviate the capacity problems.

Automotive Fabrics – Negotiation Case

This negotiation case has been successfully used in both undergraduate, MBA, and executive education sessions, and is an excellent simulation tool that allows participants to experience a true negotiation. Mock negotiations such as these allow students to experiment with different negotiation strategies, in a “safe setting” where there are no real dollars on the table. In some classes, the students have been informed ahead of time that part of the grade for the assignment will correspond to how good the relative outcome of the negotiation is for their team. This generates a great deal of competition amongst students! The case can be run over two to three one hour class periods. One of the “assignments” from this exercise is to get students to prepare a negotiation preparation paper that details their negotiation plan, their pessimistic, optimistic, and most likely goals for each negotiated item, and their concession strategy.

Students should be assigned to teams of 3 to 4 individuals, and designated as either a buyer or a supplier team. Each team has available to them some common information, as well as proprietary information. It is critical that teams do not inadvertently gain access to the other team’s information, otherwise the negotiation will be patently unfair! Each team’s information is included in the next section.

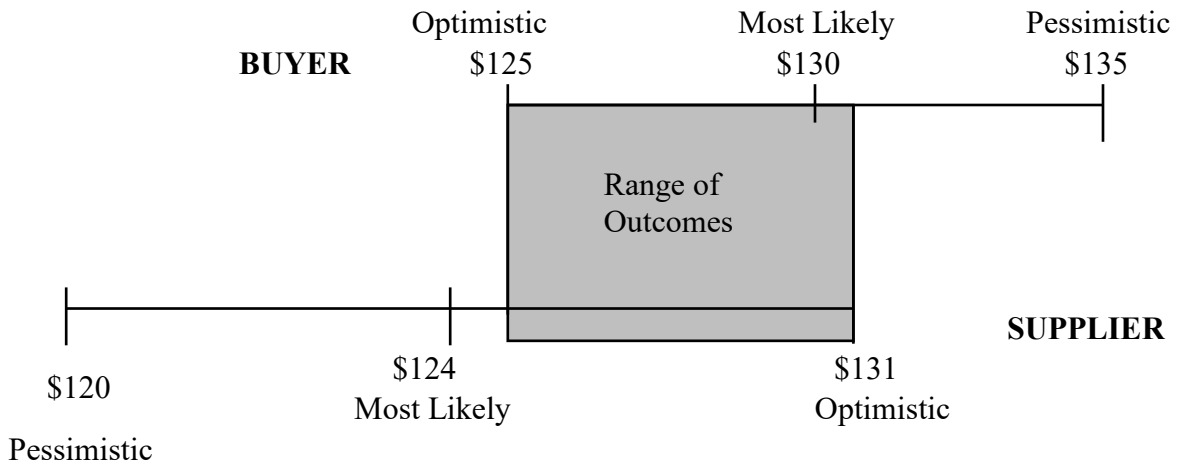
Discussion / Recommendation:

A very important part of the negotiation process is the preparation for the meeting. Because the teams have limited information, they should prepare their negotiation strategy based on the available information. For instance, the buying company should ask themselves if 8% is a reasonable profit margin, given the number of qualified suppliers. There are different permeations of this negotiation that you can use with this case to set the stage:

1. You can assign teams to negotiate with one another according to their preferred supplier and historical relationship. In this case, the assigned negotiating partners are:
 - a. King with Cybaris,
 - b. Queen with Athena,
 - c. Duke with Medusa
 - d. Duchess with Orion
2. The second option involves allowing any buyer to partner with any other single supplier. However, each team is limited to one and only one other partner. This scenario can take a little more time, as buyer teams may go out for RFQ’s, and supplier teams may decide to send “sales people” out to find a preferred partner. Interestingly, although teams are already matched based on their reputations, the authors have observed situations where buyer teams have refused to do business with their initial team.
3. A final scenario which takes the most amount of time (three or more class periods) allows buyers to source from more than one supplier, and suppliers to supply more than one buyer. This leaves open the possibility that one or more buyer/suppliers are “shut out” and do not receive any business. It also opens up the opportunity for “consortia” to develop, reverse auctions, collusion activities, and all sorts of other interesting scenarios! However, it is indeed a totally “free market”.

In general, the supplier team has ample margins (16%), and certain has room to move downwards in their pricing. This is compounded by the fact that their initial price offer was “out of line”, and they are now under pressure to make this sale due to the loss of another major contract. Other negotiable items include the length of the contract, tooling, delivery terms and responsibility for payment, and future engineering changes. However, price always ends up as the stickiest point, and teams have often developed innovative cost savings sharing and productivity agreements in negotiating a contract.

From this perspective, the case has the potential to be a win-win negotiation, but the range of the outcomes are very wide. Generally speaking, teams that spend some time upfront preparing a detailed negotiation strategy tend to do better. In preparing a strategy, each team should be advised to prepare an “outcome map”, which outlines their absolute minimum acceptable outcome, their “ideal” outcome, and their “most likely” outcome. An outcome map should be prepared for every major issue to be negotiated. When the two teams meet, the negotiable range is therefore the area of intersection for the two outcome maps. An example of two possible outcome maps in a negotiation is shown below.



Teams should meet ahead of time and prepare their negotiation strategy, which should also include a “blueprint” for how the meeting should take place. That is, each team should identify what the tactic or strategy should be, the agenda for discussion of the issues, what a contingency plan is if the other party reacts in a certain manner, etc. This strategy should be handed in to the instructor prior to the negotiation. Some teams may even prepare a sample contract prior to the negotiation

Once the teams are assembled for the final negotiation, they should be allowed a maximum of one class period. This places an artificial “deadline” on the negotiation. Each buyer team is assigned a supplier with whom to negotiate a contract. However, the instructor should stipulate an absolute deadline for handing in a contract. This can also result in some interesting “end games” as the deadline approaches.

Once the contracts have been collected, the range of outcomes should be compared to the actual outcomes, including price and who is responsible for paying for tooling. This can be done fairly easily on a spreadsheet, as in the case below. It is also helpful to note the time at which the contract was settled, in order to determine if this had an effect on the result. Once the outcomes are identified, the highest and lowest performing teams should be asked to share their strategies, and how they reached their outcomes. This can often result in some very entertaining and interesting dialogues, especially when parties learn of the different types of deception used in the negotiations! Again, the instructor should emphasize the importance of goal setting and preparation in negotiation. Generally speaking, teams with higher initial objectives tend to perform better than those with lower goals. Some teams may also emerge with true “win-win” negotiations. In such cases, it should also be emphasized that even in win-win outcomes, one party always “wins” more than the other! In some classes, participants have also been videotaped, so that they can note how their “body language” affects the outcome.

Sample Range of Possible Outcomes

King		Cybaris
11.5	LOW	13.0
14.0	HIGH	15.0
13.0	TARGET	14.0

CONTRACT PRICE	13.5	
TOOLING TIME	18000	King
	11:00	

Queen		Athena
12.0	LOW	13.4
15.0	HIGH	15.0
12.5	TARGET	15.0

CONTRACT PRICE	128	
TOOLING TIME	18000	SMP
	11:00	

Duke		Medusa
120	LOW	135
130	HIGH	150
	TARGET	

CONTRACT PRICE	135	
TOOLING TIME	16,200	XYZ
	11:25	

Purchase Negotiation Case: Buyer's Package (King Corp.)

