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**CYPRUS INTERNATIONAL UNIVERSITY**  
**INSTITUTE OF GRADUATE STUDIES AND RESEARCH**  
**Engineering Management Department**

**ILE282: ENGINEERING MANAGEMENT**  
**(2<sup>nd</sup> Assignment)**

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**NICOSIA - 2019**

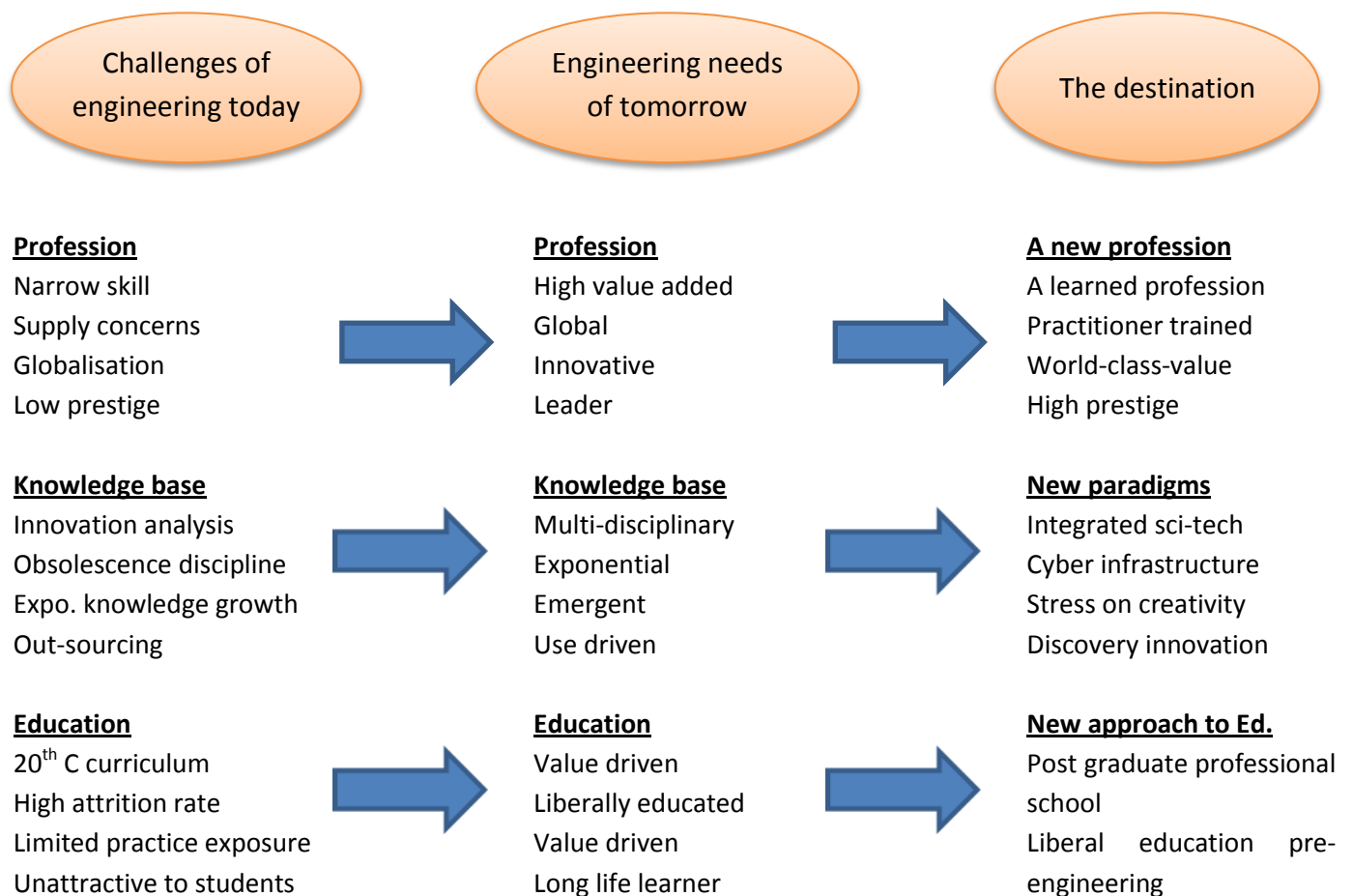
**Nicosia, 2019**

**2.1** On the eve of leaving his alma mater, Joe Engineer remembers the encouraging words of the commencement speaker, “Graduation is the happy beginning of an exciting life ahead.” He is of course excited about his new Master of Engineering degree, which he received with honor. But he is also a bit confused about what to do now to make his new life exciting and happy. Apparently, what he needs is a road map into the future. How can you help him?

Everything starts with good planning. He should apply for a PHD while developing a good plan taking into consideration his retirement age, the type of company he will like to work for( or start his own if he has the funds), the positions he can handle, his role, and develop a plan B and plan C. he should:-

- Make a plan of companies he will like to work for, positions he can hold, salary he expects, towns or countries preferred, climatic and health considerations, benefits of the companies, etc.
- Develop plans B and C even D in case of any failures
- Make a detailed study of preferred companies
- Apply online or in person
- Apply for PHD and other studies(Learning never ends)
- Start thinking of setting up his own business in case all these fail or other factors come to play

Below is a simple summary



