

# INDOAMERICAN ENTERPRISES

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## ABSTRACT

*IndoAmerican Enterprises is a simulation that presents students with a highly structured background but conflicting goals. Groups of students are tasked to solve a problem using different approaches, and the optimal solution for each group conflicts with the solutions identified by other groups. Students then have to reconcile their differences to develop a solution that is acceptable to everyone. The simulation is robust and has been run with a group of 100 students. Large group sizes develop different dynamics and communications strategies than small groups, and these processes are the ultimate learning objectives of the exercise.*

## INTRODUCTION

The structure of a simulation or game is as important to its success as the ultimate learning objective. Exercises are typically designed for a group of a certain size, often a class size of 20-40 people, and it can be difficult to scale-up the experience for larger groups. IndoAmerican Enterprises was created to examine the dynamics of a very large scale simulation with 100 participants. The structure, conduct, and debriefing of the simulation demonstrated that such a large scale exercise could be successful.

## PEDAGOGICAL STRUCTURE

The opportunity to develop IndoAmerican Enterprises was serendipitous. Two of the authors were given the opportunity to teach classes of 50+ students during one summer session. Since both authors had experience in creating and using simulations in the classroom, it was decided to create a simulation that would include both classes. The simulations used in previous classes typically

were designed for 20-40 students, so IndoAmerican provided the opportunity to test the feasibility of a large-scale exercise. It also provided the opportunity to test whether cross-disciplinary integration (Bossung and Morse, 2000) could be achieved in a large-scale simulation.

IndoAmerican Enterprises is based on PanPacific Enterprises (Brozik, et al, 2005, Cassidy, et al, 2005). PanPac simulates the decision making process in a large, multinational firm. Students are divided into groups and provided with a Briefing Book that contains detailed information concerning the firm, its products, and its markets. Each group is asked to develop a plan for locating new production facilities based on specific factors. For example, one group is asked to minimize shipping costs while another is supposed to find the lowest possible labor costs. What the groups do not know is that the goals of each group are mutually contradictory. There is no solution that will be optimal for all the groups. Once students recognize that their proposed solutions are incompatible, they must work together to develop a single plan for presentation to PanPac's senior management. The process by which students discover incompatible goals, communicate with other groups, and learn to create a single plan is the real purpose of the exercise. This structure of presenting the students with multiple problems for which they attempt to find answers and then creating the situation where the ultimate problem must be identified by the students before a consensus solution can be reached extends the concepts of Problem-Based Learning (Anderson and Lawton, 2005).

## DEVELOPMENT AND CONDUCT OF INDOAMERICAN

It was understood from the beginning that a very large simulation would generate an entirely new set of structural problems. All the authors have several years experience in conducting simulations, and it was this experience that made

the simulation possible. As a word of caution to persons who are new to using simulations in the classroom, it must be noted that this exercise would not have been possible without multiple facilitators with experience in both the design and conduct of games and simulations. With a group of 100 players, there is no time for the facilitators to learn the game on the fly. When the action begins, it comes rapidly, and the facilitators must be ready to answer questions as they come. It should be noted, though, that there is no reason that the multiple facilitators answer a question in the same way. The real world is full of uncertainty, and a simulation like IndoAmerican can be constructed with uncertainty as part of its structure.

The first decision concerned what type of simulation to conduct for such a large group. The authors all prefer using non-deterministic exercises where the outcome cannot be predicted in advance. A second and very important factor in this decision was the availability of infrastructure and equipment. The available facilities did not have adequate computer access for such a large group, so the exercise would have to be based on personal interactions rather than machine-supported decision making.

Developing a simulation of any size can be a long and complex process (Hall, 2007). Rather than create an entirely new exercise, it was decided to modify an existing simulation. The authors had been using PanPacific Enterprises for several years and provided the type of exercise that was planned for the class. The crux of PanPac is to create a situation in which multiple groups of players using the same set of information create different optimal solutions because each group has a different goal. While certain management techniques, such as linear programming, can be applied to a single goal, the structure of the conflicting goals is such that there can be no optimal solution for the entire organization. Once the players recognize that their specific solutions are not viable, the simulation shifts to negotiating a solution that can be achieved and that all stakeholders can support. Presenting the students with incompatible goals is realistic. Large, multi-divisional companies often face this type of problem, and the ability to identify and resolve such conflicts is a desirable skill. The use of negotiation as a fundamental component of the exercise fosters the development of critical thinking skills (Page and Mukherjee, 2006)

PanPac is usually conducted by giving the student groups the Briefing Book prior to the class session so that they arrive with a specific solution in hand; the classroom session then focuses on devising the common solution. IndoAmerican was to be administered to two groups of MBA students, a junior cadre and a senior cadre. The structure of the MBA program was such that the membership of each cadre was constant over time, and the students in each cadre took the same courses at the same time. This instructional style created a strong social structure within each cadre, and it was felt that a significant amount of information would be exchanged between cadre members outside of class and the value of the discovery of the incompatible solutions would be lost. IndoAmerican was designed to be administered over a single four-hour

period, and students were given the IndoAmerican Briefing Book (Exhibit 1) at the beginning of the session.

