

Developments in Business Simulation & Experiential Learning, Volume 26, 1999
USING COMPUTER ASSISTED SIMULATION TO TEACH INTERNATIONAL BUSINESS
STRATEGY: A CASE OF THE MULTINATIONAL MANAGEMENT
GAME (MMG)

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ABSTRACT

[n this paper we report on the use of a simulation, the Multinational Management Game (MMG), in undergraduate International Business Strategy class. The objective of the exercise is to assist students in learning “how to take a company global.” Teams compete in the same markets, North America, Pacific Rim and Europe, selling the same products. The facilitator presents summary graphs of the results. An extensive feedback session discussed the results of their decisions. The exercise ends with a Stakeholder Meeting where teams present their Vision, Mission, Objectives and Strategies along with their actual financial and internationalization accomplishments.

**INTRODUCTION: TEACHING
INTERNATIONAL BUSINESS**

The seventies witnessed a number of critical reports on the status of business education in America. Responding to these reports the AACSB mandated that US business schools must internationalize their curricula. In their efforts to comply with this directive business schools across the country developed a number of approaches. For the sake of brevity we will classify these approaches into three main categories.

Category One: Show a Good Intention
Category Two: Make an Honest Effort
Category Three: Develop a Respectable
International Business Area

Category One: Show a Good Intention

Schools that followed this approach simply used a “diffusion” type of approach and instructed their professors to incorporate some international business aspects to their teaching. The basic idea was that if every professor incorporated a lecture or two on the international aspects of his or her functional area then students will get the message that the US is part of the world and therefore students must begin to “think international”! These efforts motivated a number of professors to write a small paperback on the “International Dimensions of” These books were to be used in conjunction with the main text. [For example, Kent Publishing Company has a whole series on these International Dimensions, The Kent International Business Series.]

Category Two: Make an Honest Effort

This approach consists of developing and offering at the undergraduate, and in a few cases at the graduate level, a course on International Business under the title the Environment of International Business or Introduction to International Business. The course had usually an economics flavor and focused on international economics, international trade and international finance. In some schools all undergraduate business students were required to take this course. These efforts created a huge market for an introductory International Business course that motivated a rather substantial number of professors to write a text on Introduction to International Business. The new course gradually shifted emphasis away from pure economics and finance and incorporated the “management” dimensions.

Category Three: Develop a Respectable
International Business Area

Schools that followed this approach developed a full scale International Business curriculum and offered a major in international business. This curriculum consists of a course in each functional area. Most schools will offer a course on International Trade, Marketing, Finance and Management. These schools eventually developed a respectable international business major that attracted students with the highest GPA. Today most of the schools of this category require two to three semesters of a foreign language for their majors. The aim is to move the student along a three-stage process, promoted by the Academy of International Business (AIB), starting from awareness to understanding and ending with competency.

TEACHING INTERNATIONAL STRATEGIC MANAGEMENT AT THE UNIVERSITY OF GEORGIA

The course **Management 5560 International Strategic Management** aims at instilling in the young student's mind a global attitude. Creation of a global attitude begins with an **awareness** of, among other aspects, the role that multinational companies [MNCs] play in human survival and prosperity. Creation of this awareness is followed by a variety of efforts to achieve an understanding of the nature, function, strategies and systems of the MNC. Finally, competency is achieved by giving the student an opportunity to practice his or her understanding and skills via a simulation exercise. The main philosophy and the background of the field are presented in the first page of the course syllabus.

The Teaching Framework

The course is composed of two parts. In the first part the theoretical aspects of international business are explored using a textbook that usually contains short cases and other exercises. The second part attempts to provide an opportunity for a hands-on experience via a simulation package,

The Multinational Management Game (MMG). The MMG was used to provide a vehicle for the students to practice the globalization process.

The course espouses the so-called internationalization theory of international business. According to this theory firms that wish to explore the international arena follow a gradual involvement type of approach. Plotting this approach in a two dimension scheme where the vertical axis shows the Risks and Rewards associated with each of this globalization strategies shown on the horizontal axis (Kefalas, 1990). At the extreme left side of the graph Export/Import Entry Strategy management risks little but also gains little. The maximum risk is the total monetary value of the merchandise shipped to the importer. The maximum reward is the total profit of the shipped quantity. The next stage of the globalization process is Contractual Arrangements Entry Strategy. These are non-equity linkages between one firm that has a competitive advantage, such as a well-established product, brand name, technology or process that seems to have reached the maturity stage in the home country. In its effort to continue the cash inflows from the product and/or technology the firm will license it, franchise it, and so on. Here, even though usually the firm does not risk equity, there exists the risk that the other party will appropriate its product and/or process or technology and begin its own production and sales. Finally, the last stage Investment Entry Strategy the firm reaches the maximum involvement, both risks and rewards are at their highest levels.