**A roadmap to the future of engineering**

**2.2** Joe Engineer took a course while going to graduate school at SUNY-Buffalo. There, he learned the importance of planning. He knows that luck plays a big role in one's life. But he is convinced that a proper planning will help him to have an orderly progression in his career. He thinks that it would be cool to become a CEO at the age of 60 and retiring at 65 with a net worth of \$10 MM. He wants some guidance on career planning. How can you help him?

It will not be advisable for Joe to do this, because most companies will not take CEOs at the age of 60. At this age, their productivity is low, as well as efficiency, effectiveness and dynamicity. It will be degrading perhaps to a company and besides the chance to get such an offer is too slim. He should not rely on luck at all, let him take the job and switch to night school or online studies and he may still have the luck when he graduates and he would not have lost anything.

**2.3** The company has always been focused on the high-quality high-price end of the market. Now, market intelligence indicates that some competitors are planning to enter the low-price low-quality end of the market. What should the company do?

The company should design and implement planning horizons as follows :

<u>Operational decisions</u>	<u>Tactical decisions</u>
• <u>Do market research</u>	• <u>Use competitor intelligence</u>
• <u>Reduce price</u>	• <u>Further reduce prices</u>
• <u>Improve results</u>	• <u>Interpret massive amounts of market intelligence</u>
• <u>Reduce costs</u>	• <u>Further reduce cost</u>

**2.4** Mission and value statements are indicative of the directions to which a company is headed. What are typically included in the statements of Mission and Value of some well-known companies in the U.S.? Please advise.

The mission and value statements include: who they are, why the company exists, whom they are serving, and how they operate to effectively carryout the mission. it should be as follows:

- Say why the company really exists
- It should be short and sweet
- Consider long term and short term
- Test it and revise it often

