

**THE APPLICATION OF ORGANIZATIONAL MOTIVATION PRINCIPLES:  
THE EXPERIENTIAL BUSINESS SIMULATION MOTUS MANUFACTURING**

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**ABSTRACT**

This experiential simulation allows business students to engage in planning and manufacturing activities while working under conditions called forth by different motivational theories. Identical tasks are used with variable work factors, expectancies, and rewards in order to highlight key factors of basic motivational theory found in introductory management texts. This paper discusses this motivation based experiential exercise, reviews motivational theories and how they are operationalized within the activity, and then provides an assessment of the exercise based on student evaluations.

**INTRODUCTION**

The motivation of employees is a challenge that managers are continually confronted with in the workplace. In today's business environment "employee motivation is perhaps the ultimate management challenge" (Arnold & Krapels, 1996. p.9). Within the business school, the understanding of motivation is seen as central to understanding and managing organizational behavior. (George & Jones, 1996). Business students who have experienced the application of motivational theories will be better prepared to comprehend the behavior of their organization, to confront these workplace challenges, and to position their organizations for long term success.

Currently a degree of disparity exists between the contents of organizational behavior text books, and the motivation based experiential exercises that are available to faculty who use these texts in introductory upper division management courses. The management texts are exposing students to a wide range of motivational theories (see George & Jones, 1996, Schermerhorn, Hunt & Osborn, 1995). Yet activities in experiential OB texts have

been more tightly focused (see Kolb, Osland & Rubin, 1995, Marcic, 1995). Activities like ring toss that have been designed to accentuate McClelland's exploration of affiliation are effective, but the focus remains on an individual's conception of motivation. For a survey course in management, it is unrealistic to assume that classes would be able to devote the time necessary to individually focus on each theorist in motivation research from an experiential standpoint.

A business simulation that allows participants to actively engage in planning and manufacturing activities while working under conditions called forth by different motivational theories would allow faculty in introductory management courses to effectively expose their students to motivational concepts in an experiential activity. To address this need, Motus Manufacturing was created. This experiential activity simulates four organizations engaged in identical tasks with variable work factors, expectancies, and perceptions in order to highlight key factors of different motivational theories. This paper will briefly review the motivational theories and how they are operationalized, explain the facilitation of Motus Manufacturing, and then discuss the results of conducting the exercise based on the student data that has been collected.

**MOTIVATIONAL THEORIES IN THE  
MARKETPLACE**

Workplace motivation has been extensively studied, and there are a variety of theories introduced in basic texts. The goal of this experiential activity is to expose participants to basic approaches that will create a core understanding on which students can build. After discussion and trials, four approaches were chosen: Herzberg's Dual-Factor

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Theory, McGregor's Theory X/Y, Expectancy Theory, and Equity Theory. In choosing these particular approaches we found that we were able to address many of the current issues in management and that we were able to easily generalize the participant's experiences during the debrief

Herzberg's Motivation-Hygiene Theory views an individual's relation and attitude to his or her work as a basic one that can determine the individual's success or failure. Key hygiene factors, those events on the job that can lead to extreme dissatisfaction, include (1) company policy & administration, (2) supervision, and (3) work conditions. McGregor's Theory X/Y is influenced by Maslow and posits two different sets of managerial assumptions about people. Theory X, the focus in this activity suggests that typical employees dislike work, and must be coerced, directed and closely supervised. Expectancy theory is tied to an individual's expectation or belief about how work would result in personally beneficial consequences. To what degree do you personally benefit when company commitments are met? Three variables exist in the relationship (1) Attractiveness, (2) Performance-reward linkage, (3) Effort-performance linkage. Equity theory involves the idea that motivation is based on the individual's perceptions of fairness or discrepancies. Individuals compare their job inputs and outcomes with those of others and then respond so as to eliminate inequities (Coffey, Cook, & Hunsaker, 1994; Robbins, 1996; Schermerhorn, Hunt & Osborn, 1995)

### **APPLICATION WITHIN MOTUS MANUFACTURING**

We have created four separate workplace settings in which participants are asked to engage in a production activity as a means of Operationalizing the motivational theories. The four "companies" are labeled Hertztech (Herzberg's Dual-Factor Theory), X-tech (McGregor's Theory X/Y), Expetech (Expectancy Theory), and Equitech (Equity Theory).