Thus students are encouraged to begin their globalization process by exporting from the US and after they have gained some experience then they can begin setting up new factories (greenfield investment) or buying existing facilities (brownfield investment) either in the markets they have been exporting or elsewhere. To make sure

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that students get the idea of the importance of moving from exports to investment, in addition to verbal advice using the famous Japanese saying that “those who live by exports die by exports” the evaluation of each team’s performance incorporates a variable called The Internationalization Ratio (IR).

The Learning Objectives

The course aims at teaching undergraduate students the basics of multinational management. In other words, the main objective of the course is to familiarize students with the process used by business in their attempt to internationalize their activities. The game is not used to teach strategy per se. As is it showed below students are required to develop a rudimentary strategic plan but that is a secondary consideration. The primary objective is to allow the student to practice the implementation of the chosen globalization strategy. The implementation of the strategic plan involves the development and execution of the various aspects that comprise the firm’s operational plan. Students are reminded that strategic plans are as good as the results they accomplish. Goal setting and goal reaching requires careful use of the firm’s financial, material and human resources. The MMG is the vehicle for learning the development and implementation of the operational plans that lead to the accomplishment of the strategic plan.

Thus the main Learning Objectives related to the use of the MMG are:

- To become confident with the basic Financial and Operating Statements used by a multinational company such as Balance Sheets, Income and Cash Flow statements for the home company, the subsidiaries and the consolidated statements.
- To become familiar with the intricacies involved in sending products overseas (exporting) and producing overseas (investing).

- To become familiar with national differences in labor productivity, compensation, and turnover as well as differences in peoples’ response behaviors to advertising and pricing strategies.
- To become competent in assessing national markets based on data on national economic fundamentals.
- To learn to <<think strategically>> by thinking holistically, globally, long-term, executive-like, and reversibility-focused.
- To learn to become a good team player!

THE MULTINATIONAL MANAGEMENT GAME (MMG): A BRIEF SUMMARY

The Multinational Management Game (MMG) is a simulation exercise whose purpose is to enable students and managers to learn the basics of taking a company international. The game simulates the microcomputer industry and specifically the Compaq Computer Corporation. The simulated company produces two products: (a) a commercial product, Product A, which is a desk top PC and (b) an industrial product, Product B, which is a memory extension. The management of this company, our students, is asked to try its luck in the international market. Both products can be exported to the Pacific Rim (Malaysia), Western Europe (Germany) and the North America (USA). Teams can also built production facilities overseas. The starting position of the companies is good. There is enough working capital to start the operations, all financial ratios are within acceptable levels and all is ready for the globalization adventure. (Keys, J, Bernard, Robert Wells and Alfred G. Edge, 1992, 1993, 1994; J. Bernard Keys, R.M. Fulmer and S.A. Stumpf, 1996) A Powerpoint presentation of the game, some useful tips and aids, team scoreboards, and internationalization ratios as well as samples of team annual reports can be found in my home page at www.cba.uga.edu/~akefalas.

Assignments

During the second or third week of the semester students are asked to form “self-managed” teams of four-to-five members. Subsequently each team is asked to “organize” themselves by submitting to the facilitator their Strategic Alignment (SA). A chart with the basic steps of the SA can be found on the home page. Teams start their SA with their VMOS or (1) Vision (2) Mission (3) Objectives and (4) Strategies and their Organization Chart along with each team member’s Job Description. Teams are told that they will be able, if they wish, to change their VMOS. Each team presents itself to the class and explains its VMOS and organization. Teams are advised to read a simple “How to Read a Financial Report” by Merrill Lynch or any other popular book on the basics of financial statements.

The Feedback Sessions

After each run of the game there will be a feedback session where each team will be asked to (1) check their output for (1) technical consistency, i.e., compare the decision parameter as they are reported in the printout with that they entered into their team diskettes; (2) check their output for conceptual consistency, i.e., compare their expected outcome of their decisions with the actual outcomes as they are reported in the printouts.