The key design decision concerned the size of the functional groups. Experience has shown that a group size of three to five allows all students to have an active role in the process. Smaller groups tend to be dominated by a single personality, and larger groups suffer from the “free rider” problem. PanPac was already designed for up to 10 functional groups. Some initial effort was made to design 10 more independent functional groups, but it was found that this would require adding considerable new information to the Briefing Book. It was decided to copy the goals for each the existing functional groups into a second group with a different name. For example, there were both a Human Resources and Personnel group; all group names are presented in Exhibit 2. An example of the goals given to the different equivalent groups are presented in Exhibit 3. Each cadre was given one of the two equivalent groups, and since each cadre initially worked in isolation, two independent solutions were derived for each goal. Some new information was added to the Briefing Book in order to give each group sufficient data to use in developing their separate solutions.

The classes were kept in separate rooms during the first two hours of the simulation. Each cadre was split into 10 different functional groups, and each functional group had two hours to develop its optimal solution. Though the functional groups had indeed been mirrored between the cadres, there was no way for this information to be available to the groups. During this period the authors acted as facilitators and rotated between the rooms and among the groups. Each cadre was already familiar with its own instructor, but the introduction of two new faces required the groups to adapt to different personal styles. One of the facilitators roamed freely among the groups offering advice, a second remained relatively aloof and maintained a critical attitude, and the third played a supportive role but offered information only when asked. It had been decided ahead of time that there would be no attempt for the facilitators to “sing from the same page of the hymnal”. Opinions offered and suggestions made by the facilitators reflected their individual opinions and occasionally were designed to create confusion or add conflict. Students worked to develop the optimal solution for their individual functional groups, and there was some evidence that the senior cadre used more quantitative techniques than the junior cadre (Niebuhr and Norris, 1980).

A short break was given, and for the final two hours both cadres were combined in a large meeting hall to develop a single solution to the problem of siting the new production facilities. This portion of the simulation required 100 students in 20 functional groups to organize themselves into a single functional unit, identify the fundamental differences in their assigned goals, and create a final plan. One of the facilitators adopted the role of Chairman of the Board, and another became the Chief Executive Officer, and the facilitators circulated among the group asking questions and making suggestions. The large group was allowed to interact for an hour and a half before

the facilitators called for the solution. Spokesmen for the group presented a plan which was initially found to be unsatisfactory by Chairman of the Board. The group was given an additional fifteen minutes to develop an alternate plan, which was also found to be unsatisfactory. In the debriefing that followed, it was explained to the class that they had been operating with conflicting goals and that the purpose of the simulation was to see how they handled this conflict.

## BEHAVIOR OF PARTICIPANTS

The behavior of the participants in a large group differs from that shown in smaller groups. During the first part of the simulation, the students were effectively working as small groups. Each of the 20 functional groups had a specific task, and each group of four or five students set about finding its individual solution. Those groups with a certain level of expertise addressed their specific problem in a direct manner. Some groups acted as teams of equals while others had an obvious leader. Some used laptop computers with spreadsheet programs while others used pencil and paper to make notes. Those groups that felt more confident in their abilities asked fewer questions of the facilitators. These behaviors were similar to those noted in other simulations.

A major behavioral shift was noted during the second half of the simulation where all 20 groups met to develop a common solution. With smaller classes, a typical strategy is that one member of each functional group is a representative to a "central committee". This central committee may choose to ask for input from others or make the final decision on its own. Sometimes the excluded students will form around the central committee and offer unsolicited opinions. Some students simply let the others do the work. Both of these processes had been noted in previous PanPac exercises.

In this group of 100, one of the members of the senior cadre took immediate control of the microphone and called for one representative from each group to come to the front of the room. Within two minutes another more forceful member of the senior cadre had taken the microphone and assumed leadership. A nucleus of about four or five senior cadre members formed a "senior management" group that then attempted to run the entire session. The other 15 people who came forward as representatives were treated as second class citizens. Within a few minutes, the central committee had discovered that some of the groups had identical goals, and the leaders attempted to begin an orderly discussion about what the goals were and what solutions were proposed. This approach may be something advocated in text books, but in this simulation it failed.