Common Information

This simulation involves negotiating the purchase of an automotive fabric. The following information is common to all groups participating in the negotiation:

- There are four potential manufacturers of textile products. These include the following:
 - Athena Corp. - Annual sales of approx. \$ 40 million dollars, located in Bowling Green, Kentucky..
 - Cybaris Corp. - Annual sales of approx. \$ 50 million dollars, located in Charlotte, NC.
 - Medusa Corp. - Annual sales of approx. \$ 20 million dollars, located in Columbus, OH.
 - Orion Corp. - Annual sales of approx. \$ 35 million dollars, located in Grand Rapids, MI.

- There are four potential purchasers of textile products. These companies are second tier automotive suppliers, who supply the major automotive companies located in Michigan, Ohio, and the Southeast. These companies have all purchased in small quantities from all of the suppliers, and include the following:
 - King Corporation, located in Greenville, SC, has requirements for 150,000 yards of fabric for 2001. The products will be required in 2002 and 2003 according to current plans, and volumes are expected to increase.
 - Queen Corporation, located in Knoxville, TN, requires 250,000 yards of the fabric for 2001, but volumes for 2002 and 2003 are uncertain.
 - Duke Corporation, located in Cleveland, OH, requires 100,000 yards of the product, and production volumes required are expected to increase by 50% or more in 2002 and 2003.
 - Duchess Corporation, located in Lansing, MI, requires 200,000 yards of the product, and volumes are expected to decrease somewhat in 2002 and 2003.

- Prices for similar fabrics are in the \$12.00 to \$15.50 price range per yard.

- All identified suppliers are able to produce to specifications provided by the purchasing company. However, quality performance related to the product can vary greatly.

- Individual cost structures of the firms providing the fabrics can vary significantly.

- Suppliers provide widely different levels of service and technical support.

- All suppliers have to satisfy the same quality and delivery terms, payment terms, and transportation (FOB seller's plant).
- Industry capacity utilization is about 75 percent.
- All purchasing companies have purchased relatively small amounts from all of the suppliers previously, never totaling more than \$100,000 per purchase.

Assignment:

Students will work in small groups and participate in one face-to-face negotiation session. Group size will not exceed 3-4 people for either the buying or selling negotiating team. Each group will develop a brief written negotiating strategy prior to the negotiation which is to be handed in to the instructor, then conduct an actual negotiation session with an assigned buyer/supplier group from the class. (*Note that an agreement may not always occur with an assigned group). Eventually, each pair of groups will develop jointly a written contract that documents the outcome of the negotiation process. The instructor has an information packet for the buyer and the seller which provides additional information required to prepare for and conduct the negotiation. Buyers and sellers can share as little or as much of the information with each other as they desire during the actual negotiation.

Groups must prepare properly before conducting the negotiation. Each group's negotiation strategy should be developed *prior to* the negotiating session. All group members are to participate in the research planning as well as the actual negotiation. Remember, price is not the only variable subject to negotiation. Be creative when crafting your agreement.

Buyer Specific Information - King Corporation

- You are the buyer of fabrics at King Corporation for all corporate divisions and are responsible for supply base optimization. Recently, the focus of this effort has been on reducing the size of the supply base.
- You have received a purchase requisition for a new luxury fabric. Estimated annual requirements for 2001 is 150,000 yards, with a possible doubling or tripling of requirements in 2002 and 2003.
- The fabric is relatively easy to make to your firm's specifications and uses well-established manufacturing technology. However, quality problems can (and do) occur.
- There are a number of acceptable suppliers for the product in the Mid-West and Southeast. However, since your plant is located in Greenville, SC, you have initiated discussions with the closest supplier, Cybaris Corp., located in Charlotte, NC.
- You have obtained unit pricing and design quotes from four interested suppliers, who have provided the following quotes:

	Price / Yard	Redesign Costs	Lead-time
Orion Corp.	\$14.40	\$13,000	5 weeks
Athena Corp.	\$13.80	\$15,000	4 weeks
Medusa Corp.	\$14.20	\$20,000	3 weeks
Cybaris Corp.	\$15.00	\$18,000	2 weeks

The King Corporation estimated cost (including profit) is \$13.00 / yard with design costs totaling approximately \$13,000. The estimated supplier cost structure is as follows:

Direct material	\$	5.20
Direct labor		2.08
Manufacturing overhead (150% of direct labor \$)		
Variable overhead		1.12
Fixed overhead		2.00
Sales, general, and administrative expenses (12% of selling price)		1.56
Profit (8% of selling price)		<u>1.04</u>
Estimated selling price	\$	13.00/yard

- Quality, delivery to schedule, and service are critical to King Corporation. Moreover, because you deliver JIT to the new BMW plant, you are required to maintain QS 9000 certification and tightly control supplier quality and delivery.

- Cost pressures are increasing, and you have been informed that you cannot miss the product introduction date in six months. This has tightened the schedule required to source the fabrics.
- Transportation terms offered by all suppliers are FOB seller's plant, freight collect.
- All suppliers have adequate available capacity currently. However, future capacity requirements may fill up quickly, meaning that they may need to expand production in the future, and will require a solid balance sheet to be able to do so.
- The supplier performance history and current considerations follow:

Orion	Excellent delivery (99% ontime), marginal quality (500 ppm), good technical support, manufacturing capability is good.
Athena	Acceptable quality (300 ppm) , sometimes poor delivery (80% ontime), marginal technical support, capacity uncertain.
Medusa	Good quality (200 ppm) and delivery (95% ontime), capacity uncertain, excellent technical support, financially unstable.
Cybaris	Very good quality (50 ppm), acceptable delivery (93% ontime), poor technical resources and service, stable financially.
- Orion and Medusa provide the best technical support. They provide design suggestions and will assist on technical problems when necessary, and are willing to co-locate technicians temporarily on-site to support their product line.
- Cybaris has the best delivery cycle time, due to their integrated information system which directly links customers to their MRP planning and scheduling system. Athena, however, has indicated their willingness to provided a dedicated sales person to serve your needs.
- You and your team believe that Cybaris can support your needs, but do want to negotiate a better contract. You have therefore asked the Cybaris team to meet and further discuss their quotation.
- Prior to the meeting, your boss told you that a decision had to be reached today. You also have an important appointment in 1 hour with the division vice president that you found out about earlier today. He will be expecting a decision.

Buyer Assignment:

1. Develop a negotiation strategy and plan.
2. What “common ground” do both King Corp. and Cybaris have to negotiate?
3. What is the lowest price you believe you can get, i.e. what you consider to be an “excellent” bargain?
4. What is the highest price per year that you will pay?

Purchase Negotiation Case: Supplier's Package (Cybaris Corp.)

Common Information

This simulation involves negotiating the purchase of an automotive fabric. The following information is common to all groups participating in the negotiation:

- There are four potential manufacturers of automotive fabrics. These include the following:
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 - Cybaris Corp. - Annual sales of approx. \$ 50 million dollars, located in Charlotte, NC.
 - Medusa Corp. - Annual sales of approx. \$ 20 million dollars, located in Columbus, OH.
 - Orion Corp. - Annual sales of approx. \$ 35 million dollars, located in Grand Rapids, MI.

