

The course bridges the rapidly changing manufacturing technology and Global business in the world today.

The strategy and operations of globalized enterprises that manufacture products or provide services are explored. An Engineering School Dean asked the CEO of a Global Corporation, "If we teach students the latest technologies for design, manufacture, supply chains and lean manufacturing methods, is that what you want?" The CEO said, "No, we know that or will learn it shortly; produce students who understand the spirit and process of Global manufacturing." The "bottom line" is no longer only ECONOMIC, i.e. PROFIT. It consists of ECONOMIC, ENVIRONMENTAL, SOCIAL and SUSTAINABILITY. This course teaches the spirit and process of a globalized manufacturing enterprise. Off-shoring, re-shoring and outsourcing are options available to a company for development, manufacture or selling of its products/services. Product development, supply chains, manufacturing, financial measurements, ethical considerations and the Internet impact are examined. Some students have called the course a six month MBA.

If you are looking for a course with heavy math or serious problem solving this is the WRONG class. First we must understand the language of business which begins with FINANCIAL, STRATEGIC and MANUFACTURING terminology. This course is for people desiring to be managers or entrepreneurs.

Dr. Shelly Weinig has come full circle from Professor to entrepreneur to CEO running a globalized public corporation for 25 years. SONY acquired the company and he became Vice Chairman of Engineering/Manufacturing for SONY'S U.S. factories. 7 years in that position and he returned to his first love - teaching. He has served on the boards of many public & private companies as well as Foundations. A bio is on his website. (<http://www.ams.sunysb.edu/~weinig>)

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Midterm Examination: Closed book - one page of notes are permitted.

Final: Examination - same as above

Homework consists of assigned reading and independent research submitted as executive summaries.

Texts: The Goal by Eliyahu M. Goldratt, North River Press

Strategy - A View From the Top "An Executive Perspective (3rd or 4th Edition) by Cornelius De Kluyver & John A. Pearce II

Dictionary: Internet or book form. Words have different meanings in business.

Grading: Homework & classroom participation 30%, Midterm 30%, Final 40%. (It is not a mathematical formula. (Professorial leeway is permitted in final grading.) Missing 2 or more assignments will lower your final grade progressively.

Internet students may conference with the Professor by E-mail, Skype or telephone. For Resident students Office hours for the Professor and TA will be on campus at to-be-announced hours.

This course is about business. In order to establish a realistic atmosphere I am the CEO of the company. I am not your Professor or your friend. You are managers.

There are usually one or two guest lecturers during the term.

THE GLOBAL ENTERPRISE

Syllabus:

SESSION 1, INTRODUCTION.

A. Enterprise is derived from the French word, *entreprendre* – it implies a readiness to take risks for profit. Notice RISK comes before PROFIT. All business is at **RISK**. (Would you have imagined GM declaring bankruptcy?)

1. A manufacturing enterprise must respond rapidly to **Change**. **Action** is required to cope with change in order to remain competitive in the global marketplace. (Freddie the Frog.)

“You can’t manage what you can’t **Measure**.” (William Hewlett, HP)

Four key words: **RISK, CHANGE, ACTION, MEASURE.**

2. PERFORMANCE MEASUREMENTS.

No single measurement or set of measurements can define a Global Enterprise.

Methods of Measurement:

1. Financial Measurements: This is the language of business.
2. The SEC mandates three schedules for public companies.
Balance sheet, Consolidated P & L & Cash flow
3. Productivity Measurement: (Bureau of labor statistics definition:
(value of goods manufactured divided by amount of labor input.)
4. Gross National Product (GNP) dynamic measure of change.
5. Quality, Performance, Yield, Productivity, Efficiency Measurements.

SESSION 2 - MANUFACTURING METHODS

A. Taylorism

B. The Hawthorne Effect

C. Manufacturing Methods (Part 1)

1. Craft Paradigm followed by Industrial Revolution - late 18th century
2. Bringing Science to the Shop floor - Frederick Winslow Taylor
3. Mass Production - Henry Ford

SESSION 3- BENCHMARKING

A.” The search for those practices that will lead to superior performance for the company.”

1. Benchmarking the competition
2. Benchmarking outside the industry.
3. Product, Process and Financial benchmarking.

SESSION 4 - Manufacturing Methods (part 2)

A. JIT System /Toyota Production Method (TPM)/ Taiichi Ohno

1. Zero inventory myth
2. Kanban - push vs. pull
3. Kaizening - an evolutionary improvement program
4. Ideal lot-size of one.