There were two factors that led to the failure of the "traditional" management approach. The first problem was that the size of the central committee was too large. There were 20 representatives, each of which had his or her own solution to present and argue for. When the "senior management" group tried to take control of the proceedings, there was resentment among the other members of the

central committee. The discussion quickly became unfocused.

The second problem with this approach to achieving resolution was that there were still 80 people milling around in the background. These players all had a vested interest in the outcome, but they could see that they had no say in what was happening. They sat around in groups and talked about other matters or complained about the way they were being treated. Eventually a large group formed at the rear of the room and began to develop its own solution. This was a group of about 30 or 40 people who all took part in the discussion. Everyone was seated, and those in the middle acted as a "shadow" central committee, but there was continuous input from all around, and the central committee took all this into account. There were also several independent groups of three or four people who worked on their own solutions.

An unexpected development was the attitude of the senior cadre to the junior cadre. The members of the senior cadre took control and virtually ignored any input from the junior cadre. The senior cadre dominated the front of the room, and the junior cadre formed the "shadow" government at the back of the room. There was little or no communications between the two groups, and optimal solutions were developed independently. The small, independent groups also had solutions, but it cannot be claimed that these solutions had wide support. There was little evidence of groupthink (Edman, 2006) in the two large groups. Participants were ready to negotiate to find a common solution rather than attempt to champion their individual solutions.

## THE DEBRIEFING

The debriefing is arguably the most important part of any simulation, and it must be well thought out in order to enhance the learning experience (Warrick, et al, 1979). The first part of the debriefing was actually the presentation of the optimal solution by the students. One of the facilitators played the role of the President of IndoAmerican. The students were his senior managers who had develop a plan to be presented to the CEO of IndoAmerican, a role played by another facilitator. The first plan that was presented came from the members of the senior cadre who had dominated the front of the room. This plan was presented with great confidence, only to meet with disdain from the CEO who pointed out several perceived flaws. It should be noted that this initial rejection was a planned part of the simulation. There are so many different factors involved in the problem that the students had to ignore what they consider to be minor items to find a single solution. The CEO then pointed out to them that those "minor items" were actually quite important and rejected the initial solution. The CEO informed the President that he was displeased, gave the group fifteen minutes to come up with a good solution, and then left the room.

After about ten minutes, the President sought out the CEO and informed him that another solution was ready. This solution had been the one developed by the "shadow"

management team. This solution was also found to be lacking, and the CEO informed the President that the entire exercise had been unsatisfactory and left the room. After a pause of about 30 seconds, the President announced that the simulation was over, and the CEO came back into the room.

The debriefing by the facilitators began by pointing out that there was no optimal solution to the problem. This was done because there really is no optimal solution, and students who had invested time and effort had to be made to understand that the simulation focused on process more than result. This helped to defuse any sense of betrayal and allow the students to listen to the rest of the debriefing with an open mind. This is one of the key points in this type of simulation. Participants have a vested interest in the optimal solution that they suppose to exist and tried to find. It is sometimes a revelation to students that situations exist where the skills they learned in the classroom may not be sufficient in a real-world, complex problem.

The facilitators then began what can best be described as a “tag team” commentary. The discussion initially focused on the organization of the large group and how it conducted its business. Each facilitator made initial comments, and each facilitator was free to follow the flow of the conversation and interrupt, if necessary, to make appropriate comments. This collaborative approach to a debriefing requires that the multiple debriefers willingly work together and allow themselves to be interrupted for the good of the class. It is not a matter of one person being “smarter” than another; it is a process where different people see a situation through different eyes and have different perceptions. This requires a level of mutual respect that comes from working together and having experience with simulations. It demonstrates to the students how managers and employees work in the real world. Good communications and respect for fellow workers can make or break a company. There were several “lessons learned” that became important to the discussion. (The ordering of list does not imply any particular level of importance.)

- ! Large groups of problem solvers may be unable to process large amounts of information, communicate with each other, and organize themselves.
- ! During the first two hours when the cadres were operating independently, the questions asked in each group were similar. This indicates that the problem solving styles of both cadres were similar.
- ! Leadership of a large group may be more effective if approached as a “stewardship” position. A strong leader that pushes for his/her personal goal may be less effective than a person who demonstrates concern for all parties in trying to reach a compromise solution.
- ! Competitiveness, politics, and rivalry between individuals and functional groups can prevent effective completion of the task.

