INTEGRATING A COMPUTER SIMULATION, THE BUSINESS STRATEGY GAME, WWW.BSG-ONLINE.COM, INTO A CAPSTONE STRATEGIC MANAGEMENT CLASS

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ABSTRACT

This presentation discusses integrating a computer simulation, The Business Strategy Game, www.bsg-online.com, from Hill/Irwin, into a required, capstone Strategic Management course for senior business and accounting majors. The discussion will cover: the rationale for using a simulation, the course structure before the simulation, the course structure with the simulation, the problems and solutions, and comments from students and faculty.

RATIONALE FOR ADOPTING A SIMULATION

BUS 485: Strategic Management, according to the Lebanon Valley College catalog, is a "capstone course to study administrative processes under conditions of uncertainty, integrating prior studies in management, accounting and economics."

The Business Strategy Game requires students to manage a global, athletic footwear entity and to compete against other student teams in the class and across the country. The Game is completely on-line, with anytime/anywhere access from an internet connected computer. The time frame is the present with teams beginning the simulation in the eleventh year of production (with 10 year data available). Teams make decisions each week, which represent one year of production and sales. The simulation can run from three to 10 rounds. Each team begins with two plants: North America (producing two million pairs of shoes) and Asia-Pacific (a newer plant producing four million pairs of shoes). Plants can be built in Europe-Africa and Latin America; building or closing plants is each team's decision.

Teams make 47 weekly/yearly decisions for 1.branded and private label production. 2. plant sale, construction, and capacity. 3. worker compensation, training, hiring, and firing. 4. shipping and distribution. 5. pricing, marketing, and celebrity endorsement bidding. 6. product quality and market segmentation. 7. finance, including exchange rates and tariffs. Once the teams enter their weekly/yearly decisions, the results, along with competitive intelligence reports, are posted within 30 minutes at the most, but usually within 15 minutes.

The central reason for adopting the simulation focuses on the "integrating" in the course description. The simulation increases the necessity for students to deal with more variables than a textbook case and to relate all the variables **simultaneously**. The simulation raises, exponentially, the complexity and the level of integration. With its quantitative emphasis, the simulation forces students to draw on and apply all the mathematical, accounting, financial, and economics concepts from all their courses.

Another reason to adopt the simulation was competition. No business operates in a vacuum, but textbook cases lack the immediacy of competitors. In addition, students do not usually view the classroom as a place to compete. The simulation creates a situation where one company fights other companies for market share, stock price, and earnings per share. Having the students compete in the simulation prepares them for the world of competition after college.

Other reasons for adopting the simulation include: improving computer expertise, increasing awareness of global issues, and receiving immediate results of decision making. The immediate results make the simulation more real-world.

COURSE STRUCTURE BEFORE THE SIMULATION

Before the simulation (See Table 1 for a comparison of the course before and with the simulation), the course consisted of students, in groups of five or six, playing the role of consultants. Each group reads a case about a real entity in a textbook, analyzes the case, and makes recommendations to that entity. Acting as consultants, each group presents its recommendations at a shareholders' meeting in an oral presentation (including question and answer) and with a written report ranging from 34 to 68 pages, including Appendices.

The report consists of the following sections:

- an Executive Summary which highlights the Background, Critical Issues, and Recommended Courses of Action;
- the Organizational Mission;
- a SWOT analysis;
- a TOWS diagram;
- the Financials;
- Critical Issues;
- Alternative Courses of Action;
- the Recommended Course(s) of Action.

Before the simulation, students did four cases, with six class meetings for each case; groups were reconstituted after each case.

After every group meeting, one student acted as a recorder and email, as an attachment, minutes to each group member and both professors within 24 hours of the meeting.

For the oral presentations (all videotaped), presenters dress in full professional attire, receive feedback sheets from each member of the audience, and answer questions during the presentation. Each student in the audience must ask one question during each class period.

Each presentation is done in a different location, each with a different visual aid:

1. classroom, transparency;
2. Zimmerman Lecture Hall, Suzanne Arnold Art Gallery, handouts;
3. Frock Conference Room, Bishop Library, flip chart not prepared in advance;
4. classroom, PowerPoint, opaque camera, transparency, website;
5. Leedy Theater, each group's choice: usually PowerPoint and website.