- There are four potential purchasers of textile fabrics. These companies are second tier automotive suppliers who supply the major automotive companies located in Michigan, Ohio, and the Southeast. These companies have all purchased in small quantities from all of the suppliers, and include the following:
 - King Corporation, located in Greenville, SC, has requirements for 150,000 yards of the fabric for 2001. The products will be required in 2002 and 2003 according to current plans, and volumes are expected to increase.
 - Queen Corporation, located in Knoxville, TN, requires 250,000 yards of fabric for 2001, but volumes for 2002 and 2003 are uncertain.
 - Duke Corporation, located in Cleveland, OH, requires 100,000 yards of the product, and production volumes required are expected to increase by 50% or more in 2002 and 2003.
 - Duchess Corporation, located in Lansing, MI, requires 200,000 yards of the product, and volumes are expected to decrease somewhat in 2002 and 2003.

- Prices for similar fabrics are in the \$12.00 to \$15.50 price range per yard.

- All identified suppliers are able to produce to specifications provided by the purchasing company. However, quality performance related to the product can vary greatly.

- Individual cost structures of the firms providing the fabrics parts can vary significantly.

- Suppliers provide widely different levels of service and technical support.

- All suppliers have to satisfy the same quality and delivery terms, payment terms, and transportation (FOB seller's plant).
- Industry capacity utilization is about 75 percent.
- All purchasing companies have purchased relatively small amounts from all of the suppliers previously, never totaling more than \$100,000 per purchase.

Assignment:

Students will work in small groups and participate in one face-to-face negotiation session. Group size will not exceed 3-4 people for either the buying or selling negotiating team. Each group will develop a brief written negotiating strategy prior to the negotiation which is to be handed in to the instructor, then conduct an actual negotiation session with an assigned buyer/supplier group from the class. (*Note that an agreement may not always occur with an assigned group). Eventually, each pair of groups will develop jointly a written contract that documents the outcome of the negotiation process. The instructor has an information packet for the buyer and the seller which provides additional information required to prepare for and conduct the negotiation. Buyers and sellers can share as little or as much of the information with each other as they desire during the actual negotiation.

Groups must prepare properly before conducting the negotiation. Each group's negotiation strategy should be developed *prior to* the negotiating session. All group members are to participate in the research planning as well as the actual negotiation. Remember, price is not the only variable subject to negotiation. Be creative when crafting your agreement.

Supplier Specific Information - Cybaris Corporation

- Cybaris Corporation (your firm) is a major producer of luxury textile fabrics for the automotive industries. Cybaris sells to a wide range of customers, including the largest manufacturer in this industry
- You have been advised that your firm lost a very large order for which you were counting on to meet your corporate sales plan. This order accounted for approximately fifteen percent of your firm's volume in the past year. You currently have enough capacity for 500,000 yards per year. It is therefore very important to obtain new business for 2001 through 2003.
- King Corporation is a firm that you have done business with regularly over time, but orders have generally been less than \$100,000. You have, however, recently quoted on a large order which would represent approximately \$1,450,000 in sales annually. This quote was submitted to King Corporation before you found out that you lost the earlier mentioned order. Your initial quoted price was \$15.00 /yard with total design costs of \$18,000.
- You are aware that your prices are generally higher than your competitors. However, Cybaris's reputation for quality and service are well known in the industry. You have provided similar quotes to the other three companies as well.
- Quality and delivery performance of several of your competitors have been improving steadily over the past several years. You are unsure about how your performance is compared to them.
- Your full costs to produce the textile fabrics quoted to King are \$10.50 / yard with design costs of \$10,000. The profit percentage target of your firm is in the 15-17% range.
- Cost data for the manufacture of the King fabric is presented below:

Direct material	\$ 5.00
Direct labor	1.50
Manufacturing overhead (200% of direct labor \$)	
Variable overhead	0.80
Fixed overhead	2.20
Sales, general, and administrative expenses (8% of selling price)	1.00
Profit (16% of selling price)	<u>2.00</u>
 Selling price	 \$ 12.50

- In addition to the above lost order, you have recently lost a number of other orders to your competition.
- You know that product quality and delivery are extremely important to King. Furthermore, you perceive that King intends to do business with fewer suppliers than in the past.
- The product appears to be a repeat buy for several years, and volume may increase. Therefore, bid options for multiple consecutive years might be considered by King.
- If you don't get this order, other product costs will have to go higher due to unfavorable overhead cost allocation.
- You know the buyer has to place the business almost immediately to meet plant requirements.
- Your firm's management wants you to get this contract to offset the business already lost.
- To obtain the order, you must reach agreement within 1 hour.

Seller Negotiation Questions

1. Develop a negotiation strategy and plan.
2. What common ground do both Cybaris and King have to negotiate on?
3. What is the highest price you believe you can get, i.e. where you have achieved an "excellent" bargain?
4. What is the lowest price per year that you will take?

Purchase Negotiation Case: Buyer's Package (Queen Corp.)

Common Information

This simulation involves negotiating the purchase of an automotive fabric. The following information is common to all groups participating in the negotiation:

- There are four potential manufacturers of textile products. These include the following:
 - Athena Corp. - Annual sales of approx. \$ 40 million dollars, located in Bowling Green, Kentucky..
 - Cybaris Corp. - Annual sales of approx. \$ 50 million dollars, located in Charlotte, NC.
 - Medusa Corp. - Annual sales of approx. \$ 20 million dollars, located in Columbus, OH.
 - Orion Corp. - Annual sales of approx. \$ 35 million dollars, located in Grand Rapids, MI.

- There are four potential purchasers of textile products. These companies are second tier automotive suppliers who supply the major automotive companies located in Michigan, Ohio, and the Southeast. These companies have all purchased in small quantities from all of the suppliers, and include the following:
 - King Corporation, located in Greenville, SC, has requirements for 150,000 yards of fabric for 2001. The products will be required in 2002 and 2003 according to current plans, and volumes are expected to increase.
 - Queen Corporation, located in Knoxville, TN, requires 250,000 yards of the fabric for 2001, but volumes for 2002 and 2003 are uncertain.
 - Duke Corporation, located in Cleveland, OH, requires 100,000 yards of the product, and production volumes required are expected to increase by 50% or more in 2002 and 2003.
 - Duchess Corporation, located in Lansing, MI, requires 200,000 yards of the product, and volumes are expected to decrease somewhat in 2002 and 2003.

- Prices for similar fabrics are in the \$12.00 to \$15.50 price range per yard.

- All identified suppliers are able to produce to specifications provided by the purchasing company. However, quality performance related to the product can vary greatly.

- Individual cost structures of the firms providing the fabrics can vary significantly.

- Suppliers provide widely different levels of service and technical support.

- All suppliers have to satisfy the same quality and delivery terms, payment terms, and transportation (FOB seller's plant).
- Industry capacity utilization is about 75 percent.
- All purchasing companies have purchased relatively small amounts from all of the suppliers previously, never totaling more than \$100,000 per purchase.

Assignment:

Students will work in small groups and participate in one face-to-face negotiation session. Group size will not exceed 3-4 people for either the buying or selling negotiating team. Each group will develop a brief written negotiating strategy prior to the negotiation which is to be handed in to the instructor, then conduct an actual negotiation session with an assigned buyer/supplier group from the class. (*Note that an agreement may not always occur with an assigned group). Eventually, each pair of groups will develop jointly a written contract that documents the outcome of the negotiation process. The instructor has an information packet for the buyer and the seller which provides additional information required to prepare for and conduct the negotiation. Buyers and sellers can share as little or as much of the information with each other as they desire during the actual negotiation.

Groups must prepare properly before conducting the negotiation. Each group's negotiation strategy should be developed *prior to* the negotiating session. All group members are to participate in the research planning as well as the actual negotiation. Remember, price is not the only variable subject to negotiation. Be creative when crafting your agreement.