- ! All participants must check their egos at the door. In this simulation, the senior cadre members acted superior and ignored suggestions from the junior cadre. This led to a number of internal roadblocks that hindered communications and slowed solution development.
- ! Pressure undermines good problem solving. It is important to recognize limitations of time and resources, but such limitations should not be allowed to interfere with the solution process.
- ! The hardest problems to solve are those that are hidden or unspecified. Participants only see the symptoms of the problem and must be able to use those symptoms to determine the true underlying situation. These are the types of situations which can create solutions of great value to the organization.
- ! Frustration is a symptom of a hidden or unspecified problem. Participants should learn to recognize that when they become frustrated when attempting to solve a problem that they may be attempting to solve the wrong problem.
- ! Organizations may intentionally or unintentionally set goals for internal units that are mutually incompatible. This can cause internal conflict and result in processes and results that are ill-conceived, haphazard, and/or ineffective.
- ! If organizational structures are broken, they must be fixed. Restructuring is not necessarily a sign of weakness.
- ! If you have a good idea, speak up. Then listen for better ideas.
- ! Focus on the goal of the organization rather than the goal of the group.
- ! Always be ready to explain “why” you did what you did.
- ! Any information given must be understandable to all participants. In this instance, the participants were not native English speakers. At one place in the Briefing Book the phrase “all costs are reflected in the figures given in the table”, and some participants were confused by the idiomatic use of the words “reflected in”.

## CONCLUSION

IndoAmerican Enterprises is a large scale simulation that can be used to introduce students to the concepts of problem identification and cooperative solution making. Groups are given mutually incompatible goals and allowed to develop “optimal” solutions in isolation. When the

groups are combined, participants discover that their individual solutions conflict, and efforts must be made to reconcile the differences. Subsequent actions to arrive at a common acceptable solution reveal much about group dynamics and individual behaviors. The exercise can be used with very large groups of students if the facilitators have experience in conducting simulations. The debriefing period can be a very rich source of material that can be used in later classes. IndoAmerican Enterprises and similar simulations provide a meaningful classroom experience for both students and teachers.

Warrick, D., P. Hunsaker, C. Cook, and S. Altman (1979). "Debriefing Experiential Learning Exercises", *Journal of Experiential Learning and Simulation*, Volume 1, pp. 91-100.

