

# **Developments In Business Simulation & Experiential Exercises, Volume 23, 1996**

## **ADMINISTERING BUSINESS SIMULATIONS IN TRANSITIONING ECONOMIES: THE INTRODUCTION OF SIMULATION GAMING TO ESTONIA**

A.J. Faria, University of Windsor  
J. R. Dickinson, University of Windsor  
Rein Peterson, University of Windsor

### **ABSTRACT**

The use of business simulation games is a widespread activity in North America (Faria 1987). The use of business games in former Eastern bloc countries, on the other hand, is very new. Knowledge of marketplace characteristics, experience with formulating marketing strategies, and other managerial activities taken for granted with students in North America cannot be assumed when using simulations elsewhere.

### **INTRODUCTION**

The trend toward internationalization of management and management education has become so commonplace as to be taken for granted. Though actual internationalization is still evolving, that it will continue to evolve is irrefutable. In the realm of experiential learning, this evolution is evidenced in numerous ways:

- international participation in professional conferences,
- simulation and gaming conferences jointly sponsored by associations from several countries (e.g., joint ISAGA/ABSEL and SAGSET/ABSEL conferences),
- the creation of international games and exercises and the incorporation of international aspects into existing games and exercises (e.g., Keys, Edge and Wells 1 992; Thorelli, Graves and Lopez 1 995), and
- simulation competitions drawing competitors internationally (e.g., 1 994 ABSEL competition with teams from three countries).

In recent years, North Americans have made several forays into other countries for the purpose of introducing or promoting the use of simulation games and, in turn, to learn about the state of gaming elsewhere. For example, the White

Nights Conference held in St. Petersburg, Russia in 1992 (during which four ABSEL members demonstrated North American simulation games) celebrated the fiftieth anniversary of gaming in Russia, a history far longer than that of North America. Discussions of business simulation usage outside of North America can be found in Burgess (1991), McKenna (1991) and Wolfe (1993). Wolfe (1993), in particular, presents an interesting history of simulation gaming in the former Soviet Union.

### **BACKGROUND**

Estonia, one of the first former U.S.S.R. countries to declare independence and to re-establish itself as an independent state, has made substantial progress in implementing its bold program for transformation to a democratic market-based economy. The Estonian reform processes face widespread obstacles, many of which are directly related to the seriously distorted price system imposed centrally under the Soviet economic regime. These obstacles cannot be surmounted unless there is a widespread understanding among managers, employees and consumers about how a market economy works.

The World Bank, International Monetary Fund, and the European Bank for Reconstruction and Development have all recommended major systemic reforms in Estonia through the privatization of government owned enterprises and the startup of new businesses. This has created an overwhelming demand for individuals who have training in how to operate in a market-based economy.

Fostering management development is the mission of the Baltic Initiatives Program administered by the Foundation for International Training (FIT) in Ottawa, Canada. The Foundation for International Training is an agency funded by External Affairs and International Trade Canada. FIT was formed as part of Canada's commitment with the other G7 nations to provide financial and managerial assistance to countries of Central and Eastern Europe.

## Developments In Business Simulation & Experiential Exercises, Volume 23, 1996

Our proposal to FIT was to conduct a program in Estonia to “Train the Trainers,” with the aim of leaving behind an enhanced, ongoing training capability there. FIT provided a supporting grant, supplemented by financial and other resources from the University of Tallinn (Estonia) and Alexela Limited, Estonia’s second largest petroleum company.

### FORMAT

The primary objective of our program, which we called MARKETRAIN, was to introduce simulation gaming to management trainers, in various capacities, in Estonia. Accordingly, the core of our program, which ran for one week, was participation in The Marketing Management Simulation (Dickinson and Faria 1995) or MMS for short. MMS is a straightforward introductory level marketing simulation. Progression of the MMS is on a period basis, with competitors formulating strategy decisions, submitting these to the simulation administrator, receiving results, and continuing on to formulating the next period’s strategy decisions. Interspersed among the strategy formulation-results assimilation sessions were seminars introducing the simulation game and on related marketing management topics such as marginal analysis, strategy planning, the marketing mix, entrepreneurship, and the like.

### LOGISTICS

Communication within the program was in English. Participants had varying degrees of English fluency, but all were at least conversant in the language. Simulation team group members usually sat together and they were, thus, able to clarify communications to each other. Too, the third author is fluent in Estonian and was able to facilitate communication on an ad hoc basis. (Elsewhere, specifically in earlier seminars in China and Russia, we have found that both conducting seminars and administering a simulation competition are not hampered by the use of simultaneous interpreters.)