The End: The Stakeholders Meeting

This meeting is in lieu of a 3-hours final examination. It is held during the time and place scheduled by the Office of Instruction. The purpose of this meeting is to simulate a real Annual Stockholders Meeting of a company. Each team will be given 20 minutes to present to the rest of the class (the stakeholders) and to another team (the Board of Directors) their VMOS and their actual accomplishments. Teams are encouraged to use visual aids. A room with a computer and a public screen is provided. Most teams choose to use the MS Office’s Word, Excel and Powerpoint. After the presentation first the

Board is given the opportunity to ask any questions they see appropriate. Then the entire stakeholder body is allowed to ask questions.

Evaluation Criteria

There are four evaluation criteria that correspond to the aims pursued in the class for which the game is used as an enabler. First and foremost students are reminded that the business of business is good economic performance. Short and long-term profitability is a necessary condition for success but is by no means sufficient. Continual increase in sales revenue can only come from continual increase in the fixed or production assets of the company. Consequently, the long term growth and growth potential become part of the evaluation. In addition, since this is an international business class, this growth potential has to come from overseas activities. A specific requirement is the realization of the globalization strategy, i.e., movement along the exports-investment continuum.

In addition to economic performance teams are evaluated on their ability to (1) deliver a good presentation, and (2) to create an attractive and accurate Annual Report. Thus the following table summarizes the evaluation criteria:

Table 1. MMG Evaluation

Criteria	Points
1. Profitability	25
2. Internationalization Ratio	25
3. Presentation	25
4. Annual Report	25
Total	100(40% of Grade)

LESSONS LEARNED FROM THE MMG

The main Learning Objectives of the class were stated as follows:

- To become confident with the basic Financial and Operating Statements used by a multinational company such as Balance

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Sheets, Income and Cash Flow statements for the home company, the subsidiaries and consolidated statement.

- To become familiar with the intricacies involved in sending products overseas (exporting) and producing overseas (investing).
- To become familiar with national differences in labor productivity, compensation, and turnover as well as differences in peoples' response behaviors to advertising and pricing strategies.
- To become competent in assessing national markets based on data on national economic fundamentals.
- To learn to <<think strategically>> by thinking holistically, globally, long-term, executive-like, and reversibility-focused.
- To learn to become a good team player!

As was pointed out earlier one of the main advantages of business games is that they provide an excellent opportunity for practice. By practicing their skills in (1) making decisions regarding market entry strategy and sales and cash flows forecasting, production scheduling, workers and sales people hiring and compensating, (2) correctly interpreting the results of their decisions by reading, recording, tabulating and graphing the output of the game, and finally (3) taking corrective actions to minimize the differences between intended results (goals) and actual results (accomplishments) students gain the confidence in themselves and in their knowledge of the field of international business.

Learning to interpret the <<numbers>>

The experience in MAN 5560 has been eye-opening. Senior students have hard time making sense out of the basic financial and operating reports. Most of them don't know or understand the difference between the Income Statement and the Cash Flow statements. After the first trial run a number of students will ask "how is it possible to have NO cash when we made some 27 million

dollars profit?" After a couple of runs they will comment "I've learned more about accounting during the last two weeks than in my whole life in the business school." As they go over their outputs the once incomprehensible relationship between the Income Statement and The Balance Sheet and between the operational records and their financial records becomes crystal clear. Of course that is precisely the purpose of the simulation: to do it over and over again until they get it right!

Learning to avoid the "currency traps"

Most American students and managers have difficulties dealing with money expressed in a currency other than US dollars. At the beginning of the game some teams will wonder "how come we sold everything in Malaysia and didn't make any money...as a matter of fact we lost a bunch?" When you point out to them that at the price of 1800 \$M they were "... practically giving it away," as a student from another team commented. Of course, they soon realized that the price they entered in their decisions disks were in US dollars. Obviously when they get burned once they learn to watch their "\$, DM and M\$."

Learning to see the "forest and the trees"

If students and managers have trouble interpreting financial and operational statement in one country one can imagine the difficulty of looking at three columns and attempting to mentally translate them into a common currency. First their minds must assess the meaning of the numbers in the currency of the country depicted in the column. Then one must very quickly translate the numbers into the currency of the home country, in our case US dollars. Finally, a comparison between the two affiliates or subsidiaries must be done by attempting to translate one currency into the other.