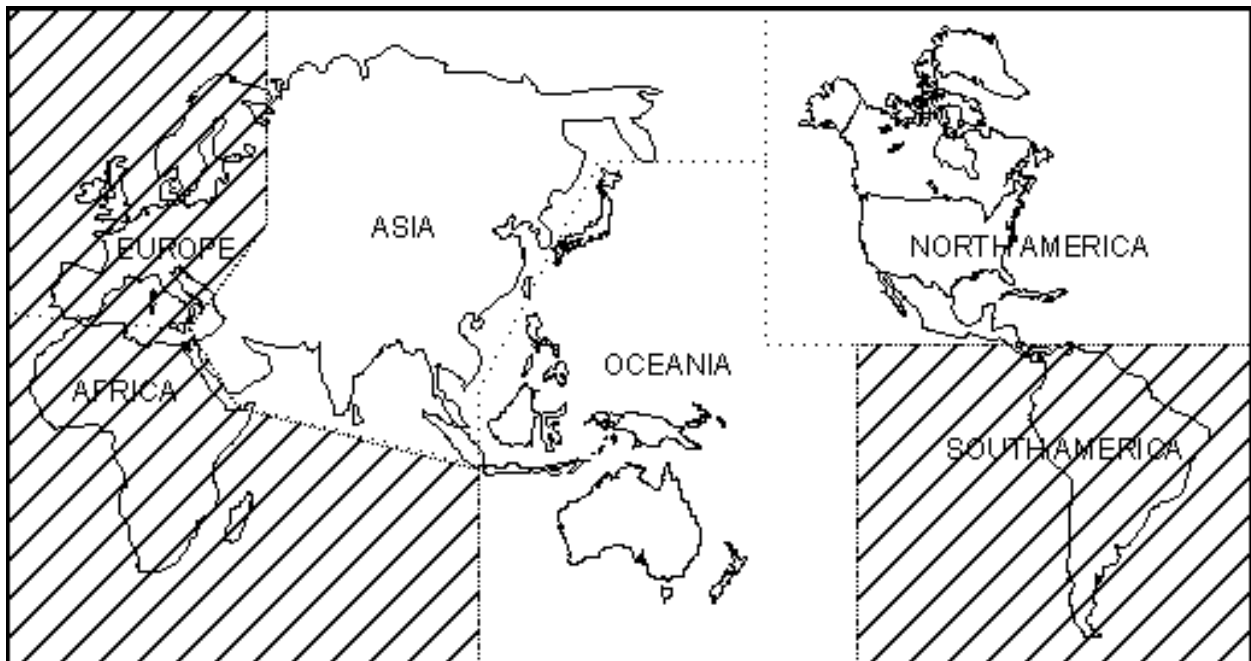
## REFERENCES

- Anderson, P. and L. Lawton (2005). "The Effectiveness of a Simulation Exercise for Integrating Problem-Based Learning in Management Education", *Developments in Business Simulation and Experiential Learning*, Volume 32, 10-18. Reprinted in the *Bernie Keys Library*, 8<sup>th</sup> edition [Available from <http://ABSEL.org>]
- Bossung, S. and K. Morse (2000). "Experiential Learning Across Disciplines: Mixing International Business and Accounting", *Developments in Business Simulation and Experiential Learning*, Volume 27, 101-107. Reprinted in the *Bernie Keys Library*, 8<sup>th</sup> edition [Available from <http://ABSEL.org>]
- Brozik, D., A. Zapalska, and C. Cassidy (2005). "Pan-Pacific Enterprises: Strategic Decision-Making in Action", *Journal of Business Case Studies*, Volume 1, Number 2, 39-47. Reprinted in the *Bernie Keys Library*, 8<sup>th</sup> edition [Available from <http://ABSEL.org>]
- Cassidy, C., D. Brozik, and D. Brozik (2005). "Problem Discovery and Problem Solving in Unstructured Situations: Using the Pan-Pacific Enterprises Simulation with University Students", *Journal of Business Case Studies*, Volume 1, Number 2, pp. 1-10.
- Edman, J. (2006). "Group Composition and Groupthink in a Business Game", *Developments in Business Simulation and Experiential Learning*, Volume 33, 278-283. Reprinted in the *Bernie Keys Library*, 8<sup>th</sup> edition [Available from <http://ABSEL.org>]
- Hall, J. (2007). "Computer Business Simulation Design: Novelty and Complexity Issues", *Developments in Business Simulation and Experiential Learning*, Volume 34, 393-403. Reprinted in the *Bernie Keys Library*, 8<sup>th</sup> edition [Available from <http://ABSEL.org>]
- Niebuhr, R. and D. Norris (1980). "Gaming Performance: The Influence of Quantitative Training and Environmental Conditions", *Journal of Experiential Learning and Simulation*, Volume 2, pp. 65-73.
- Page, D. and A. Mukherjee (2006). "Using Negotiation Exercises to Promote Critical Thinking Skills", *Developments in Business Simulation and Experiential Learning*, Volume 33, 71-78. Reprinted in the *Bernie Keys Library*, 8<sup>th</sup> edition [Available from <http://ABSEL.org>]

APPENDIX

EXHIBIT 1

# IndoAmerican Enterprises



## BRIEFING BOOK

# IndoAmerican Enterprises

## COMPANY OVERVIEW

IndoAmerican Enterprises (IndoAm) is a multinational firm with production, distribution, and marketing activities in Asia, the Pacific Basin, and North America. The stated goal of the firm is to maximize the returns to its shareholders by developing and marketing superior products that meet the needs of the consumers while providing a challenging and rewarding environment for employees. IndoAm is integrated through all aspects of the production process from raw materials, through intermediate products, to final consumer goods. The firm is run by an aggressive management team that continually seeks new business opportunities.

## PRESENT SITUATION

The IndoAm management team is about to develop next year's strategic plan. This plan will encompass all of the firm's activities, but as a practical matter it will primarily focus on expansion projects. The existing plants and marketing efforts are all in satisfactory condition and are expected to remain so for the next several years. Due to the nature of the markets in which IndoAm operates, new activities will not directly affect existing operations, so it will not be necessary to worry about cannibalization for this planning period.

## FINANCIAL ENVIRONMENT

IndoAm's size makes it possible for the firm to deal with financial institutions around the world. The company's stock is widely held, and all previous bond and stock issues have been well received by investors. The firm's performance has been such that there should be no difficulty in selling the securities necessary to finance any new projects. IndoAm is also on good terms with major

international banks and has the ability to borrow short-term funds as needed. The new strategic plan will therefore be able to focus on the projects themselves rather than be concerned with sources of external funding.

## MARKET AREAS

IndoAm has identified several global areas which function as distinct product markets. IndoAm operates in three of these areas: Asia, North America, and Oceania. The map on the cover of this Briefing Book shows the extent of each of these market areas.