Based on a suggestion from a student, the fifth and last case pits the 8 a.m. section against the 9:30 a.m. section in a competition presented in the college theater and open to the entire campus. Dealing with the same case, each section writes one report and selects five students for the oral presentation. Students in the audience may only ask questions of the other section, and all students dress in professional attire.

After each of the four cases, two class periods were used to process what had happened and to do leaderless group activities.

COURSE STRUCTURE WITH THE SIMULATION

This section will only highlight the changes made with the simulation. With the simulation, the textbook cases are reduced from four to two, which allots 12 class sessions to the simulation (See Table 1.). The two class periods for review and leaderless group activities were reduced to one. The simulation begins in the sixteenth class session, the half-way point of the semester.

Every Thursday, each student group presents a Progress Report to the professors in another classroom while the rest of students work on the simulation on wireless computers. The students doing Progress Reports log on to the simulation website, put their results on a screen, and explain what they did and why, what problems they faced and their solutions, and their strategy for the next round.

Every Tuesday, the students work in groups on the wireless computers in different areas, and the professors visit each group to observe, to listen, and to ask questions.

For the simulation, the professors began grading minutes because two written reports had been had been eliminated and because they wanted to emphasize the importance of the quality of all writing, no matter how brief.

For the written report, the students write an Annual Report, which begins with a Letter to Shareholders. The Annual Report tells the shareholders the company's condition, what decisions the management made and why, and the management's strategy for the future.

Writing an Annual Report created a new writing experience and forced the students to explore and to research further an area they had encountered in accounting classes. Shorter than the written reports for the textbook cases, the Annual Reports ranged from nine to 17 pages.

When the students approached the final case, the whole class project, the professors asked the students if and how doing the simulation influenced their approach to analyzing a case from the textbook.

At the end of the semester, the professors asked the students for feedback on the simulation: strengths, weaknesses, how would you integrate the simulation into the course next time, compare the textbook cases to the simulation, and compare the

group participation feedback sheets from the professors to the simulation evaluation sheets.

PROBLEMS/SOLUTIONS

The central problems facing both professors and students were change and uncertainty. Introducing an entirely new element into the course meant leaving the secure and the known for the insecure and the unknown. Both professors and students entered new territory without knowing what to do and how to do it. Stress increased by creating a situation where all participants had to learn quickly and to adjust instantly. With professors and students making errors and mistakes, all parties needed patience with themselves and others.

At the first class meeting, the professors explained they were trying something new, an experiment, and the whole class was in this together. They asked the students to be flexible and to give them suggestions and feedback
as soon as they had any problems or difficulties. This created an atmosphere of mutual problem solving and learning.

One major problem was deciding how to restructure the course: how many textbook cases to remove and how many class periods to devote to the simulation. Before the simulation, each textbook case covered six class meetings; with four textbook cases, 24 classes were devoted to cases.
Based on the number of years or rounds in the simulation, the professors cut the textbook cases from four to two. This seemed like a drastic reduction, but the professors decided the number of cases done was not as important as the quality of the learning.

As a result, 12 classes were assigned to the simulation. Would those 12 classes be enough to adjust to and to learn the simulation? Reading and becoming familiar with the Instructor's Guide (38 pages of single space, fine print) and the Participant's Guide (34 pages of single space, fine print) was overwhelming at first. Information overload lasted the first two weeks, then decreased, but everyone referred to the guides regularly.

For users to learn the complexity and parameters of the simulation, the McGraw/Hill authors designed two practice rounds and two quizzes with a suggested schedule. Since the professors had not used the game before, they scheduled both quizzes and only one practice round. This was a mistake. In the future, students will do both practice rounds.

During a class meeting early in the simulation, each company or group began reporting to the whole class what decisions it had made and why. A few minutes into that first report, a student in the audience stopped class and said the group was revealing its strategy, and when that student's group presented, the whole class would learn that group's strategy.

Immediately, the professors discussed the problem with the class and stopped the in-class reporting. On the spot, everyone reached a decision to have each group present a Progress Report individually and privately to the professors in a separate computer conference room. While a group was reporting, the other groups would use wireless laptops, stored in the classroom, to work on the simulation. This solution reduced the amount of group meeting time outside class and increased the security of each group's strategy.