**2.5** What are included in the operational guidelines some industrial companies have developed? Please advise.

- a. At beginning of each meeting, the training team members and facilitators should agree on and clearly state meeting purpose, review progress and achievements of previous meetings.
- b. Agree to focus on problem solving dialogue, while avoiding potential damaging debates.
- c. Recognize that conflict and diversity are assets to be maximized, not problems needing to be avoided and suppressed, and develop conflict resolution procedures.
- d. Agree on procedures that ensure that every voice is heard and that the problem-solving dialogue is focused, detailed, and productive.
- e. Agree on "a parking lot" for ideas that are not immediately relevant and useful; and revisit the parking lot during the debriefing process
- f. Do not "lump together" too many needs, problems, and priorities so that you end up with an unmanageable problem.
- g. Because the team may have to make some hard choices, develop a prioritizing process that is acceptable to all members. For example, agree on a method for selecting the five most important identified areas of improvement and then put the remaining issues in the "issue and idea parking lot."
- h. Chunk" out action steps as often as possible in CONCRETE ways that demonstrate to the team and others that progress is being made. Do this as early in the process as possible to help get some momentum going for the team.
- i. Develop an orientation/mentoring process for members joining late in the process and for members who miss a meeting.
- j. At the midpoint of each meeting, the team facilitator will do process, progress, and product checks, helping to ensure that the problem-solving dialogue and interactions are healthy and productive.
- k. At the end of each meeting, the team facilitator and team members will debrief, summarizing progress, achievements, and barriers; celebrating successes; and identifying next steps.

**2.6** Quality may be defined differently by different people in a company. Explain why that is usually the case. Which quality definition is the correct one for the company to adopt?

**ANS:** Quality is a perceptual, conditional, and somewhat subjective attribute and may be understood differently by different people. Producers focus on specifications while consumers focus on fitness for use. The company should adopt the one that covers both the producers and service sectors. Quality of a product or service is its fitness for meeting or exceeding its intended use as required by the consumer.

**2.7** There are always risks associated with the experimentation of a new manufacturing process or with the entry into a new global market, the risks of failure. How should one decide to proceed or not to proceed with a risky venture? What is the proper level of risks to take?

All new ventures have inherent uncertainties. In deciding to take the risks of going forward with the venture, several questions need to be answered first: A. Should it luckily turn out to be successful, what is the maximum pay-out (e.g., value) of the venture? B. Why is the venture deemed to be risky? How likely are all risk factors expected to play out in reality? What contingency steps are available to minimize the impact of these risky factors? Answers to these questions will lead to an assessment of the probability of success for the venture.

C.Should the venture fail (e.g., time delay, reputation,company bankruptcy, loss of market share, etc.), what is the adverse impact on company?

**2.8** The Marketing Director needs to submit a strategic plan for entering a new market. He knows he needs long periods of uninterrupted time. He considers two options:

- (1) Staying at home to develop the plan,
- (2) Delegating some parts of the plan to subordinates.

What are the factors the Director needs to consider when he picks the best way to create this plan?

Marketing is the process by which companies create value for customers and build strong customer relationships in order to capture value from customers in return. The marketing process involves five steps. The first four steps create value for customers.

- First, marketers need to understand the marketplace and customer needs and wants.
- Next, marketers design a customer- driven marketing strategy with the goal of getting, engaging, and growing target customers.
- In the third step, marketers construct a marketing program that actually delivers superior value.
- All of these steps form the basis for the fourth step: engaging custom- ers, building profitable customer relationships, and creating cus- tomer delight. In the final step, the company reaps the rewards of strong customer relationships by capturing value from customers.
- He should follow the second option delegating some parts of the plan to subordinates

**2.9** The Office Equipment Company is headed by Glen Jordon, President, who is supported by four people: Ray Fisk, VP Sales, Terry Buford, VP Manufacturing, Fred Hunter, Director of Research, and Bob Christian, Director of Corporate Planning. The company has produced typewriters, calculating machines (desktop with paper tape), accounting machines, and tabulating equipment in the last 40 years. Until two years ago, the company performed well, based on

- A. Reputation for quality products and services.
- B. Sales increases over the years.
- C. Rate of return better than others.
- D. Engineering research concentrated on improving existing machines, with new models every few years by introducing small incremental changes.

However, there had been some significant changes in the last two years. For example:

- A. Typewriters sales continued to increase.
- B. Sales of accounting machines and tabulating equipment become stagnant.
- C. Sales of calculating machines dropped more than 50%, due to the low cost hand-held calculators.
- D. Customers hold off purchases of traditional products to evaluate minicomputers.

The company is at a crossroads. Two strategic plans were presented to the Board of Directors for review, including budgets.