## PRODUCTION PROCESS

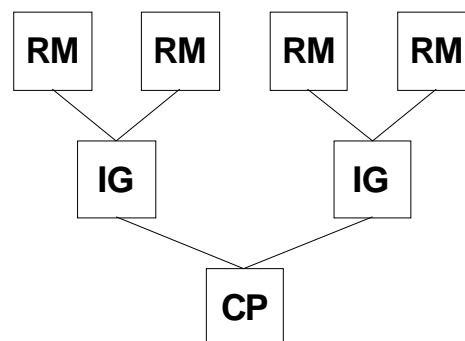
IndoAm's production processes fall into three distinct categories.

**Raw Materials (RM)** - This aspect of production involves mining ores and minerals, drilling for petroleum-based products, and harvesting renewable resources like timber.

**Intermediate Goods (IG)** - In this part of the production process, the raw materials are converted to commodity stocks like metal ingot, plastic sheeting, and finished lumber and preassembled frames.

**Consumer Products (CP)** - Intermediate goods are transformed into finished goods and sold to the ultimate consumers.

Based on the mix of products offered, IndoAm has found that it takes four units of raw materials to create two units of intermediate goods which can then be made into one unit of consumer products. This relationship is known as the 4/2/1 mix and is illustrated below:



It is expected that this relationship will remain the same for any new projects undertaken. Since IndoAm's raw materials and intermediate goods are similar to those offered by other firms, such products are considered substitutes. In

practice that means that the factories that manufacture intermediate goods are not required to purchase raw materials from other IndoAm subsidiaries, nor are these factories required to sell their products to those IndoAm

subsidiaries that manufacture consumer products. Each step of the production process can be considered to be independent from every other step.

Any division of IndoAm can purchase any of its inputs or sell any of its output to any other company. This also means that the transfer prices used when IndoAm's units do sell to each other are the market prices of the goods. There are no internal subsidies created by inappropriate transfer prices. Due to the nature of the various markets, any input can be purchased in sufficient quantity at market prices, and all outputs can be sold at market prices. Products purchased from or sold to outside organizations, whether inside or outside the geographic area, are charged the transportation and distribution costs associated with inter-area transfers of goods produced by IndoAm.

IndoAm has two production policies relevant to this planning process. IndoAm does not want to become dependent on secondary markets for its products. To this end, the firm will only manufacture enough product to meet its projected demand in all product categories. If it is more economical to sell goods to outside firms in one market and buy the same goods from outside firms in another market, that is acceptable as long as the total amount manufactured by IndoAm production facilities equals the total amount needed by other IndoAm units. Corporate policy also limits the amount of merchandise that can be purchased from outside organizations to no more than 25% of the total unit volume of IndoAm sales in each respective product category. While there is no restriction concerning how much product can be sold to outside organizations, this restriction on outside purchases and the requirement for balanced production effectively means that no more than 25% of IndoAm products will be sold to outside firms.

To illustrate these two restrictions, assume that IndoAm projects a total demand of 10,000 Consumer Products across its three geographic market segments. The firm will then produce 10,000 Consumer Products at its various manufacturing facilities. Further assume that 5,000 of these Consumer Goods were destined for the Asian market. Those 5,000 goods could be manufactured in Asia and used locally, manufactured in North America or Oceania and shipped to Asia, or purchased from outside suppliers in Asia. For each unit purchased from an outside supplier in Asia, another unit manufactured in North America or Oceania would be sold to an outside firm in order to keep production and sales in balance according to corporate policy. No more than 2,500 units of Consumer Goods can be purchased from or sold to outside firms in order to keep within the 25% guideline.

## **PLANNING PROCESS**

Since a strategic plan must consider all aspects of an organization's operations, IndoAm requires each of its

functional areas to prepare its recommendations and present them to a senior management team. The functional areas are as follows:

**Executive Management** - IndoAm's senior administrators are responsible for any and all plans and obtaining the funding to carry out those plans. This group is responsible to the shareholders and tasked with the running of the firm.

**Employee Relations** - This group is responsible for identifying and providing the labor necessary for the production carried out in various locations at the lowest cost.

**International Relations** - Due to its market size, IndoAm must work with the governments of various countries. This group monitors political conditions throughout the world and attempts to assure that IndoAm is a good corporate citizen in all areas.

**Production Planning** - There are differences in the costs associated with production in the different geographical areas. This group identifies those cost differentials and attempts to minimize overall production costs.

Each functional area is composed of one or more groups, each of which focuses on a specific planning task. Each group makes its recommendations to the Executive Management Team. The Executive Team will weigh these recommendations and resolve any conflicts that might occur. The Executive Management Team will be responsible for developing the final version of the five year strategic plan. Each functional area group has specific factors that must be considered in developing its recommendations. This information is provided separately to each group.