These Progress Reports also gave the professors an opportunity to integrate *The Wall Street Journal* into the class. Every time a group gave a Progress Report, one group member brought an article from the *Journal* and related the facts of that article to the simulation and to concepts and theories from all courses. This created more work for the students but increased the synthesizing and integrating, a goal of the course.

After four classes of giving Progress Reports on Tuesday and Thursday, the students said they found the activity too repetitious or "boring," so the whole class processed that problem. The solution was that, on Tuesday, each group presented the major problems it had encountered since the last meeting and the solutions it had come up with. This activity revealed the group's understanding, thinking, and decision making to the group and to the professors.

The three grading areas: Written Cases-35%; Oral Presentations-30%; Participation-30%, stayed the same with the simulation (See Table 1). But an Annual Report with a Letter To Shareholders for the simulation, created a problem for the students. On their own, they gathered annual reports and created one for their company.

The Oral Presentation for the simulation became more complicated because the technology in a new classroom allowed students to project information on a screen from websites, a transparency, an opaque camera, and PowerPoint.
Each group had to use all visual aids, and each presenter had to handle the visual aid s/he was using.

A presenter could not have another group member work the website.

The Participation grade added two new areas: minutes and progress reports. The students grumbled when the simulation minutes began to receive a grade, but the professors explained that all writing, no more how short, needs to meet the highest quality control standards. The Progress Reports were not as formal as presentations but gave the students another opportunity to practice their speaking skills.

STUDENT COMMENTS

(asterisks separate student comments)

Strengths:

-Got everybody involved
-Actually felt like I was a part of it
-Helped understand material
-Competition was fun
-Really makes you want to learn the ins and outs to succeed

Weaknesses:

-Too many variables at times
-Briefing with professors each week gets redundant
-Tough to keep strategies confidential
-Group members not agreeing on path

If I were designing Bus485 and had to incorporate the book cases and the simulation, I would do it almost the same as it just was done. But since I honestly felt like I learned more about business and was also more engaged by using the simulation, I would only have one book case instead of two. I would then make the simulation last longer so there is more of a chance to build longer-term strategies.

I really don't think the simulation has influenced the Wal-Mart case, at least not where it stands now. There is a bit or correlation in that we thought about revamping Wal-Mart's shoe department and the fact that the simulation revolved around shoes. But that is about it.

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Strengths

- Got teammates to think critically
- Somewhat a real-life situation
- There were so many different factors you had to keep in mind when making one decision

Weaknesses

- It was confusing at times
- Not seeing the other teams' strategies was a good thing, but the teams that were not doing well did not know what they did wrong in some cases
- It was completely different from the book cases we were used to doing (maybe that is a good thing)

How I would do Simulation in the Future

I think I would give the class another practice round or two. I felt I was still confused after the first two rounds. If possible try to correlate it with one of the book cases somehow so it relates more with the rest of the course.

Compare book cases to simulation

I liked doing the book cases more than the simulation. This could just be because my group finished last, but I was not a big fan of the simulation. It was interesting to get feedback from it so quickly year after year, but I enjoyed the process of the long cases more than the simulation.

Compare class evaluations with online evaluations

With the class evaluations there are places for the percentage of work done by each student and what grade you feel they should receive. I feel they are two important things that the online evaluation did not include. The online evaluation was not awful, but the class evaluations I felt were more effective.

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1. Strengths (what worked)
    - Forced group members to analyze financial data.
    - Allowed group members to see the results of their decisions which cannot be determined when completing the cases in the book.
    - Made group members develop a forward looking strategy.
    - Worked with realistic numbers and fairly realistic circumstances.
    - The short presentations were helpful because they did not give away a groups strategy, yet they forced group members to speak in a different setting than we are use to.
2. Weaknesses (what did not work)
    - Made decisions for an entire year, without being able to adjust those decisions throughout the course of the year (unrealistic).
    - Very hard to determine what strategy to take considering many groups changed their approach from year to year.
    - Drastic decisions were rewarded more than a steady approach/strategy.

- The deadline time made it hard to have enough time to actually interpret the data before giving the brief presentations. Maybe allocate a short period of time at the beginning of the class so that each group can get their thoughts together before presenting.
- Not enough guidance given for the annual report.