Buyer Specific Information - Queen Corporation

- You are the buyer of fabrics at Queen Corporation for all corporate divisions and are responsible for supply base optimization. Recently, the focus of this effort has been on developing key partnerships with suppliers in order to reduce cost and improve quality. This initiative has largely been driven by your major customer, Nissan Corp., which is located in Smyrna, TN.
- You have received a purchase requisition for a new luxury automotive fabric. Estimated annual requirements for 2001 is 250,000 yards. The product you are producing is for a model year that is expected to be discontinued within a couple of years. However, Nissan purchasing managers have indicated that they will be willing to offer Queen a first bid on a new model being introduced next year, if they are able to meet their target cost objectives and improve quality. In order to meet these objectives, you will need to source the fabrics at a cost of \$12.60 per yard.
- The fabric is relatively easy to make to your firm’s specifications and uses well-established manufacturing technology. However, quality problems can (and do) occur.
- There are a number of acceptable suppliers for the product in the Mid-West and Southeast. However, since your plant is located in Knoxville, TN, you have initiated discussions with the closest supplier, Athena Corp., located in Bowling Green, KY.
- You have obtained unit pricing and design quotes from four interested suppliers, who have provided the following quotes:

	Price / Yard	Redesign Costs	Lead-time
Orion Corp.	\$14.40	\$13,000	5 weeks
Athena Corp.	\$13.80	\$15,000	4 weeks
Medusa Corp.	\$14.20	\$20,000	3 weeks
Cybaris Corp.	\$15.00	\$18,000	2 weeks

- The Queen Corporation estimated cost of manufacture (including profit) is \$13.00/ yard with design costs totaling approximately \$13,000. The estimated supplier cost structure is as follows:

Direct material	\$	5.20
Direct labor		2.08
Manufacturing overhead (150% of direct labor \$)		
Variable overhead		1.12
Fixed overhead		2.00
Sales, general, and administrative expenses (12% of selling price)		1.56
Profit (8% of selling price)		<u>1.04</u>
Estimated selling price	\$	13.00

- Quality, delivery to schedule, and service are critical to the Queen Corporation. Moreover, because you deliver JIT to the Nissan plant in Smyrna, you are required to tightly control supplier quality and delivery to prevent line shutdowns.
- Cost pressures are increasing. Your internal accounting group has determined that a target cost of \$12.60 per yard is necessary to meet Nissan's target cost objectives for your product. Nissan is also requiring a 4% annual cost reduction objective, with quality to improve to 100 ppm..
- Transportation terms offered by all suppliers are FOB seller's plant, freight collect.
- All suppliers have adequate available capacity currently. However, future capacity requirements may fill up quickly, meaning that they may need to expand production in the future, and will require a solid balance sheet to be able to do so.
- The supplier performance history and current considerations follow:
 - Orion Excellent delivery (99% ontime), marginal quality (500 ppm), good technical support, manufacturing capability is good.
 - Athena Acceptable quality (300 ppm) , sometimes poor delivery (80% ontime), marginal technical support, capacity uncertain.
 - Medusa Good quality (200 ppm) and delivery (95% ontime), capacity uncertain, excellent technical support, financially unstable.
 - Cybaris Very good quality (50 ppm), acceptable delivery (93% ontime), poor technical resources and service, stable financially.

- Orion and Medusa provide the best technical support. They provide design suggestions and will assist on technical problems when necessary, and are willing to co-locate technicians temporarily on-site to support their product line.
- Cybaris has the best delivery cycle time, due to their integrated information system which directly links customers to their MRP planning and scheduling system. Athena, however, has indicated their willingness to provide a dedicated sales person to serve your needs.
- You and your team believe that Athena can support your needs, but do want to negotiate a better contract. You have therefore asked the Athena sales team to meet and further discuss their quotation.
- Prior to the meeting, your boss told you that a decision had to be reached today. You also have an important appointment in 1 hour with the division vice president that you found out about earlier today. He will be expecting a decision.

Buyer Assignment:

1. Develop a negotiation strategy and plan.
2. What “common ground” do both Queen Corp. and Athena have to negotiate?
3. What is the lowest price you believe you can get, i.e. what you consider to be an “excellent” bargain?
4. What is the highest price per year that you will pay?

Purchase Negotiation Case: Supplier's Package (Athena Corp.)

Common Information

This simulation involves negotiating the purchase of an automotive fabric. The following information is common to all groups participating in the negotiation:

- There are four potential manufacturers of textile products. These include the following:
 - Athena Corp. - Annual sales of approx. \$ 40 million dollars, located in Bowling Green, Kentucky.
 - Cybaris Corp. - Annual sales of approx. \$ 50 million dollars, located in Charlotte, NC.
 - Medusa Corp. - Annual sales of approx. \$ 20 million dollars, located in Columbus, OH.
 - Orion Corp. - Annual sales of approx. \$ 35 million dollars, located in Grand Rapids, MI.

- There are four potential purchasers of textile products. These companies are second tier automotive suppliers, who supply the major automotive companies located in Michigan, Ohio, and the Southeast. These companies have all purchased in small quantities from all of the suppliers, and include the following:
 - King Corporation, located in Greenville, SC, has requirements for 150,000 yards of the fabric for 2001. The products will be required in 2002 and 2003 according to current plans, and volumes are expected to increase.
 - Queen Corporation, located in Knoxville, TN, requires 250,000 yards of the fabric for 2001, but volumes for 2002 and 2003 are uncertain.
 - Duke Corporation, located in Cleveland, OH, requires 100,000 yards of the product, and production volumes required are expected to increase by 50% or more in 2002 and 2003.
 - Duchess Corporation, located in Lansing, MI, requires 200,000 yards of the product, and volumes are expected to decrease somewhat in 2002 and 2003.

- Prices for similar textile fabrics are in the \$12.00 to \$15.50 price range per yard.

- All identified suppliers are able to produce to specifications provided by the purchasing company. However, quality performance related to the product can vary greatly.

- Individual cost structures of the firms providing the fabrics can vary significantly.

- Suppliers provide widely different levels of service and technical support.

- All suppliers have to satisfy the same quality and delivery terms, payment terms, and transportation (FOB seller's plant).
- Industry capacity utilization is about 75 percent.
- All purchasing companies have purchased relatively small amounts from all of the suppliers previously, never totaling more than \$100,000 per purchase.

Assignment:

Students will work in small groups and participate in one face-to-face negotiation session. Group size will not exceed 3-4 people for either the buying or selling negotiating team. Each group will develop a brief written negotiating strategy prior to the negotiation which is to be handed in to the instructor, then conduct an actual negotiation session with an assigned buyer/supplier group from the class. (*Note that an agreement may not always occur with an assigned group). Eventually, each pair of groups will develop jointly a written contract that documents the outcome of the negotiation process. The instructor has an information packet for the buyer and the seller which provides additional information required to prepare for and conduct the negotiation. Buyers and sellers can share as little or as much of the information with each other as they desire during the actual negotiation.

Groups must prepare properly before conducting the negotiation. Each group's negotiation strategy should be developed *prior to* the negotiating session. All group members are to participate in the research planning as well as the actual negotiation. Remember, price is not the only variable subject to negotiation. Be creative when crafting your agreement.