## **ACCOUNTING PROCEDURES AND COST/PRICE INFORMATION**

Due to its size and international presence, IndoAm deals in many different currencies. In order to simplify internal communications, the accounting department reports all monetary values in an Artificial Currency Unit (ACU) instead of rupees, dollars, yen, or yuan. The ACU is a weighted average of all currencies used by IndoAm, adjusted for the various inflation rates of the various currencies. This procedure has been in place for several years and has proven to be satisfactory for planning purposes; it will be used for the current planning process.

The following information has been collected concerning IndoAm, its markets, and future opportunities. The current market demand is being met by existing factories, but they are operating at full capacity. It will be necessary to build new factories in order to supply any new demand. For each of the market areas, there are three possible products, resulting in 9 distinct product/area segments.



CURRENT MARKET DEMAND (units)			
	Raw Materials	Intermediate Goods	Consumer Products
North America	2,000,000	1,200,000	750,000
Asia	1,500,000	800,000	350,000
Oceania	1,500,000	500,000	200,000

PROJECTED AVERAGE ANNUAL REAL GROWTH RATE IN DEMAND			
	Raw Materials	Intermediate Goods	Consumer Products
North America	5%	10%	10%
Asia	15%	9%	16%
Oceania	10%	7%	9%

HOURS OF LABOR/UNIT OF OUTPUT			
	Raw Materials	Intermediate Goods	Consumer Products
North America	2	3	2
Asia	4	4	6
Oceania	3	3	3

CURRENT HOURLY LABOR COSTS (ACU)			
	Raw Materials	Intermediate Goods	Consumer Products
North America	2	4	5
Asia	0.8	1	3
Oceania	1.2	2.5	4

PROJECTED AVERAGE ANNUAL REAL GROWTH RATE IN LABOR COSTS			
	Raw Materials	Intermediate Goods	Consumer Products
North America	4%	6%	5%
Asia	10%	9%	12%
Oceania	5%	8%	8%

TRANSPORTATION COSTS			
TRANSPORTATION AND DISTRIBUTION COSTS WITHIN A GEOGRAPHIC MARKET AREA (North America, Asia, Oceania)		Reflected in the Production Cost value	
TRANSPORTATION AND DISTRIBUTION COSTS TO ANY OTHER GEOGRAPHIC MARKET AREA (Asia to North America, Asia to Oceania, North America to Asia, North America to Oceania, Oceania to North America, Oceania to Asia) AND ALL GOODS PURCHASED FROM OR SOLD TO OUTSIDE ORGANIZATIONS		3 ACU/unit (for all products)	
PRODUCTION COSTS PER UNIT OF OUTPUT (ACU)			
	Raw Materials	Intermediate Goods	Consumer Products
North America	2.0	3.0	5.0
Asia	1.2	2.0	3.0
Oceania	1.5	2.6	4.0
NOTE: These figures for each product category reflect all fixed and indirect costs. It does not include labor costs or the costs direct inputs used to make a standard product. Due to the nature of the process, there are no direct inputs to raw materials; all production costs are reflected in this value. These figures are valid for both current production and any new production.			

NEW FACTORY PRODUCTION CAPACITY (units)			
	Raw Materials	Intermediate Goods	Consumer Products
North America	200,000	250,000	200,000
Asia	250,000	300,000	300,000
Oceania	200,000	250,000	250,000
NOTE: Though the factories for each product category make a standard product that can be sold anywhere, differences in local environmental regulations and infrastructure result in different levels of production.			

MARKET SELLING PRICE PER UNIT (ACU)			
	Raw Materials	Intermediate Goods	Consumer Products
North America	7.00	37.00	110.00
Asia	5.50	20.00	80.00
Oceania	6.00	27.00	90.00

PROFIT PER UNIT WITHIN GEOGRAPHIC AREA (ACU)			
	Raw Materials	Intermediate Goods	Consumer Products
North America	0.640	7.295	20.550
Asia	0.780	2.045	15.355
Oceania	0.720	4.910	21.450

## NEW DEVELOPMENTS

Members of the Executive Management team have recently held discussions with government officials in both South America and Africa. IndoAm currently has no direct manufacturing or trading relations with either of these areas. These talks are in the preliminary stages, but it seems that these markets could be developed in the near future.

Negotiations in Africa center around acquisition of raw materials because most of the residents do not have sufficient disposable income to purchase IndoAm products. Several countries have expressed interest in IndoAm developing oil fields, mineral deposits, and/or timber resources. These countries are encouraging investment from foreign companies in an effort to create jobs and develop infrastructure. There are no plans at this time to build factories for intermediate or consumer goods; any African production would deal solely with raw materials.