Herzberg's Dual-Factor Theory is represented by creating a workplace condition that is high in hygiene factors and low in motivational factors. We offer poor instructions by offering incomplete information and production diagrams, poor administration and supervision by ignoring the group and failing to offer feedback, and poor work conditions by creating a poorly designed physical setup for production.

McGregor's Theory X/Y is represented by the application of theory X to the workplace. This approach also serves to represent the management literature typified by Fayol's concentration on authority and command in his principles of management. In this group, the participants are told that they must work hard, no breaks are allowed, they must maximize production, and that they will be continuously monitored with cameras, and micro phones.

Expectancy theory is applied when one group is notified of the existence of an all-time production record (that is easily met) and encouraged to break the mark. Their background material indicates that they would receive a high level of recognition for a new record, including the inclusion of their names on the activity materials.

Equity theory is operationalized in the final group by suggesting that inequities exist between them and the rest of the organization. Participants are told that their group has a disproportionately small support staff, a lower pay scale, a slow promotion tract, and the oldest office facilities in the company. In addition to the background information, participants are told that their group has been assigned to produce two units instead of the one unit that they are led to believe has been assigned to the other production units.

### **ADMINISTRATION OVERVIEW OF MOTUS MANUFACTURING**

The basic task of each of the four groups is to assemble the same "component" constructed of lego

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blocks of different colors, sizes and shapes based on a pre-set diagram. Participants are randomly assigned to one of the four groups, and the groups are physically isolated from each other. Each group is given background information that provides basic information on their company and specific information about their division (see Appendix II). Individual groups are also given a two-sided diagram of the lego figures that they are to construct, and an envelope of lego parts that allow for the production of up to five units.

The simulation is divided into planning and production stages and there are three complete cycles. The planning stages last five minutes and participants are allowed to examine the blocks, talk through the objectives, and are encouraged to set up a production strategy. The production periods last three minutes after which the facilitator provides individual feedback to each of the groups. After the three cycles, all of the participants are brought together to debrief the simulation. Participants are asked to describe their experiences within each group, they are debriefed on the conditions that were manipulated in each of the divisions, and the motivational components of the simulation are analyzed and discussed. The Motus Manufacturing simulation was constructed to be run during a one hour and forty minute class session.

### **FACILITATION OF MOTUS MANUFACTURING**

The goals of this activity are: to aid the participants in the development of a comprehensive understanding of motivational theories, and to allow students to experience working conditions under different motivational techniques. Instructions to conduct Motus Manufacturing are contained in an abbreviated facilitator's guide in Appendix I. The two key components to the activity are the background sheets distributed at the start of the activity (Appendix II), and the reinforcement of the motivational conditions that occurs as the facilitator provides feedback while checking the

productivity levels after each production cycle.

The debrief utilizes the experiential learning cycle and begins by publishing the experiences of the four individual groups. Participants from each group are asked to explain the instructions they received their work conditions, and how it felt to be employees. It is important to explain at the beginning of the debrief that each of the four groups were actually working independently and that the purpose of the activity was to expose the participants to different motivational theories. While publishing the workplace conditions, the means by which the different motivational theories were operationalized is discussed. The experiences are generalized to address ways that organizations motivate employees, and what impact the use of different motivational techniques might have on an organization's culture. Finally, the participants are asked to apply their knowledge by explaining how they would have approached trying to motivate employees in the Motus Manufacturing situation, and how the concepts of motivation can be used to address current issues within the business community.

### **ACTIVITY ASSESSMENT**

Moms Manufacturing was developed over a twelve month period with multiple trial runs. After the activity was completed, it was conducted for introductory upper division management classes and analyzed with a standard scantron form used for general activity evaluations. The questionnaire consists of nine questions, evaluated on a five-point scale, and a feedback section that offers an open-ended opportunity for participants to make written comments. A total of 39 students completed the activity survey. Of the nine questions on the scantron, six are conceptual and three are related to the specific instructions of the exercise.