For the simulation competition, MMS runs on a standalone IBM-compatible personal computer. Such a computer and accompanying printer were readily available at the University of Tallinn and no problems were encountered in this area. However, printouts for the MMS contain a

maximum of 79 characters per line at 10 characters per inch, starting in the first position. The printer provided did not print the 79th character and we were obliged to transcribe these ending characters from screen displays of the same information.

Small problems of this nature might always be anticipated. In Russia, for example, we were promised a computer lab for our sessions with forty personal computers. The computer lab, as promised, did have forty personal computers. Unfortunately, only fifteen of them worked.

As we had only three full seminar days in Estonia, the MMS Participant’s Manuals were sent to the University of Tallinn approximately thirty days prior to the start of the seminar. The manuals were to be delivered to seminar participants to be read in advance of the seminar. In this fashion, questions about the simulation could be answered on Monday, teams could be formed, and the first MMS decision could be submitted on Tuesday morning.

### PARTICIPANTS

Approximately 35 people attended the MARKETRAIN program and took part in the MMS simulation competition. Several of the participants were business faculty members at the University of Tallinn, the Agricultural University, and the University of Tartu, with other participants representing Alexela Petroleum Company, the Estonian Management Institute (EMI), the Estonian Chamber of Commerce, and several other businesses. In addition to introducing business simulations to Estonian universities, then, this seminar also provided the opportunity to introduce business games as a management or executive training tool.

The MARKETRAIN participants were formed into two industries of four companies each. In the MMS companies compete only against other companies within their industry. As is our practice in North America, a trial period was administered allowing participants to gain familiarity with the simulation environment and lessen the early trial and error of strategy formulation that inevitably takes place. After the trial period, the competition was restarted anew and strategies were formulated over eight decision periods.

# Developments In Business Simulation & Experiential Exercises, Volume 23, 1996

## PARTICIPANTS' STRATEGIES

For each competition period, companies' decisions and results were retained for subsequent analysis. Expectedly, the marketing strategies developed by the Estonian participants in the simulation competition were conservative.

A comparison reference may be provided by a class of M.B.A. students at the University of Windsor who played the MMS during the semester ending about two months before the Estonian program as part of an Introduction to Marketing course.

In MMS, industry environments--specifically, market response sensitivity to most decisions--may be partially specified by the administrator. As well, during the course of a competition, different industries take on different collective "mentalities" with market potential expanding and contracting accordingly. Summary statistics, then, may generally not be agglomerated across companies in different industries.

The MMS decision mix comprises 48 decisions. Twelve decisions, i.e., marketing research requests, do not affect demand directly. Four decisions, i.e., product shipments, do not stimulate demand. Of the remaining 32 decisions, eight are qualitative, relating to advertising message type and type of sales promotion program. Twenty-four decisions, then, both stimulate demand and are numeric in nature.

For each company, three descriptive statistics were calculated for each of the 24 decisions:

- mean value taken over eight (Estonia) or nine (Windsor) simulation periods,
- standard deviation taken over eight or nine simulation periods, and
- the coefficient of variation, i.e., the standard deviation divided by the mean value as described above.

The mean of each of these statistics taken over all companies (eight in Estonia, thirteen in Windsor), then, was calculated. Results are presented in Table 1. Table 2 presents the Estonian value divided by the Windsor value for each of the three statistics presented in Table 1. Table 2 also presents correlations of decision values with period numbers, eight

periods for Estonia and nine periods for Windsor.

## DECISION VALUE INTERPRETATION

The conservatism of the Estonians' strategies is virtually complete. Over all decisions, the mean value for Estonians is between 21 and 88 percent of the mean value for Windsorites (see Table 2). Not only were their strategies more conservative in terms of resources expended, but the Estonians were much less willing to vary their strategies. Decision standard deviations for the former amount to only between 11 and 73 percent of the latter across the 24 decisions.

It is normally the case in any administration of the MMS that competitors are initially conservative, eventually realizing that more aggressive strategies are generally more effective. This is reflected in positive correlations of decision values with period numbers, i.e., becoming more aggressive as the competition proceeds. Here again, Estonian correlations for each of the 24 decision variables are all lower than the corresponding correlations for the Windsor players. It is the case that the Estonians did generally increase their market stimulating decisions over time, but not to the extent of the Windsorites.