The Statistical Analysis Division of IndoAm estimates that the production capacity of these projects would be roughly 50% of the production capacity of Oceania (as shown in the Current Market Demand table), but due to relatively lower construction and labor costs the net profit per unit would be 40% higher than the profits currently realized in the Asian market (as shown in the Profit per Unit within Geographic Area table).

Market research conducted in South America has shown that a number of IndoAm's consumer products would be in demand if offered. The status of various multinational trade agreements and the infrastructure makes the development of raw materials or the manufacturing of intermediate or consumer goods inappropriate at this time. Those consumer goods that will be sold will be shipped into these markets from North America in order to avoid import tariffs. It is estimated that the demand for consumer products will be roughly equal to Asia (as shown in the Current Market Demand table), and the profit margin will be about the same as Oceania (as shown in the Profit per Unit within Geographic Area table).

The Statistical Analysis Division has made no estimates concerning potential shifting of production between the various geographic divisions, but it is expected that any changes will reflect the firm's goals of profit maximization and having a maximum of 25% trade (both buying and selling) with outside organizations. There has been no formal announcement concerning whether or not the African and South American initiatives will be undertaken, but internal communications indicate that there is a very high probability that both will begin during the next production cycle. All groups have been instructed to make their plans under the assumption that these initiatives will be undertaken.

## CURRENT REQUIREMENTS

Each functional group needs to develop recommendations for the siting of new production facilities. Each group will be required to present its recommendation to the Executive Management Team which will have the final responsibility for determining where the facilities will be located. Each presentation should include the following information:

1. The types and locations of factories to be built.
2. The source of each factory's inputs, if applicable (internal or external).
3. The final market of each factory's output (internal or external).
4. The amount of sales/purchases to outside organizations.

Following the groups' presentations, there will be a period of discussion during which any group may ask questions of any other group. The purpose of this period is to highlight any strengths and weaknesses of the various plans so that the Executive Management Team will be able to incorporate this information into its final decision.

## EXHIBIT 2

<b>FUNCTIONAL GROUPS (pairs)</b>	
Asian Management Group	Far East Management Group
Construction Services Group	Building Services Group
Consumer Products Management Group	Cost Containment Management Group
External Marketing Group	Competitive Management Group
Facilities Management Group	Site Location Management Group
Intermediate Good Management Group	Production Costs Management Group
International Relations Group	Global Relations Group
North American Management Group	Western Management Group
Oceania Management Group	Pacific Management Group
Raw Materials Management Group	Input Management Group

## **EXHIBIT 3**

# **IndoAmerican Enterprises**

### **CONSUMER PRODUCTS MANAGEMENT GROUP**

The Consumer Products Management Group is an internal group of managers with a regional focus for maximizing corporate operations in its area of responsibility. The goal of this group is to achieve the lowest possible costs for producing consumer products. For strategic planning purposes, this implies that new investment will be in low priced production areas. It will be necessary to calculate the number and types of new facilities that will be needed. It will also be necessary to consider the effects of transportation costs on any planned distribution of production facilities.

IndoAm uses a “watermark” system for determining incentive compensation for this group. Each planning cycle, a “watermark” is set that reflects costs from the previous period, adjusted for inflation. In order to qualify for an incentive bonus, the group must do better than the established watermark. The watermarks for this year are 4.0 ACU per unit of intermediate consumer products.

Actual costs are compared to the watermark targets, and for each 0.10 ACU difference below watermark, group members will receive a 3% incentive bonus. For example, if the average cost of producing one unit of Consumer Products is 0.20 ACU less than the target of 4.0 ACU, each group member will receive a 6% bonus. If the average production cost is 0.20 ACU above the target or greater, no bonus will be given.

### **RAW MATERIALS MANAGEMENT GROUP**

The Raw Materials Group is an internal group of managers with a regional focus for maximizing corporate operations in its area of responsibility. The goal of this group is to achieve the lowest possible costs for producing raw materials. For strategic planning purposes, this implies that new investment will be in low priced production areas. It will be necessary to calculate the number and types of new facilities that will be needed. It will also be necessary to consider the effects of transportation costs on any planned distribution of production facilities.

IndoAm uses a “watermark” system for determining incentive compensation for this group. Each planning cycle, a “watermark” is set that reflects costs from the previous period, adjusted for inflation. In order to qualify for an incentive bonus, the group must do better than the established watermark. The watermark for this year is 1.5 ACU per unit of raw materials production.

Actual costs are compared to the watermark targets, and for each 0.10 ACU difference below watermark, group members will receive a 4% incentive bonus. For example, if the average cost of producing one unit of Raw Material is 0.20 ACU less than the target of 1.5 ACU, each group member will receive a 6% bonus. If the average production cost is 0.20 ACU above the target or greater, no bonus will be given.