Initially, the scores for the six conceptual questions were analyzed. These questions address the relation of the activity to the course, the degree

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the concepts were demonstrated, the ability of the activity to improve understanding of the topic, whether it was thought provoking, its relation to current business issues and the degree to which it was valuable. The conceptual scores averaged 4.22 out of a possible five points with individual questions ranging from 3.9 to 4.6 (see Appendix III for specific results). This rating compares favorably to historical data that has been collected on the most commonly facilitated activities at our Center. The last comprehensive use of activity surveys occurred in the Spring of 1995 when 463 surveys were completed on seven activities. The sample size ranged from 27 to 106 respondents per activity. These questionnaires recorded an average activity score for the six conceptual questions of 3.99 (Hi-Fli 4.10, Survival 4.07; Bafa 4.05, Greeting Cards 4.01, Meta-4 3.97; Ethics 3.88, Who Gets Hired 3.88).

For an activity like Motus Manufacturing, the three instruction-related questions are more difficult to interpret because one group, representing twenty-five percent of the participants, were purposely given poor instructions. These three questions address whether the verbal instructions were clear, the written instructions were clear, and the participants received adequate information to participate in the activity. Even with twenty-five percent of the participants receiving purposely poor instructions, the averages for the three instruction related scores (3.9, 3.9, 3.5) are similar to averages for commonly run exercises at the Experiential Learning Center at USC. In Spring of 1995 the average instruction related score was 3.91 (n=463).

Qualitative responses were also obtained from the participants and all of the responses were encouraging. Representative comments were: "I thought this was very interesting and educational." "It really shed light on current class topics." "Good activity to show the different ways" and "I wasn't sure of how the different theories looked like in action but now I do."

Overall, the responses that we have obtained from participants have been extremely positive. We were surprised at how quickly the students internalized their situations. Students in the expectancy group that are encouraged to gain recognition by beating the existing production record often jump for joy and scream as they set a new production record, while the participants in the equity group often griped throughout the debrief about their low pay. Beyond the statistical and qualitative measures, the activity has been able to develop an important starting point that can be utilized to focus class discussions and create excitement to the study of motivation.

### **CONCLUSIONS**

The Motus Manufacturing simulation allows participants to develop an understanding of workplace motivation as they see and experience motivational approaches in practice. Participant reaction to the Motus business simulation has been positive with evaluations meeting or exceeding the statistical scores of more established activities. Perhaps even more telling is the qualitative feedback that has come from students who have experienced the activity. In post-simulation conversations participants have expressed a greater understanding of the concepts and have shown a new enthusiasm for the particular topic area

### **APPENDIX I FACILITATOR'S GUIDE**

#### **Activity Setup**

The time required is one hour and 40 minutes. The space requirements are four separate rooms for groups of 2-10 people. Videotaping of each group during planning and construction periods is extremely helpful when played back during the publishing phase of the debrief. If the class is small, it is preferable to have fewer individuals per group than to use fewer rooms.

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Welcome everyone to the Motus Manufacturing Group. Announce that MMG is a multi-national organization that produces and markets consumer products. Motus has contracted with your company to produce a prototype toy that is currently referred to as “project lego.” The Motus Manufacturing Group is interested in simplifying the production process, and reducing production time. You will have three production periods each lasting three minutes. Each of the production periods will be preceded by a five minute planning session. Additional information about your particular organization is provided. Ask participants to please take a few minutes to read through the materials. (Distribute appropriate versions of the Organizational Background.)

Distribute the lego parts and diagrams to each room and announce the beginning of the five-minute planning session. (*Hertztech is given only the top view of the lego model.*) Ask each team to become familiar with “project lego,” to strategize, organize, and practice building the legos. At the end of the planning session, and prior to the construction phase, all pieces must be detached, and returned to the bag. Allow them their first five-minute planning session and then warn the participants that the production cycle is about to begin.

Announce the beginning of production and after three minutes, announce the time has expired. Check that all rooms have stopped and then announce that Motus Manufacturing will be sending in a representative to check their production. After checking the production have the participants take apart their production and begin your second five-minute planning period. Repeat the process.

### Order/Reactions For Checking Production

Expetech: Be positive on their prospects for a new record and accentuate the potential reward. “Wow, you folks have a real shot at the record. Maybe your names will be on background sheet with a new all-time record.”

X-tech: This group is always pushed to work harder. “This is it?” “Well, several times we did record individuals not focused on the task.” “You can do better.” During the production times interrupt them to say, “you need to work harder.”