As noted, it was anticipated that the Estonians would be conservative in their strategies. Among the benefits of simulation gaming is that much experience can be gained in a short period of time and that simulation experience does not come at the high risk of real-world experience. Simulation, then, is an ideal vehicle for helping to instill a more competitive strategy posture in managers accustomed to implementing decisions rather than making decisions. Over time, it was hoped that this would be accomplished through the use of the MMS competition: Additional comments as to the conservative nature of the Estonian participants' simulation decisions will be made below.

## BREAKING MINDSETS

In the course of the simulation competition, focus among the Estonian participants remained near-myopically on maintaining low prices and minimizing costs. The MMS comprises nine different types of demand-affecting decisions, of which price is but one. By its nature, the simulation is designed to encourage the use of marketing strategies balanced

## Developments In Business Simulation & Experiential Exercises, Volume 23, 1996

Table 1  
AVERAGE MEAN, STANDARD DEVIATION, AND COEFFICIENT OF VARIATION

<u>Decision</u>	AVERAGE MEAN		AVERAGE STD DEV		AVERAGE C OF V	
	<u>Est</u>	<u>Wnd</u>	<u>Est</u>	<u>Wnd</u>	<u>Est</u>	<u>Wnd</u>
Price T1, S100	705.2	1238.7	50.4	410.6	0.07	0.32
Broadcast Advert	7.1	34.1	5.0	20.7	0.65	0.57
Print Advert	8.2	36.4	4.3	24.0	0.70	0.67
Trade Advert	6.2	19.9	3.4	15.7	0.57	0.70
Price T1, D200	11.95	1723.0	58.2	531.8	0.05	0.28
Broadcast Advert	10.8	42.1	5.9	26.4	0.44	0.63
Print Advert	10.4	44.7	4.2	29.4	0.51	0.70
Trade Advert	7.3	23.9	3.8	17.7	0.47	0.69
Price. T2, S100	813.6	1326.4	35.6	419.9	0.04	0.31
Broadcast Adv	12.7	51.8	5.9	30.5	0.47	0.59
Print Advert	10.8	49.9	4.2	29.1	0.48	0.62
Trade Advert	8.2	25.5	3.8	18.2	0.48	0.61
Price. T2, D200	1278.0	1814.5	77.0	525.1	0.06	0.27
Broadcast Adv	17.2	63.0	7.0	37.3	0.40	0.62
Print Advert	13.8	54.1	6.2	31.9	0.43	0.61
Trade Advert	9.2	29.8	4.2	21.0	0.44	0.61
Co-op Adv %, T1	1.4	2.7	0.5	1.1	0.35	0.39
Co-op Adv %, T2	2.0	2.7	0.8	1.1	0.41	0.44
R & D, S100	14.9	42.9	14.6	33.5	1.16	0.75
R & D, D200	33.5	54.3	25.8	39.2	0.59	0.71
SF Size, T1	6.2	10.1	1.0	1.7	0.17	0.16
SF Size, T2	10.5	13.7	1.3	2.7	0.13	0.18
SF Salary	4998.4	7158.1	1257.8	1374.8	0.21	0.18
SF Commission	3.2	3.7	0.6	1.2	0.19	0.32

The MMS strategy decision mix comprises price, broadcast, print and trade advertising, a co-operative advertising percent and research development (a surrogate for product quality), and sales force size, salary, and commission. Decisions are made on a variety of territory ( territories 1 and 2) and product model (Standard 100 and Deluxe 200) bases.

across several decision variables. The three authors informally advised participants during every decision period and constantly cajoled them to be more aggressive in the nonprice aspects of their strategies. After the fifth decision period, we dedicated an ad hoc seminar session to the concept of gaining a competitive advantage on nonprice bases.

Despite the special session, not one of the eight Estonian companies took a leadership role in actively stimulating sales on a nonprice basis. In academic marketing terminology, the participants'

perspectives were in the production era, while for over fifty years industrialized nations have been in the marketing era. This principle is one of the most fundamental in marketing management training and there was jeopardy that this vital principle would not be assimilated by the participants.

Following the sixth decision period, we decided to be as blunt as possible. The Estonian speaking author, in the language of the participants, "strongly urged" each team to increase their marketing spending by 50 to 300 percent. Despite this strong recommendation, only two companies increased

## Developments In Business Simulation & Experiential Exercises, Volume 23, 1996

their marketing spending by a noticeable amount -and that amount was still well short of a 50 percent increase!

We had spoken to, as best we could, the potential benefit to firms from using more aggressive, balanced strategies. To demonstrate this potential within the context of the simulation game was our challenge. We dismissed the idea of simply substituting more aggressive decision values for one of the companies.