### **1. Plan A (Ray Fisk and Terry Buford)**

**A. Continue with company's current products. Improve sales through a National Promotion Program:**

- Increase advertising budget by 50% to expand market share by 15%, including price cut, if needed.
- Delay a plant modernization for one year.
- Cut R&D by 15%.
- Restore plant modernization and Engineering Research through sales increase in one year.

**B. Supporting Arguments**

- Projected sales of calculators will remain at present level.
- Company's overall sales will rise by 10 % per year for the next ten years.
- Customers will want special-purpose transistorized equipment, not complicated minicomputers.
- Full utilization of present resources (e.g. marketing organization and approach, production facilities and skills, management experience, etc.)

**C. Opposing arguments**

- Ignore the roots of company's problems being technology obsolescence and customer's changed needs.
- Advertisement addresses only the issue of product awareness, not technology obsolescence and performance deficiency (e.g. size, convenience, integrated operations, etc.).
- Plan's assumption is not supported by data available.
- Cycling Engineering Research by 15% is impractical.
- Plan represents only a one-year program, not a long-term strategy.

**2. Plan B (Fred Hunter and Bob Christian)**

**A. Change company's business by entering the fields of microprocessors and minicomputers.**

- New line of minicomputers (large scale integrated circuit microprocessor) for office, financial and data processing
- use in small to medium size organizations.
- New line of typewriter, using integrated circuits and internal memory.
- Double Engineering research staff in two years.
- Continue engineering research on typewriters and drop work on other three.
- Delay plant modernization indefinitely.
- Make major corporate commitment to raise new capital through bond or preferred stock.

**B. Supporting Arguments**

- Revolutionary impact of microprocessor on company business is forecasted:
  - Rapid reduction of microprocessor cost.
  - Significant increase in the use of microprocessors.
  - Sales of company's current products are projected to reduce to zero in eight years.
  - Sales of typewriters to drop 50% in ten years.
  - Company is already 5 years behind.
- Company's long term survival depends on a timely entry into the minicomputer market.

### C. Opposing Arguments

- Forecast is not believable.
- Switching company into new technology will need different marketing approach, organization, sales forces, outlets,
- production facilities, equipment, quality control, inventory management techniques, and management experience.
- Require large capital investment.

Analyze this case and answer three questions:

(1) Determine why each of the participants are taking the positions indicated before the Board of Directors?

- **The president and vice presidents are usually members of the board of directors meeting**
- **The assiduity of a company depends on cross functional teams** – each process or person or sector is a solid foundation of any decision making and smooth functioning in the board of Directors.
- **The participants are the ones in the field:** they know the details and techniques in their disciplines
- **The decision of the board depends is not mutually exclusive of the functional areas**

(2) As Chairman of the Board, what action would you take?

As chairman, I will consider the sort-term (operational) and long term (strategic) issues at hand and implements the following plans based on short term and long term since all are great:

Operational plan will be plan A:

- Increase advertising budget by 50% to expand market share by 15%, including price cut, if needed.
- Delay a plant modernization for one year.
- Cut R&D by 15%.
- Restore plant modernization and Engineering Research through sales increase in one year.

Strategic plan will be PLAN B:

- New line of computers large scale ICM for the office financial and data processing use in small to medium size organizations.
- New line of typewriter, using integrated circuits and internal memory.
- Continue engineering research on typewriters and drop work on other three.
- Delay plant modernization indefinitely.
- Make major corporate commitment to raise new capital through bond or preferred stock.

(3) Is Jordon taking the right approach?

Yes, Jordan is taking the right approach because: He cannot function autonomously on such a trivial issue, knowing that he has superiors and subordinates as well with whom he must relate for the best of the company. He is a great manager.

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### References

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Mitra, A. (2016). *Fundamentals of quality control and improvement*. John Wiley & Sons.  
<https://www.coursehero.com/file/p6db1n6/B>

<https://quizlet.com/es/353116781/marketing-final-objectives-flash-cards/>