3. Design of the course/ Influence on the last case

- I liked having the simulation and not having to work on any other cases. It takes a substantial amount of time to actually complete each decision so it would not be easy to work on the simulation and a case at the same time.
- Maybe have the simulation as the second part of the class instead of as the last part. This will force groups to analyze financial data and develop strategies for the book cases that are more realistic and numbers based.
- The simulation will not help much with the Wal-Mart case in terms of financial analysis simply because the case lacks financial depth. It will help develop a better recommended solution.

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Strengths

The simulation provided me the opportunity to experience the managerial decision making process. It improved my analytic skills. The numerous variables made each decision important because of the potential consequences that would ensue with changing even the most insignificant variable. In addition, the group-oriented project enhanced my verbal communication skills. Furthermore, it improved my ability to work with others in a collaborative setting.

Weaknesses

The simulation had its flaws. It did not accurately portray the footwear industry. The game allowed Company A to determine that the industry was a luxury shoe industry. However, there are many different segments to the footwear industry. Yet, the simulation just grouped all the companies together. Consequently, the companies that priced their shoes relatively cheap and had a lower S/Q rating lost sales and generated lower profits.

In addition, the simulation restricted celebrity bidding. Clearly, in the real world a company can attempt to persuade a celebrity to endorse its product at any time. Yet, the game only accepted bids for certain celebrities each year.

Comparisons

The simulation is a dynamic project. Numbers are constantly changing and decisions have to be constantly reassessed by the co-managers. Since we control the decisions, it is easier to connect to the simulation and to participate. Also, the instantaneous feedback assists the groups in learning how their decisions impact the performances of the respective companies.

However, the old cases provide real world examples of companies. The issues presented are actual problems of the companies. These reports call on us to assume the role of consultants and not decision-makers. The case studies provide examples of critical issues currently faces reputable and wealthy companies throughout the world.

I think both types of activities complement each other.

Recommended Changes for the Course

I think the order of assignments (case study, case study, simulation, competition) is a good mix. However, you should introduce the simulation before the start of the second case study. Consequently, the students will have more time to read the Player's Guide and digest the information.

Also, the "update presentations" occurred too frequently. Maybe every other class would be sufficient enough. I do not think it was beneficial to prepare updates for every class period. The additional time would allow the groups to spend more time assessing their performance and analyzing decisions.

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I liked the cases in the book better than doing the actual simulation. I feel like I learned more from doing the cases in the book because I really had to understand the material to write a well written part of the paper. In the simulation, more or less, you could just plug in numbers and see how it affected the outcome without knowing why you were doing it.

The following strengths of the simulation are listed below:

- It was good that we were given two practice rounds before the real simulation began
- Meeting twice a week gave the group a chance to make changes sooner if something was not working

- Could see the immediate changes and what implications these changes had on the company's current situation
- Sharing our decisions and how we finished in each year
- Taking turns on who writes minutes and getting graded for those minutes

The following weaknesses of the simulation are listed below:

- Work was not evenly distributed; some group members were always using the computer
- Did not really have to understand what you were doing because you could just plug and chug until you found something that made the company successful
- There should be more years in the real simulation
- The manual had too much information contained in it to remember it all for the simulation work, so one had to be continuously looking back
- Only presenting final standings at year end and not the decision process at the beginning
- During presentations, one group member should have been allowed to stand at the podium to switch back and forth the equipment for the speaker.

In the future, I think the practice rounds should begin a little earlier than they did this time. If the practice rounds were started earlier, there could be more years added to the simulation. I think adding more years would make the game more interesting. I also think the groups should be made smaller if possible. With four people in the group, it was hard for everyone's opinions and ideas to be heard. I also think that for this last project we should be able to pick the group we want to be in.

No, the simulation did not influence the way I did the last case. I based my part of this last case on how we were to create our written part in the beginning cases. I used nothing from the simulation in the last paper.

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What worked?