It is a true miracle to observe how quickly players learn to interpret the results of their decisions in all geographical areas. After a few runs they have

learned how to spot differences between the country-specific financial statements and the consolidated statements. They have caught on to the idea of first taking a quick look at each column and eyeballing “vertically” to get a quick assessment of their performance in each area and then shifting to a “horizontal” mode to get an idea of how countries compare with each other and to the home base.

Learning to “micromanage” their firms

Most humans are much better in talking about the decisions we must make than are in actually making these decisions. Further, even those who are good in reaching a final choice have difficulties <<recording>> these choices in the <<appropriate>> place in our <<space-time>> coordinates. In other words, after we have chosen to do something we either forget to enter it in the appropriate document or if we do it we do it in the wrong time. In playing the business game, players must make their decisions by taking into considerations some space and time constraints. For example, one cannot wish to sell a product in a country in which one has NOT invested in the previous year. Therefore, if one wishes to sell to that country one must export from the home base or from the other country where there is a production facility. These constraints are translated into time lags that must be observed.

Students playing the MMG quickly learn to watch their <<ps and qs.>> Once their wishes didn’t materialize because they neglected to observe the time lag between the time the decision was made to set up their workstations and the time of production, they quickly learn that “things don’t happen instantaneously.” As one student put it “Man you really have to take care of the details in this game. Computers aren’t that smart after all. You must tell them everything. We open the German market by specifying price, advertisement, and all that good stuff but forgot to ship 20,000 units we wanted to sell. Well you know what happened? Picky picky, picky.”

Learning to “macromanage” their firms

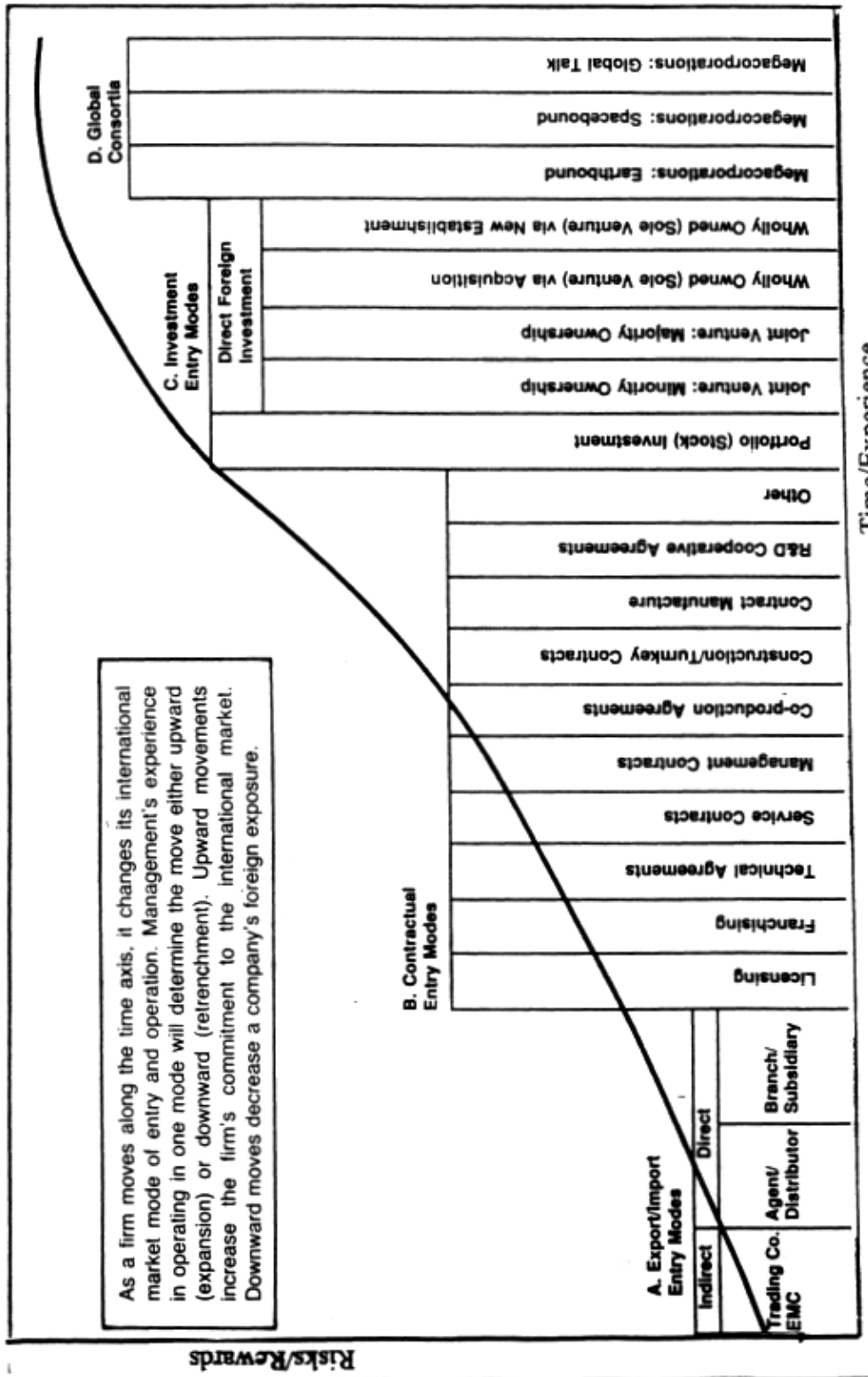
Finally, the course aspires to teach students how to think strategically. Thinking strategically implies that students must:

- begin to think holistically, that is see both the their firms as both (a) three distinct entities, one in the USA, another in Malaysia and yet another one in Germany, and (b) a whole whose value must be more than the sum of its three parts.
- think globally, that is they must not think of one part as been preferable to the other because of their national affiliation. Rather they must see the entire globe as their own oyster.
- think long-term. In other words they must understand that their planning horizon is five years and not one or two years.
- think executive-like, that is, they must think of the welfare of the entire firm rather than of the function for which they are responsible, finally
- be reversibility-focused. In other words, they must understand that decisions pertaining to going global are not as easily reversible as decisions pertaining to domestic matters.

INDICATIONS OF LEARNING HOW TO GO GLOBAL

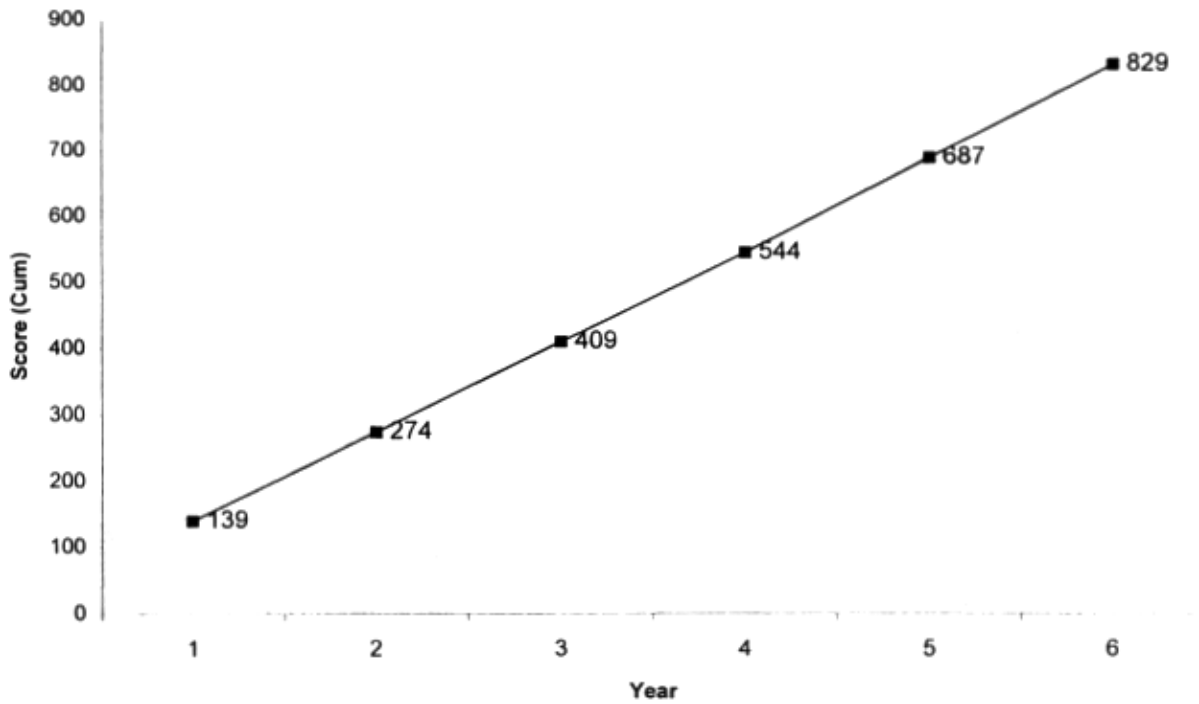
Overall, the MMG has been great learning experience. In the course evaluation the game was mentioned as the most challenging and enjoyable part of the class. The main thrust of the course is to enable students to learn how to ascend the globalization curve, i.e., how to go global gradually starting from exporting and ending with investment. As the figure below shows beginning with Year 2 emphasis has shifted away from the basics on producing and selling domestically to expanding overseas and to maneuvering liquid assets among the three markets in order to minimize taxes and maximize returns. As is