Supplier Specific Information - Athena Corporation

- Athena Corporation (your firm) is a major producer of luxury fabrics to the automotive industries. Athena sells to a wide range of customers, and is devoted to developing long-term customer relationships.
- Athena's primary advantage in the past has been its status as a low cost producer, due to its comparatively low non-union labor rates. However, the company has recognized that quality and delivery problems have surfaced in the past. In order to improve in these areas, accounting has decided to increase margins on all new business to 22%, in order to re-invest in technical support training, manufacturing planning and control systems, and update aging equipment. It is therefore very important to obtain new business for 2001 through 2003 which meets these objectives. Currently, you have enough capacity for 350,000 additional yards per year.
- Queen Corporation is a firm that you have done business with regularly over time, but orders have generally been less than \$100,000. You have, however, recently quoted on a large order which would represent approximately \$1,690,000 in sales annually. Your initial quoted price was \$13.80 / yard with total design costs of \$18,000.
- You are aware that your prices are generally lower than your competitors. However, Athena's reputation for delivery has been significantly worse compared to other competitors in the industry. You have provided similar quotes to the other three companies as well.
- Quality and delivery performance of several of your competitors have been improving steadily over the past several years. You are unsure about how your specific performance is compared to them.
- Your full costs to produce the fabrics quoted to Queen are \$10.20 / yard with design costs of \$15,000. The profit percentage target of your firm is in the 20-22% range.
- Cost data for the manufacture of the Queen fabric manufacture is presented below:

Direct material	\$	4.80
Direct labor		1.80
Manufacturing overhead (150% of direct labor \$)		
Variable overhead		0.72
Fixed overhead		1.98
Sales, general, and administrative expenses (6.9% of selling price)		0.90
Profit (22% of selling price)		<u>2.88</u>

Selling price	\$	13.08
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- You know that product quality and cost are extremely important to Queen. Furthermore, you perceive that Queen intends to do business with fewer suppliers than in the past, and is under pressure from their customers to reduce cost.
- The product's life cycle is uncertain. Therefore, bid options for multiple consecutive years may or may not be considered by Queen.
- If you don't get this order, there is the potential that you will be locked out of future business with Queen, who is seeking to co-develop a number of new model platforms with Nissan.
- You know the buyer has to place the business almost immediately to meet plant requirements.
- Your firm's management wants you to get this contract to increase margins and generate future business opportunities.
- To obtain the order, you must reach agreement within 1 hour.

Seller Negotiation Questions

1. Develop a negotiation strategy and plan.
2. What common ground do both Athena and Queen have to negotiate on?
3. What is the highest price you believe you can get, i.e. where you have achieved an "excellent" bargain?
4. What is the lowest price per year that you will take?

Purchase Negotiation Case: Buyer's Package (Duke Corp.)

Common Information

This simulation involves negotiating the purchase of an automotive fabric. The following information is common to all groups participating in the negotiation:

- There are four potential manufacturers of textile products. These include the following:
 - Athena Corp. - Annual sales of approx. \$ 40 million dollars, located in Bowling Green, Kentucky.
 - Cybaris Corp. - Annual sales of approx. \$ 50 million dollars, located in Charlotte, NC.
 - Medusa Corp. - Annual sales of approx. \$ 20 million dollars, located in Columbus, OH.
 - Orion Corp. - Annual sales of approx. \$ 35 million dollars, located in Grand Rapids, MI.

- There are four potential purchasers of textile products. These companies are second tier automotive suppliers, who supply the major automotive companies located in Michigan, Ohio, and the Southeast. These companies have all purchased in small quantities from all of the suppliers, and include the following:
 - King Corporation, located in Greenville, SC, has requirements for 150,000 yards of fabric for 2001. The products will be required in 2002 and 2003 according to current plans, and volumes are expected to increase.
 - Queen Corporation, located in Knoxville, TN, requires 250,000 yards of fabric for 2001, but volumes for 2002 and 2003 are uncertain.
 - Duke Corporation, located in Cleveland, OH, requires 100,000 yards of the product, and production volumes required are expected to increase by 50% or more in 2002 and 2003.
 - Duchess Corporation, located in Lansing, MI, requires 200,000 yards of the product, and volumes are expected to decrease somewhat in 2002 and 2003.

- Prices for similar fabrics are in the \$12.00 to \$15.50 price range per yard.

- All identified suppliers are able to produce to specifications provided by the purchasing company. However, quality performance related to the product can vary greatly.

- Individual cost structures of the firms providing fabrics can vary significantly.

- Suppliers provide widely different levels of service and technical support.

- All suppliers have to satisfy the same quality and delivery terms, payment terms, and transportation (FOB seller's plant).

- Industry capacity utilization is about 75 percent.

- All purchasing companies have purchased relatively small amounts from all of the suppliers previously, never totaling more than \$100,000 per purchase.

Assignment:

Students will work in small groups and participate in one face-to-face negotiation session. Group size will not exceed 3-4 people for either the buying or selling negotiating team. Each group will develop a brief written negotiating strategy prior to the negotiation which is to be handed in to the instructor, then conduct an actual negotiation session with an assigned buyer/supplier group from the class. (*Note that an agreement may not always occur with an assigned group). Eventually, each pair of groups will develop jointly a written contract that documents the outcome of the negotiation process. The instructor has an information packet for the buyer and the seller which provides additional information required to prepare for and conduct the negotiation. Buyers and sellers can share as little or as much of the information with each other as they desire during the actual negotiation.

Groups must prepare properly before conducting the negotiation. Each group's negotiation strategy should be developed *prior to* the negotiating session. All group members are to participate in the research planning as well as the actual negotiation. Remember, price is not the only variable subject to negotiation. Be creative when crafting your agreement.

Buyer Specific Information - Duke Corporation

- You are the buyer of luxury textile fabrics at Duke Corporation for all corporate divisions and are responsible for supply base optimization. Recently, the focus of this effort has been on increasing volume and market share for new business being generated by your primary customer, DaimlerChrysler Corporation. Duke is a relatively small player in the second tier automotive supply chain, but has grown rapidly due to its innovative product line being introduced in recent model years. In order to grow and become a single source for DaimlerChrysler, Duke will need to generate increasing margins on new business in order to invest in new plant and equipment. One major initiative aimed at achieving this objective has been to reduce the cost of commodity-like materials such as textile fibers/fabrics through single sourcing, while maintaining a technical advantage.
- You have received a purchase requisition for a new production item, a luxury textile fabric. Estimated annual requirements for 2001 is 100,000 yards. The product you are producing is for a DaimlerChrysler model year that is expected to be double or triple in the next two years. DaimlerChrysler has emphasized that they value supplier-generated cost savings suggestions and technological solutions in awarding new future business.
- The fabric is relatively easy to make to your firm’s specifications and uses well-established manufacturing technology. However, quality problems can (and do) occur.
- There are a number of acceptable suppliers for the product in the Mid-West and Southeast. However, since your plant is located in Cleveland, OH, you have initiated discussions with the closest supplier, Medusa Corp., located in Columbus, OH.
- You have obtained unit pricing and design quotes from four interested suppliers, who have provided the following quotes:

	Price / Yard	Redesign Costs	Lead-time
Orion Corp.	\$14.40	\$13,000	5 weeks
Athena Corp.	\$13.80	\$15,000	4 weeks
Medusa Corp.	\$14.20	\$20,000	3 weeks
Cybaris Corp.	\$15.00	\$18,000	2 weeks

- The Duke Corporation estimated cost of manufacture (including profit) is \$13.00 / yard with design costs totaling approximately \$13,000. The estimated supplier cost structure is as follows:

Direct material	\$	5.20
Direct labor		2.08
Manufacturing overhead (150% of direct labor \$)		

Variable overhead	1.12
Fixed overhead	2.00
Sales, general, and administrative expenses (12% of selling price)	1.56
Profit (8% of selling price)	<u>1.04</u>
Estimated selling price	\$ 13.00

- Quality, delivery to schedule, and technical support are critical to the Duke Corporation. Moreover, because you deliver JIT to the DaimlerChrysler plant in Toledo, you are required to tightly control supplier quality and delivery to prevent line shutdowns.
- Cost pressures are increasing. As mentioned, DaimlerChrysler is emphasizing cost savings suggestions. However, it has been willing to pay a premium for new technological solutions that are designed to improve customer satisfaction. Duke has frequently worked with DaimlerChrysler engineers in developing such new technology, and these engineers have also discussed the possibility of involving suppliers to a greater extent.
- Transportation terms offered by all suppliers are FOB seller's plant, freight collect.
- All suppliers have adequate available capacity currently. However, future capacity requirements may fill up quickly, meaning that suppliers may need to expand production in the future, and will require a solid balance sheet to be able to do so.
- The supplier performance history and current considerations follow:
 - Orion Excellent delivery (99% ontime), marginal quality (500 ppm), good technical support, manufacturing capability is good.
 - Athena Acceptable quality (300 ppm) , sometimes poor delivery (80% ontime), marginal technical support, capacity uncertain.
 - Medusa Good quality (200 ppm) and delivery (95% ontime), capacity uncertain, excellent technical support, financially unstable.
 - Cybaris Very good quality (50 ppm), acceptable delivery (93% ontime), poor technical resources and service, stable financially.

- Orion and Medusa provide the best technical support. They provide design suggestions and will assist on technical problems when necessary, and are willing to co-locate technicians temporarily on-site to support their product line.
- Cibaris has the best delivery cycle time, due to their integrated information system which directly links customers to their MRP planning and scheduling system. Athena, however, has indicated their willingness to provide a dedicated sales person to serve your needs.
- You and your team believe that Medusa can support your needs, but do want to negotiate a better contract. You have therefore asked the Medusa sales team to meet and further discuss their quotation.
- Prior to the meeting, your boss told you that a decision had to be reached today. You also have an important appointment in 1 hour with the division vice president that you found out about earlier today. He will be expecting a decision.

Buyer Assignment:

1. Develop a negotiation strategy and plan.
2. What “common ground” do both Duke Corp. and Medusa have to negotiate?
3. What is the lowest price you believe you can get, i.e. what you consider to be an “excellent” bargain?
4. What is the highest price per year that you will pay?

Purchase Negotiation Case: Supplier's Package (Medusa Corp.)

Common Information

This simulation involves negotiating the purchase of an automotive fabric. The following information is common to all groups participating in the negotiation:

- There are four potential manufacturers of automotive fabrics. These include the following:
 - Athena Corp. - Annual sales of approx. \$ 40 million dollars, located in Bowling Green, Kentucky.
 - Cybaris Corp. - Annual sales of approx. \$ 50 million dollars, located in Charlotte, NC.
 - Medusa Corp. - Annual sales of approx. \$ 20 million dollars, located in Columbus, OH.
 - Orion Corp. - Annual sales of approx. \$ 35 million dollars, located in Grand Rapids, MI.

- There are four potential purchasers of textile fabrics. These companies are second tier automotive suppliers who supply the major automotive companies located in Michigan, Ohio, and the Southeast. These companies have all purchased in small quantities from all of the suppliers, and include the following:
 - King Corporation, located in Greenville, SC, has requirements for 150,000 yards of fabric for 2001. The products will be required in 2002 and 2003 according to current plans, and volumes are expected to increase.
 - Queen Corporation, located in Knoxville, TN, requires 250,000 yards of the product for 2001, but volumes for 2002 and 2003 are uncertain.
 - Duke Corporation, located in Cleveland, OH, requires 100,000 yards of the product, and production volumes required are expected to increase by 50% or more in 2002 and 2003.
 - Duchess Corporation, located in Lansing, MI, requires 200,000 yards of the product, and volumes are expected to decrease somewhat in 2002 and 2003.

- Prices for similar automotive fabrics are in the \$12.00 to \$15.50 price range per yard.

- All identified suppliers are able to produce to specifications provided by the purchasing company. However, quality performance related to the product can vary greatly.

- Individual cost structures of the firms providing the automotive fabric can vary significantly.

- Suppliers provide widely different levels of service and technical support.
- All suppliers have to satisfy the same quality and delivery terms, payment terms, and transportation (FOB seller's plant).
- Industry capacity utilization is about 75 percent.
- All purchasing companies have purchased relatively small amounts from all of the suppliers previously, never totaling more than \$100,000 per purchase.

Assignment:

Students will work in small groups and participate in one face-to-face negotiation session. Group size will not exceed 3-4 people for either the buying or selling negotiating team. Each group will develop a brief written negotiating strategy prior to the negotiation which is to be handed in to the instructor, then conduct an actual negotiation session with an assigned buyer/supplier group from the class. (*Note that an agreement may not always occur with an assigned group). Eventually, each pair of groups will develop jointly a written contract that documents the outcome of the negotiation process. The instructor has an information packet for the buyer and the seller which provides additional information required to prepare for and conduct the negotiation. Buyers and sellers can share as little or as much of the information with each other as they desire during the actual negotiation.

Groups must prepare properly before conducting the negotiation. Each group's negotiation strategy should be developed *prior to* the negotiating session. All group members are to participate in the research planning as well as the actual negotiation. Remember, price is not the only variable subject to negotiation. Be creative when crafting your agreement.

Supplier Specific Information - Medusa Corporation

- Medusa Corporation (your firm) is a small, family-owned producer of luxury automotive fabrics to the automotive industries. Founded by a former DaimlerChrysler manufacturing engineer, Medusa sells primarily to the automotive industry, and has hired a number of engineers from the Big Three.
- Medusa's primary advantage in the past has been its technical expertise. It's technical staff have developed a patented process for cutting and forming performance textile fabrics. However, the company has recognized that delivery problems have surfaced in the past, due to the lack of a formal manufacturing and capacity planning system. As with many smaller enterprises, the company has taken on substantial debt, in order to expand facilities, increase hiring, and upgrade software systems. Financial planners have determined that all new business must include a 15% profit margin to effectively serve this debt. It is therefore very important to obtain new business for 2001 through 2003 which meets these objectives. Currently, you have enough capacity for 175,500 additional yards per year, pending additional capacity expansion next year.
- Duke Corporation is a firm that you have done business with regularly over time, but orders have generally been less than \$100,000. You have, however, recently quoted on a large order which would represent approximately \$1,282,000 in sales annually. Your initial quoted price was \$1.41 / yard with total designing costs of \$20,000.
- You are aware that your prices are comparable to your competitors. However, Medusa's reputation for quality, delivery, and technical support are well known in the industry. You have provided similar quotes to the other three companies as well.
- Quality and delivery performance of several of your competitors have been improving steadily over the past several years. You are unsure about how your performance is compared to them.
- Your full costs to produce specified fabric quoted to Duke are \$10.92 / yard with design costs of \$20,000. The profit percentage target of your firm is in the 13-17% range.
- Cost data for the manufacture of the Duke textile order is presented below:

Direct material		\$ 5.40
Direct labor		2.00
Manufacturing overhead (120% of direct labor \$)		
Variable overhead		0.60
Fixed overhead		1.80
Sales, general, and administrative expenses (9% of selling price)		1.12
Profit (13% of selling price)		<u>1.70</u>
Selling price	\$	12.62

- You know that product quality and cost are extremely important to Duke. Furthermore, you perceive that Duke intends to do business with fewer suppliers than in the past, and is seeking to expand its business with DaimlerChrysler Corp. (its major customer) in the future.
- The product appears to be a repeat buy for several years, and volume may increase. Therefore, bid options for multiple consecutive years might be considered by Duke.
- If you don't get this order, there is the potential that you will be locked out of future business with Duke, who is seeking to co-develop a number of new model platforms with DaimlerChrysler.
- You know the buyer has to place the business almost immediately to meet plant requirements.
- Your firm's management wants you to get this contract to support growth and increase market share.
- To obtain the order, you must reach agreement within 1 hour.