First, participants were taking the competition seriously. (The authors were also pleasantly surprised as to how

serious participants took our business games in Russia and China.) In our informal counseling of companies, we took care not to offer specific recommendations so as not to give unfair advantage and we did not wish to show what might be accomplished by a given company. Second, the selection of any single company to demonstrate a better strategy might serve to embarrass those participants, as the ineffectiveness of their strategies to date would be highlighted.

Our solution was to create a new industry, apart from the existing competition. The companies comprising the new industry included the leading

**Table 2**  
**ESTONIA/WINDSOR STATISTICS AND DECISION CORRELATIONS OVER TIME**

<u>Decision</u>	ESTONIA/WINDSOR			CORRELATION OVER TIME	
	<u>Mean</u>	<u>Std Dev</u>	<u>C of V</u>	<u>Est</u>	<u>Wnd</u>
Price T1, S100	0.57	0.12	0.22	0.13	0.78
Broadcast Advert	0.21	0.24	1.14	0.04	0.65
Print Advert	0.22	0.18	1.05	0.19	0.69
Trade Advert	0.31	0.22	0.81	0.24	0.68
Price T1, D200	0.69	0.11	0.17	0.52	0.81
Broadcast Advert	0.26	0.19	0.70	0.32	0.74
Print Advert	0.23	0.18	0.72	0.45	0.77
Trade Advert	0.30	0.18	0.68	0.58	0.75
Price. T2, S100	0.61	0.08	0.14	0.32	0.70
Broadcast Adv	0.25	0.19	0.80	0.03	0.74
Print Advert	0.22	0.14	0.77	0.34	0.80
Trade Advert	0.32	0.21	0.78	0.14	0.69
Price. T2, D200	0.70	0.15	0.22	0.50	0.68
Broadcast Adv	0.27	0.19	0.64	0.55	0.76
Print Advert	0.26	0.19	0.71	0.43	0.79
Trade Advert	0.31	0.20	0.72	0.69	0.72
Co-op Adv %, T1	0.51	0.40	0.91	0.00	0.07
Co-op Adv %, T2	0.73	0.73	0.93	0.13	0.13
R & D, S100	0.35	0.44	1.54	-0.00	0.36
R & D, D200	0.62	0.66	0.83	0.27	0.37
SF Size, T1	0.61	0.59	1.09	0.00	0.10
SF Size, T2	0.77	0.49	0.74	-0.06	0.32
SF Salary	0.70	0.71	1.15	0.47	0.65
SF Commission	0.88	0.53	0.60	0.15	0.19

Entries in the first three columns are results from Table 1 expressed as the ratio of Estonian Value to Windsor Value. Results in the last two columns are correlations of decision values with period number.

## Developments In Business Simulation & Experiential Exercises, Volume 23, 1996

companies in each of the Estonian competition's two industries. In the context of the ongoing competition, these two companies' strategies were the most effective. To this new industry we added a third company, named The Aggressor, to be managed by ourselves. We entered the actual Period 7 decisions for the two leading companies plus a much more aggressive strategy, including substantially higher prices, for The Aggressor company. There was still one remaining period in the competition and we were anxious that participants have an opportunity to reconsider their conservative strategies. These same decisions, then, were analyzed and repeated for three periods (allowing for lagged, cumulative, and other effects to develop). These results, then, were distributed among all the competitors.

Our play was partially successful. Decision values for the Estonian companies finally increased by about 38 percent for the nonprice decisions. However, price decisions increased by only 10 percent. In debriefing discussions, participants noted the high costs of the notebook computers they were marketing in the MMS competition relative to income levels in Estonia. Though by North American standards, wholesale prices between \$1,000 and \$2,000 are at the low end for notebook computers, in the Estonian economy, these prices are very high and simulation competitors were, understandably, not able to identify with the higher price marketplace of the simulation. And, of course, the necessarily low prices, from the perspective of the Estonians, very much limited the cash flow available to spend on other marketing strategy components.

### PROSPECTS FOR A SIMULATION GAME FOR TRANSITIONING ECONOMIES

One of our objectives at the start of the MARKETRAIN project was to investigate the development of a business simulation game suitable for use in transitioning economies. The simulation might take the participants through managerial decision-making and planning from a starting position in a planned economy through a gradual transition into a completely market driven economy. Exploration of this possibility with our Estonian audience did not prove very fruitful.

Among the former Soviet republics, Estonia has been one of the more successful in restoring its economy, having

achieved privatization of nearly 95 percent of former government holdings with complete privatization anticipated by the end of 1995. Politically, then, a "transitioning" simulation game might already be too late for this economy. This political rapidity, of course, is not necessarily mirrored in the development of a cohort skilled in managing in a capitalistic economy. This is the case in Estonia today. As such, the Estonian managers participating in the MARKETRAIN seminar were interested in a business simulation based on a western economy rather than a transitioning economy.