Exhibit 1. The Globalization Process: An Evolution.

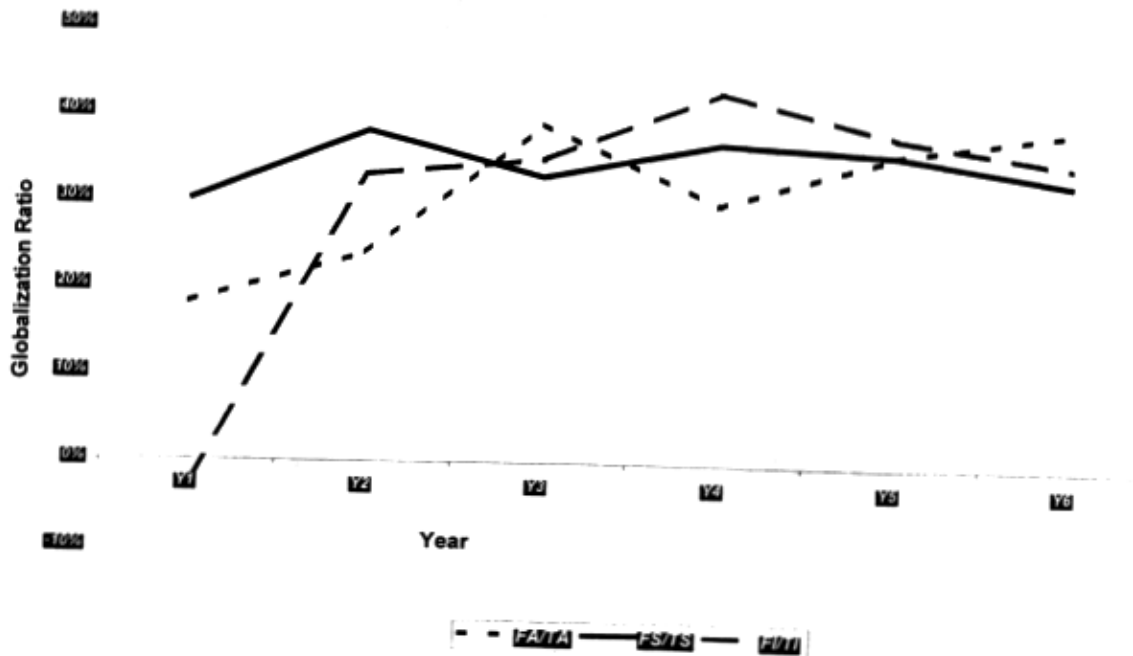


Source: A. G. Kefalas, *Global Business Strategy: A Systems Approach*, Southwestern Publishing, Cincinnati, OH, 1990

MMG Score Board - Beta



MMG Globalization Ratio- Beta



expected profits from overseas activities (FI/TI) are lagging investment (FA/TA) and revenues (FS/TS). The temporary setback in revenue and profits did not impact the overall performance of the firms. The Scoreboard, a composite of seven overall performance criteria, continued to rise. At the end of the sixth year the Scoreboard index rose sevenfold while the Internationalization Ratio reached 40%.

CONCLUSION

As expected the beginning is always difficult. Teams saw their financial performance deteriorate as exports and later on investment were not as profitable as domestic production. However they were told that was to be expected. By the end of the term one is pleasantly surprised to see students who had difficulty entering data into their disks are now using MSEXCEL to track and graph their output and MSPOWERPOINT to prepare their Stakeholders Meeting imaginative and colorful presentations. In one sentence students acquired the habit to

**Think Globally and Act Locally and practice
Think Tomorrow Act Today**

REFERENCES

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