Equitech: Build further feelings of inequity. “One of the other groups received extra time off and was unable to manufacture their unit. We were forced to void that phase of the contract.”

Hertztech: Practice bad management skills. After the first round offer the group a copy of the bottom diagram. Do not check their production or offer any kind of reaction or supervision. Do not recognize their achievement or work.

## APPENDIX II BACKGROUND SHEETS

### Introduction On All Sheets

You are members of (Company) Manufacturing. Your organization is a sub-contractor of Motus Manufacturing, a multi-national organization that produces and markets consumer products. The focus of (Company) is to produce component parts that are later assembled and marketed internationally by the Motus Manufacturing Group (MMG). It is important that the components are delivered on time and assembled correctly or (Company) will risk losing its largest and most lucrative contract. Your team has been selected to produce parts for an important, high profile project. There are three phases to the MMG contract resulting in three production periods. Due to the nature of the project, however, each of these production cycles will last only three minutes.

### Additional Information For Each Group

#### Expetech Manufacturing

Your team is to produce as many units as they can throughout the three production periods. Your score is a combination of the total number of units produced. The all-time performance record is

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a combined total of seven (7) units correctly assembled over the course of the three production periods. The record was established on October 4th, 1995 by the team of V. Rodriguez, N. Cho.

A. Walther, G. Bevans and P. Tapia After the team's record setting performance the team was given a reception by the President and a picture to commemorate their incredible achievement as the "top production managers at Expetech" currently hangs in the Company's lobby.

### Equitech Manufacturing

Your team has once again been called upon to lead the project due to your record setting productivity (the highest in the company for the last three years). Despite a disproportionately small support staff, a pay scale that is 30% below the company average, and a historically slow promotion tract, your team has always been able to "get the job done." While the other three divisions will each be expected to produce one (1) unit per production period, your team will be expected to produce three (3) units per production period because of your good track record. If the contract is successful it is hoped that Equitech may finally remodel your office facilities, by far the oldest in the company, and the only one not to have been upgraded.

### X-tech Manufacturing

You must work very hard at all times during the production cycle. No breaks are allowed. Your entire team must always be focused on your production task. You will be continuously monitored to ensure that X-tech's production requirements are strictly followed. Individuals that are not entirely focused on the tasks will be recorded on videotape, and will be called to answer for any production short falls. We will watch you to insure that every X-tech employee is giving 100% effort at ALL times during the production cycle!

### Hertztech Manufacturing

Your team has been selected to produce parts for an important. high-profile project. Parts must meet all contract specifications.

## APPENDIX III CONCEPTUAL QUESTIONS

There were six conceptual questions that participants were asked to rank on a five-point scale. The questions and averages follow: Overall, the activity related well to the current topic being discussed in my course: 4.6. The concepts demonstrated by the activity were clear: 4.3. The activity added to my understanding of the topic: 4.2. The activity was though provoking 3.9. The activity was related to current business issues: 4.2. The activity was valuable: 4.1. Overall average for questions one to six: 4.2.

## REFERENCES

- Arnold, V.D., & Krapels, Roberta H. (1996, May 15). "Motivation: A reincarnation of ideas; employee motivation theories." *Industrial Management*, 38(3).
- Coffey, R. E., Cook, C. W., & Hunsaker, P. L. (1994) *Management and Organizational Behavior* Burr Ridge, IL: Austin Press.
- George, J.M., & Jones, G.R. (1996) *Understanding and Managing Organizational behavior* Menlo Park, CA: Addison-Wesley.
- Kolb, D.A., Osland, J.S., & Rubin, I.M (1995) *Organizational Behavior: An Experiential approach.* (6th ed.) Englewood Cliffs, NJ: Prentice Hall.
- Marcic, D. (1995) *Organizational Behavior: Experiences and cases.* (4th ed.) Los Angeles: West Publishing Company
- Robbins, S. P. (1996) *Organizational Behavior: Concepts, Controversies, and Applications* (7th ed.) Englewood Cliffs, NJ: Prentice Hall.
- Schermerhorn, J. R. Jr. Hunt, J. G., & Osborn, R. N. (1995) *Basic Organizational Behavior* New York: John Wiley & Son, Inc.