- The simulation served as a venue to use skills that we have learned in the business department to make decisions
- Results of decisions were helpful in evaluating the successful application of concepts and theories from class
- The simulation was great at establishing student enthusiasm and participation
- Emphasis on financial decisions reinforced the importance of understanding accounting and financial analysis
- Students were required to follow directions and thoroughly understand the simulation if they were to be successful
- Brief meetings with instructors were effective at establishing presentation skills that might be required at a typical small meeting

- **What didn't work?**
- Groups were set up so that many decisions were made by a single individual and other group members could coast through the decision making process
- It seemed as if the majority of the class was not adequately competent in financial analysis to make some of the major decisions in the simulation and know why they made the decisions other than guessing or trial and error
- Due dates for every class may have been a bit too much/ it was difficult to arrange meetings with students having other classes and work schedules

- **How would you integrate the simulation into future courses?**
- The simulation was very helpful at integrating the concepts and theories that were learned throughout my affiliation with LVC. I would definitely do the simulation again, although I do not think that the case studies coincide with the simulation as much as might be desired. The simulation required much more analytical and financial analysis know-how than the case studies required. This being the case, I do not think that the simulation serves as a substitute for a case study. Perhaps, you may want to do the simulation throughout the entire semester with the due dates spaced out to every week or every other week. It may also be beneficial for the teams to be smaller or even made up of single individuals. You may require students to report to you once a month with how the simulation is going. Students may be given a one week or two week period at the end of the semester to put their simulation papers together. While the one week deadline was generous, the time

constraint may have limited the quality of the simulation papers.

How did the simulation influence the final case?

The simulation had limited impact on the final case. At most, students were made more aware of the importance of financial analysis. The Wal-Mart case had a limited amount of financial data, so this new found awareness may not be as applicable as desired. The simulation paper and presentation were a lot to put together in such a short period of time and likely took resources from the final case. That is that students may not be putting as much effort into the final case because they were focusing on the simulation paper or they felt burnt out from the simulation. Also, the simulation did not leave very much time to prepare for the final case. Groups met every other day or in some cases every day for the simulation. This left very little time to meet for the final case. While both exercises are beneficial, you may want to reconsider the time period in which the exercises are applied.

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Strengths

- Learned more about evaluating company performance, investor confidence, and industry averages.
- Applied different concepts and skills to the simulation.
- Learned what strategies worked and did not work.
- Learned how to read competitive intelligence reports.
- Since this was a different group project, I learned how work in a group and come to a group consensus.
- Learned more about bid pricing and the difference between the private and the branded sector.
- Created a competitive environment.
- I was able to apply The Wall Street Journal to the simulation.
- Group meetings every class to report the group findings.

Weaknesses

- The simulation was unrealistic to the real world.
- Was not presented with a problem to solve.
- There was not a lot of group interaction.

How I would do the simulation in the future

In the future, groups should list any future projections they may have for the upcoming week. I think the group should list a group of goals in the beginning of the simulation on things they would like accomplished during the simulation; whether it is group or project related. Also, in organizational behavior the class was asked to write their personal strengths and weaknesses and I think that is interesting to know because then the group can help each other with their weaknesses. Also, I would make each group do a mini SWOT analysis. The SWOT is helpful to make sure everyone understands the project and each member can share his or her ideas with the group.

Compare book cases to simulation

The book cases involved a lot of writing and revisions whereas the simulation consisted on changes in a program. The cases were word related and each member needed to understand the case in order to write a section of the final paper. Also, in the book cases each group member had a responsibility to fulfill whereas in the simulation the decisions were made as a group. The simulation was helpful because it compelled me to look through the Wall Street Journal for an article related to the simulation. Also, the simulation required a different paper format, which was a chance to write to a different audience as opposed to doing another SWOT analysis.

Compare class evaluations with online evaluations

I liked the online evaluations because I can handle constructive criticsm, but I do not like seeing what group members would give me as a grade. I know during my first case I was really upset after the evaluations because I did not think I was as horrible as the group members listed. Especially since I thought I worked extremely hard on my section, but the end result was not rewarding. I know the evaluations are supposed to be helpful, but I know in my case, it gave me negative energy towards some of those people after seeing the grades they gave me and no positive feedback. It was as if I did not contribute at all. So I think the online evaluations are fair because they allow the group members to asses each person without allotting grades.

FACULTY COMMENTS

The simulation was rewarding and stimulating, an opportunity to learn and to integrate the old and the new.