Seller Negotiation Questions

1. Develop a negotiation strategy and plan.
2. What common ground do both Medusa and Duke have to negotiate on?
3. What is the highest price you believe you can get, i.e. where you have achieved an "excellent" bargain?
4. What is the lowest price per year that you will take?

Purchase Negotiation Case: Buyer's Package (Duchess Corp.)

Common Information

This simulation involves negotiating the purchase of an automotive fabric. The following information is common to all groups participating in the negotiation:

- There are four potential manufacturers of the luxury automotive fabrics. These include the following:
 - Athena Corp. - Annual sales of approx. \$ 40 million dollars, located in Bowling Green, Kentucky..
 - Cybaris Corp. - Annual sales of approx. \$ 50 million dollars, located in Charlotte, NC.
 - Medusa Corp. - Annual sales of approx. \$ 20 million dollars, located in Columbus, OH.
 - Orion Corp. - Annual sales of approx. \$ 35 million dollars, located in Grand Rapids, MI.

- There are four potential purchasers of textile fabrics. These companies are second tier automotive suppliers who supply the major automotive companies located in Michigan, Ohio, and the Southeast. These companies have all purchased in small quantities from all of the suppliers, and include the following:
 - King Corporation, located in Greenville, SC, has requirements for 150,000 yards of the fabric for 2001. The products will be required in 2002 and 2003 according to current plans, and volumes are expected to increase.
 - Queen Corporation, located in Knoxville, TN, requires 250,000 yards of the fabric for 2001, but volumes for 2002 and 2003 are uncertain.
 - Duke Corporation, located in Cleveland, OH, requires 100,000 yards of the product, and production volumes required are expected to increase by 50% or more in 2002 and 2003.
 - Duchess Corporation, located in Lansing, MI, requires 200,000 yards of the product, and volumes are expected to decrease somewhat in 2002 and 2003.

- Prices for similar automotive fabrics are in the \$12.00 to \$15.50 price range per yard.

- All identified suppliers are able to produce to specifications provided by the purchasing company. However, quality performance related to the product can vary greatly.

- Individual cost structures of the firms providing the automotive fabrics can vary significantly.

- Suppliers provide widely different levels of service and technical support.

- All suppliers have to satisfy the same quality and delivery terms, payment terms, and transportation (FOB seller's plant).
- Industry capacity utilization is about 75 percent.
- All purchasing companies have purchased relatively small amounts from all of the suppliers previously, never totaling more than \$100,000 per purchase.

Assignment:

Students will work in small groups and participate in one face-to-face negotiation session. Group size will not exceed 3-4 people for either the buying or selling negotiating team. Each group will develop a brief written negotiating strategy prior to the negotiation which is to be handed in to the instructor, then conduct an actual negotiation session with an assigned buyer/supplier group from the class. (*Note that an agreement may not always occur with an assigned group). Eventually, each pair of groups will develop jointly a written contract that documents the outcome of the negotiation process. The instructor has an information packet for the buyer and the seller which provides additional information required to prepare for and conduct the negotiation. Buyers and sellers can share as little or as much of the information with each other as they desire during the actual negotiation.

Groups must prepare properly before conducting the negotiation. Each group's negotiation strategy should be developed *prior to* the negotiating session. All group members are to participate in the research planning as well as the actual negotiation. Remember, price is not the only variable subject to negotiation. Be creative when crafting your agreement.

Variable overhead		1.12
Fixed overhead		2.00
Sales, general, and administrative expenses (12% of selling price)		1.56
Profit (8% of selling price)		<u>1.04</u>
Estimated selling price	\$	13.00

- Quality, delivery to schedule, and technical support are critical to the Duchess Corporation. Moreover, because you deliver JIT to the GM plant in Lansing, you are required to tightly control supplier quality and delivery to prevent line shutdowns.
- Cost pressures are increasing. As mentioned, GM is emphasizing continued cost reductions. They are also seeking to outsource a larger portion of their operations currently done internally, and are likely to award such business on cost. They have set an objective of 5% cost reductions per year for the next three years for all major second tier suppliers.
- Transportation terms offered by all suppliers are FOB seller's plant, freight collect.
- All suppliers have adequate available capacity currently. However, future capacity requirements may fill up quickly, meaning that suppliers may need to expand production in the future, and will require a solid balance sheet to be able to do so.
- The supplier performance history and current considerations follow:

Orion	Excellent delivery (99% ontime), marginal quality (500 ppm), good technical support, manufacturing capability is good.
Athena	Acceptable quality (300 ppm) , sometimes poor delivery (80% ontime), marginal technical support, capacity uncertain.
Medusa	Good quality (200 ppm) and delivery (95% ontime), capacity uncertain, excellent technical support, financially unstable.
Cybaris	Very good quality (50 ppm), acceptable delivery (93% ontime), poor technical resources and service, stable financially.
- Orion and Medusa provide the best technical support. They provide design suggestions and will assist on technical problems when necessary, and are willing to co-locate technicians temporarily on-site to support their product line.

- Cibaris has the best delivery cycle time, due to their integrated information system which directly links customers to their MRP planning and scheduling system. Athena, however, has indicated their willingness to provide a dedicated sales person to serve your needs.
- You and your team believe that Orion can support your needs, but do want to negotiate a better contract. You have therefore asked the Orion sales team to meet and further discuss their quotation.
- Prior to the meeting, your boss told you that a decision had to be reached today. You also have an important appointment in 1 hour with the division vice president that you found out about earlier today. He will be expecting a decision.

Buyer Assignment:

1. Develop a negotiation strategy and plan.
2. What “common ground” do both Duchess Corp. and Orion Corp. have to negotiate?
3. What is the lowest price you believe you can get, i.e. what you consider to be an “excellent” bargain?
4. What is the highest price per year that you will pay?

Purchase Negotiation Case: Supplier's Package (Orion Corp.)

Common Information

This simulation involves negotiating the purchase of an automotive fabric. The following information is common to all groups participating in the negotiation:

- There are four potential manufacturers of luxury textile fabrics. These include the following:
 - Athena Corp. - Annual sales of approx. \$ 40 million dollars, located in Bowling Green, Kentucky.
 - Cybaris Corp. - Annual sales of approx. \$ 50 million dollars, located in Charlotte, NC.
 - Medusa Corp. - Annual sales of approx. \$ 20 million dollars, located in Columbus, OH.
 - Orion Corp. - Annual sales of approx. \$ 35 million dollars, located in Grand Rapids, MI.