B. From Fat to Lean to no Manufacturing: The Porsche Auto Company.

C. Cluster Manufacturing.

D. Subtractive vs. Additive manufacturing.

E. 3-D printing and nanotechnology. (The fantastic future of biological 3D printing.)

SESSION 5 -THE GLOBAL ENTERPRISE.

A. What is a Global Corporation?

B. Why do Corporations go Global? Do they have a choice? C . How to become a Global Corporation.

D. National Culture - A major obstacle to successful globalization.

E . Problems of Global Corporations.

Ethics, Professional Practice, Human Resources, NIH Syndrome - (not invented here.) This is disappearing with the “Globalization of innovation.”

SESSION 6 – ENTREPRENEURS – Can they create sufficient jobs to replace those lost due to increased Productivity, Robotics and machine learning?

A. Joseph Schumpeter’s economic theory of CREATIVE DESTRUCTION. e-book & audio readers/Borders. Netflix/Blockbuster.

B. Entrepreneurial Models: Innovation, Process, No-idea, Concept , and Facilitators.

C. Requirements: product idea, proof of product viability, customer.

D. Funding: early, middle and growth. (self, 3Fs – family, friends, fools, Angels, VC, Corporate)

E. Entrepreneurial characteristics; no silo, curiosity, network.

MIDTERM EXAMINATION

SESSION 8 – PRODUCT DEVELOPMENT

- A. Develop new products or die !
- B. Product development as a potential corporate killer.
- C. Time vs. Cost: Money can be replaced - not time.
- D. Generation analysis of product development
- E. The use of parallel teams to expedite global product development.
- F. Taguchi Method for improved product development.
- G. The impact of the Green Revolution on Product Design

SESSION 9. DESIGN METHODS & SUPPLY CHAINS FOR GLOBAL CORP.

- A. Mathematical approach to TARGET COSTING. Establishing allowable Cost.
- B. Models and simulation replace Edisonian make, test, fix, start over method.
- C. Tataka - pricing pressure used on suppliers.
- D. More Products are destroyed by ROI analysis than by competitive pressure.
- E. Using vendors in initial design. (Keiretsus vs. Western supply chains).
- F. Inventory & tracking control of supply chain with Radio Frequency ID.
- G. The role of 3rd party logistics companies.

SESSION 10. CORPORATE REORGANIZATION - NEVER ENDING PROCESS

- A. Kaizen is evolutionary whereas re-engineering is revolutionary.
- B. The five steps of re-engineering.
- C. Company vs. National Culture - Is it a strength or a weakness?
- D. Remanufacturing methods - an integral part of green design.

SESSION 11. MANUFACTURING & MARKETING STRATEGIES

- A. Learning curve theory & strategies based upon its application
 - a. Cream and abandon strategy, e.g. Intel.
 - b. Pricing down the learning curve, e.g. Texas Instruments.
- B. The Strategy of Speed - “First In Defeats Others” (FIDO), e.g. 3M
- C. The strategies of scope and scale

SESSION 12 – Developing a Corporate or Personal Strategy

- A. Strategy is a skill used in managing and planning for success.
 - 1. The Mission Statement.
 - 2. The Financial Objectives.
 - 3. The Action plan.
 - 4. Evaluate, mid-course corrections and start over.
- B. Classical Strategy Development .
 - 1. SWOT Analysis. (Strengths, Weaknesses, Opportunities, Threats)
 - 2. Management 101.
 - a) Collect data
 - b) Analyze data
 - c) Formulate action plan
 - d) Make DAM sure it happens.
 - e) Evaluate and amend.

C. Some Strategy Methods

1. American Management Association (AMA)
2. Boston Consulting Group (BCG Analysis.)
3. Strategy of Guerrilla warfare - Mao Tse Tung.
4. Weinig's Manifesto

SESSION 13 CONTEMPORARY STRATEGIC THINKING.

Is there time for classical strategy in today's warp speed business environment?

- A. That which works is best. There is no single best method !
- B. Building a legacy that will outlive one's career.
- C. Will competition in the future be different? How? Amazon?
- D. Competing for industry foresight.
- E. Core competence. What is it? Can it be developed or changed?
- F. WHAT COUNTS IS A WINNING STRATEGY - CORPORATE OR PERSONAL.
- G. Strategies used by the Japanese in "The Economic miracle."
 1. Low labor cost.
 2. Scale based.
 3. Focused factory.
 4. Flexible factory
 5. Monetary strategy. Yen/dollar relationship.
 6. Strategy of TIME. (Performing in less time than competition results in strategic advantage.) Example: Kyocera

Final Examination

Sayonara!