We learned by reading the instructor's guide and the participant's guide, by setting up, and by monitoring the simulation. We needed to understand all the elements and how they related to all the other elements, simultaneously. That understanding is an

on-going process, since this was the first time through.

Integrating the simulation caused us to look at our whole course with new eyes. We reduced the number of textbook cases, changed the class structure, worked in *The Wall Street Journal*, graded the minutes, introduced an annual report, and required each group to use all available visual aides in the final presentation.

The simulation introduced an immediate feedback loop, not present in previous semesters, on the effectiveness of their decisions. Using a traditional case analysis approach where students analyze cases, draft solutions, and present those solutions on paper and in presentations certainly improves their ability to analyze and suggest strategy. But the students do not know the viability or the results of their solutions. The almost instantaneous feedback from the simulation lets them know.

Another benefit of the simulation was the quantity and content of the communication among team members. Students began questioning, evaluating, and proposing options in a way we had not seen with the traditional approach. Their enthusiasm for joining the competition seemed to promote additional interaction and serve as a reason to become involved. Additionally, their vocabulary centered around terms such as earnings per share, market share, revenues, credit rating, exchange rates, branding, competitor strategy, and the like. While these terms are certainly not new to them, the way in which they discussed them, examined their impact, and accounted for their importance did change.

They became not only more global in their thinking but more strategic in their approach with a clearer understanding of the interaction of a multitude of business factors. The students were engaged, motivated to explore options in a systematic, comprehensive manner, and ready to make adjustments necessary for their company to be successful.

One of the best parts of the simulation was working with the students as equal partners on this experiment. From the beginning, we let the students know all of us were new to the simulation, and we were in it together. Since the students were seniors and had known us from their first semester, they felt free to ask questions, offer suggestions, and speak their minds, some very directly. In this give-and-take, the faculty needed to listen, to be flexible, and to adapt on the spot. The discussion became on open, fluid exchange among learners. Together, students and faculty solved problems and made decisions.

Two important outcomes of the simulation were competition and ownership. Each company carefully monitored its performance against all other companies. As the semester went on, the competition increased. Each group wanted to win by outperforming the other groups, by writing the best annual report, and by giving the best presentation. Each group became so invested in its company, they became the company.

Some stressors accompanied the learning and integration. Change was a central stressor. It's easier to teach a course the same old way. So we had to invest time and energy to learn the model with all its complexity. Not knowing the model in-depth before teaching the course caused some anxiety.

Another stressor, a minor one, was the give-and-take with the students. The simulation, plus the fact that the students were seasoned veterans, produced the most interaction about how to run a course we had ever experienced. We had to be alert and to adapt on the spot to the students' problems and suggestions.

In the student comments, some students wanted to keep the course without a simulation, which surprised us. We suspect those students wanted to stick with what they knew and avoid the stress of something new. Other students admitted they just plugged in numbers to see what happened, without understanding why. The faculty needs to make sure the students understand what they are doing and why.

We view the simulation as an invaluable part of the course, and we look forward to improving our approach.

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Table 1: Structure of BUS 485 Before the Simulation and With the Simulation

	Before the Simulation	**With the Simulation**
Cases from textbook in different groups	4	2
Cases from textbook with whole class as a group	1	1
Number of classes on cases in different groups (T/Th: 32 total classes)	20	10
Number of classes on simulation in groups	0	12
Number of classes with whole class as a group	3	3
Oral Presentations	4 cases, 1 whole class = 5	2 cases, 1 simulation, 1 whole class = 4
Written Report	4 cases, 1 whole class = 5	2 cases, 1 simulation, 1 whole class = 4
Minutes	after every group meeting	after every group meeting
Group Participation Feedback Sheets	after every case = 4	after every case = 2 simulation: after second, seventh meeting and last presentation = 3 simulation form = 1
Grading	*Written Cases: 35%* Each student receives both an individual grade and a group grade on each report. Whole class receives the same grade for the final case report. *Oral Presentations: 30%* Each speaker receives an individual grade. Whole class receives the same grade as the presenting group for the final case *Participation: 35%* Students not presenting must ask one question	*Written Cases: 35%* Same Annual Report part of this grade: all group members receive the same grade. *Oral Presentations: 30%* Same *Participation: 35%* Same Minutes graded here Progress Reports part of this grade