- There are four potential purchasers of textile products. These companies are second tier automotive suppliers who supply the major automotive companies located in Michigan, Ohio, and the Southeast. These companies have all purchased in small quantities from all of the suppliers, and include the following:
 - King Corporation, located in Greenville, SC, has requirements for 150,000 yards of the fabric for 2001. The products will be required in 2002 and 2003 according to current plans, and volumes are expected to increase.
 - Queen Corporation, located in Knoxville, TN, requires 250,000 yards of fabric for 2001, but volumes for 2002 and 2003 are uncertain.
 - Duke Corporation, located in Cleveland, OH, requires 100,000 yards of the product, and production volumes required are expected to increase by 50% or more in 2002 and 2003.
 - Duchess Corporation, located in Lansing, MI, requires 200,000 yards of the product, and volumes are expected to decrease somewhat in 2002 and 2003.

- Prices for similar textile fabrics are in the \$12.00 to \$15.50 price range per yard.

- All identified suppliers are able to produce to specifications provided by the purchasing company. However, quality performance related to the product can vary greatly.

- Individual cost structures of the firms providing the automotive fabric can vary significantly.

- Suppliers provide widely different levels of service and technical support.

- All suppliers have to satisfy the same quality and delivery terms, payment terms, and transportation (FOB seller's plant).
- Industry capacity utilization is about 75 percent.
- All purchasing companies have purchased relatively small amounts from all of the suppliers previously, never totaling more than \$100,000 per purchase.

Assignment:

Students will work in small groups and participate in one face-to-face negotiation session. Group size will not exceed 3-4 people for either the buying or selling negotiating team. Each group will develop a brief written negotiating strategy prior to the negotiation which is to be handed in to the instructor, then conduct an actual negotiation session with an assigned buyer/supplier group from the class. (*Note that an agreement may not always occur with an assigned group). Eventually, each pair of groups will develop jointly a written contract that documents the outcome of the negotiation process. The instructor has an information packet for the buyer and the seller which provides additional information required to prepare for and conduct the negotiation. Buyers and sellers can share as little or as much of the information with each other as they desire during the actual negotiation.

Groups must prepare properly before conducting the negotiation. Each group's negotiation strategy should be developed *prior to* the negotiating session. All group members are to participate in the research planning as well as the actual negotiation. Remember, price is not the only variable subject to negotiation. Be creative when crafting your agreement.

Supplier Specific Information - Orion Corporation

- Orion Corporation (your firm) is a major producer of luxury fabrics to the automotive industries. Orion sells to a wide range of customers, including the largest manufacturer in this industry
- You have been advised that your firm lost a very large order for fabric which you were counting on to meet your corporate sales plan. This order accounted for approximately ten percent of your firm's volume in the past year. You currently have enough freed capacity for an additional 250,000 yards per year. It is therefore very important to obtain new business for 2001 through 2003.
- Duchess Corporation is a firm that you have done business with regularly over time, but orders have generally been less than \$100,000. You have, however, recently quoted on a large order which would represent approximately \$1,576,000 in sales annually. This quote was submitted to Duchess Corporation before you found out that you had lost the earlier mentioned order. Your initial quoted price was \$14.44 / yard with total design costs of \$18,000.
- You are aware that your prices are generally comparable with your competitors. Orion's reputation for quality, delivery, and technical support are on a par with competitors in the industry. You have provided similar quotes to the other three companies as well.
- Quality and delivery performance of several of your competitors have been improving steadily over the past several years. You are unsure about how your performance is compared to them.
- Your full costs to produce the automotive fabric quoted to Duchess are \$13.20 / yard with design costs of \$13,000. The profit percentage target of your firm is in the 10-17% range.
- Cost data for the manufacture of the Duchess luxury fabric is presented below:

Direct material	\$ 5.50
Direct labor	2.20
Manufacturing overhead (150% of direct labor \$)	
Variable overhead	0.80
Fixed overhead	2.50
Sales, general, and administrative expenses (6.4% of selling price)	0.85
Profit (10.2% of selling price)	<u>1.35</u>
 Selling price	 \$ 13.20

- In addition to the above lost order, you have become acutely aware of competitive bids by several of your major competitors. Duchess has indicated that they are awarding business to low cost suppliers, and will not maintain loyalty to suppliers.
- You know that product quality and delivery are extremely important to Duchess. Furthermore, you perceive that Duchess intends to do business with fewer suppliers than in the past.
- The product appears to be a repeat buy for several years, but volumes will probably decrease as GM phases out the line. However, Orion does not want to be locked out of future business with Duchess should they be awarded new business from their major customer, General Motors.
- If you don't get this order, other product costs will have to go higher due to unfavorable overhead cost allocation.
- You know the buyer has to place the business immediately to meet plant requirements.
- Your firm's management wants you to get this contract to offset the business already lost.
- To obtain the order, you must reach agreement within 1 hour.

Seller Negotiation Questions

1. Develop a negotiation strategy and plan.
2. What common ground do both Orion and Duchess have to negotiate on?
3. What is the highest price you believe you can get, i.e. where you have achieved an "excellent" bargain?

Automotive Fabrics – Negotiation Case

Purchase Negotiation Case: Common Information

This simulation involves negotiating the purchase of an automotive fabric. The following information is common to all groups participating in the negotiation:

- There are four potential manufacturers of textile products. These include the following:
 - Athena Corp. - Annual sales of approx. \$ 40 million dollars, located in Bowling Green, Kentucky..
 - Cybaris Corp. - Annual sales of approx. \$ 50 million dollars, located in Charlotte, NC.
 - Medusa Corp. - Annual sales of approx. \$ 20 million dollars, located in Columbus, OH.
 - Orion Corp. - Annual sales of approx. \$ 35 million dollars, located in Grand Rapids, MI.

- There are four potential purchasers of textile products. These companies are second tier automotive suppliers, who supply the major automotive companies located in Michigan, Ohio, and the Southeast. These companies have all purchased in small quantities from all of the suppliers, and include the following:
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 - Duke Corporation, located in Cleveland, OH, requires 100,000 yards of the product, and production volumes required are expected to increase by 50% or more in 2002 and 2003.
 - Duchess Corporation, located in Lansing, MI, requires 200,000 yards of the product, and volumes are expected to decrease somewhat in 2002 and 2003.

- Prices for similar fabrics are in the \$12.00 to \$15.50 price range per yard.

- All identified suppliers are able to produce to specifications provided by the purchasing company. However, quality performance related to the product can vary greatly.

- Individual cost structures of the firms providing the fabrics can vary significantly.
- Suppliers provide widely different levels of service and technical support.
- All suppliers have to satisfy the same quality and delivery terms, payment terms, and transportation (FOB seller's plant).
- Industry capacity utilization is about 75 percent.
- All purchasing companies have purchased relatively small amounts from all of the suppliers previously, never totaling more than \$100,000 per purchase.

Assignment:

Students will work in small groups and participate in one face-to-face negotiation session. Group size will not exceed 3-4 people for either the buying or selling negotiating team. Each group will develop a brief written negotiating strategy prior to the negotiation which is to be handed in to the instructor, then conduct an actual negotiation session with an assigned buyer/supplier group from the class. (*Note that an agreement may not always occur with an assigned group). Eventually, each pair of groups will develop jointly a written contract that documents the outcome of the negotiation process. The instructor has an information packet for the buyer and the seller which provides additional information required to prepare for and conduct the negotiation. Buyers and sellers can share as little or as much of the information with each other as they desire during the actual negotiation.

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