### VISITS TO ENTERPRISES

During the week following the seminar, the authors met with small groups at the University of Tallinn, University of Tartu, Estonian Management Institute, and several companies that had sent managers to the MARKETRAIN seminar. One such visit will be briefly described.

Alexela Limited had sent two of its managers to the seminar. Alexela is the second largest petroleum company in Estonia and also has a large wholesaling and food retailing division. Alexela is headquartered in Tartu, the capital of Estonia. The company invited the authors to meet with its top executives for a day. The meeting took place in a conference room at the Alexela offices and was attended by the eighteen most senior managers of the company. By the time the authors arrived for the meeting, Alexela executives had been briefed on the MARKETRAIN seminar and had been told about The Marketing Management Simulation.

The Alexela managers were very interested in the potential of business simulations for management training and strategy formulation. They were interested in knowing if: (1) we would be able to change the marketplace of the MMS simulation from North America to Estonia; (2) run a private management training program for their executives with the current or revised MMS program; and (3) whether we could develop a marketplace simulation for them that could be used for testing business strategies before implementing the strategies in the marketplace? From these requests, it is clear that Alexela management was very interested in the potential of business simulation games. Reactions during the remainder of our visits were very similar.

# Developments In Business Simulation & Experiential Exercises, Volume 23, 1996

## PARTICIPANT FEEDBACK

While participants in the MARKETRAIN seminar included business executives and government officials, we will limit our remarks in this section to the feedback that came from the business faculty members from the three Estonian universities that participated.

While many of the business faculty participants were now teaching marketing courses, it must be remembered that they generally had Ph.D.'s in economics and had been teaching in a totally planned economy. As such, their knowledge of marketing tended to be only what they had read in several North American marketing textbooks. They were familiar with marketing terms and marketing concepts but were totally unaware of marketing and marketplace dynamics. The major points brought to our attention during the debriefing sessions included the following:

- The MARKETRAIN seminar demonstrated that teaching could actually be interactive/participative and fun. The typical situation in Estonia is straight lecture with little, if any, interaction between teacher and student.
- While the participants had taught the marketing mix" in their classes, they never understood until playing MMS, that the effect of marketing mix decisions is cumulative.
- For the first time they learned that strategies took time to unfold and create an impact in the market.
- For the first time they discovered that a market could actually be expanded through the aggressive marketing programs of companies.
- They didn't realize that a company could make money by spending money - their view was that profit came only from cutting costs.
- They were shocked to discover that decisions that they thought were risky were, in fact, highly conservative.

## CONCLUSIONS

In general, our experience with the play of The Marketing Management Simulation in Estonia was quite successful. The MARKETRAIN participants enjoyed the simulation

experience and, in fact, faculty participants from the University of Tallinn and the University of Tartu wanted copies of the simulation program to use in their marketing classes.

The MMS was of great value in illustrating the MARKETRAIN seminar topics. In a country that has had little experience with sales force management or advertising, it is difficult to draw on real-world examples. The simulation, then, provided the "marketplace examples that we could talk about in our seminars. As well, after considerable prodding, as described, the seminar participants eventually began to appreciate the merits of aggressive marketing.

## REFERENCES

- Burgess, T. F. (1991) "The Use of Computerized Management and Business Simulation in the United Kingdom, Simulation & Gaming, 22, pp. 174-195.
- Dickinson, J. R. and A. J. Faria (1995) The Marketing Management Simulation, Detroit, MI: The Simulation Source.
- Faria, A. J. (1987) "A Survey of the Use of Business Games in Academia and Business," Simulation & Gaming, 18, pp. 207-224.
- Keys, J. Bernard, A. G. Edge and R. A. Wells (1992). The Multinational Management Game, Burr Ridge, IL: Richard D. Irwin, Inc.
- McKenna, R. J. (1991) "Business Computerized Simulations: The Australian Experience, Simulation & Gaming, 22, pp. 36-62.
- Thorelli, Hans B., R. L. Graves and J. C. Lopez (1995) INTOPIA, Englewood Cliffs, NJ: Prentice-Hall, Inc
- Wolfe, Joseph (1993) "A History of Business Gaming in English-Speaking and Post-Socialist Countries: The Origination and Diffusion of a Management Education and Development Technology," Simulation & Gaming, 24, pp. 446-463