



## Case Study

# Engineers' manpower quality promotion and arrangement plan model: A Case of the Fu Tsu Construction Company

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**Human capital is essential to the success of a twenty-first century enterprise. Therefore this research proposes a succession plan model in order to improve an engineer's quality and to increase his competency and enhance manpower quality. Based on SWOT analysis (Strengths, Weaknesses, Opportunities, and Threats), cultivated talent that can support managers searched the blue ocean strategy of the case company. The manpower quality promotion and arrangement plan model is a process that helps an individual to prepare through mentorship, training, and development for job advancements. A case example from the author's recent consulting experience illustrates a model-assessment process and tool kit tailored to the Taiwan business and cultural environment. The research presents practical guidelines and insights into the manpower quality promotion and arrangement plan model appropriate for an engineer's training and development tools and structures the process for Taiwan's construction industry. Our findings have important implications for an HR consulting practice on how to apply a manpower quality promotion and arrangement plan model to improve an engineer's career and organization development.**

**Key words:** human resource development, competency, manpower quality promotion and arrangement plan model.

## INTRODUCTION

This research explores the major issues in a competency-based manpower quality promotion and arrangement plan model strategy for human resource development (HRD). The paper summarizes a literature review on how competency models can be developed and implemented to improve engineer quality. A competency framework uses strategic imperatives and organization with its key HRD programs. Consequently, HRD interventions such as non-technical training, technical training, and coaching are designed to prepare the workforce for the future and for updating an employee's knowledge, skills, and abilities abbreviated from a name KSAO (Birdi, 2005; Brooks and Nafukho, 2006; Rowold, 2008). Competencies describe the skills, knowledge, behaviors, personal characteristics, and motivations associated with success in a job. The HRD practice nexus is a serious concern that requires further exploration

(Kuchinke, 2004; Mavin, Wilding, Stalker, Simmonds and Rees, 2007). An organization can utilize this information to perform organizational assessment and may be able to improve its HRD strategy, with a particular emphasis on staffing and selection, training and education, organization development, and employee career development (Gangani, McLean and Braden, 2006).

A case study is presented of the Fu Tsu Construction Company, a mid-sized construction industry company established in 1949, where the model is being used to improve the quality of an engineer and gain a competitive advantage. This research is reviewed of the literature, interview manager and using SWOT analysis showed that the research gap of talent loss is the problem; so that the purpose of this study is formed in order to the Fu Tsu Construction Company for HRD has created an engineer's

manpower quality promotion and arrangement plan model. This study reviews HRD literature, competencies, and the manpower quality promotion and arrangement plan model to propose the improvement method to promote an engineer's manpower quality continuously and advance business competency. Therefore it is extremely important to select a training method from both academia and the business sector. In order to enrich the limited literature in this field, this study uses a case study to explore how Fu Tsu construction's engineers have applied quality principles and tools for improving productivity and efficiency. Practitioners can utilize the information presented in this study to develop and implement a manpower quality promotion and arrangement plan model to deploy the human capital of organizations to invest in engineer training and development.

### **Human resource development activities and integrated competency development strategies**

In the past decade, we have witnessed major growth in human resource development (HRD) as an academic discipline and field of study (Garavan, McGuire and O'Donnell, 2004). Slotte, Tynjala and Hytonen (2004) defined HRD as a "covering functions related primarily to training, career development, organizational development and research and development in addition to other organizational HR functions where these are intended to foster learning capacity at all levels of the organization, to integrate learning culture into its overall business strategy and to promote the organizations efforts to achieve high quality performance". The work of the HRD practitioner is continuously evolving. HRD is now expected to make a strategic level contribution and contribute to individual and organizational effectiveness (Gubbins and Garavan, 2005). Within this context, "continuous learning is important both for organizations competing on international markets and for the individual operating in a learning society and as important partners in this society, labour-market organizations are important partners, they are experiencing greater demand on their capacity for organizational learning" (Sambrook and Stewart, 2006). This in turn requires continuous efforts to provide employees with learning opportunities and how to shift the emphasis of HRD activities from training towards other forms of learning. This study is focusing the training and development of engineers, proceeds from the core competencies, share and build the case company's succession planning.

An integrated competency development strategy is evidenced by the discussion on manpower quality and human capital in the professional press over the last years. Whitaker and Wilson (2007) mention human capital does not supersede human resource management (HRM), nor is it purely a measurement-based approach to HRM - they are entirely complementary. The term remains subject to debate and its implementation varies widely. Globalization has only

exacerbated integrated competency development strategies situation. As Taiwan deals with growing needs for technical and middle-management skills while the impending recession will likely slow some talent problems for a short time, the issue is certain to return over the next five years, with more firms unable to compete due to lack of talent (Schiemann, 2008). The main trend of HRD is to nurture the talent required for companies. Therefore, to help enterprises development and growth sustainably, it is necessary to improve the efficiency of the human enterprise assets from a knowledge sharing perspective, and to nurture outstanding successors suitable for enterprises. Business manpower quality promotion and arrangement plan model is the process via which company owners plan for a transfer or disposal of their business to the next generation. Thus, the presence and implementation of succession planning has become a standard tool in HRD (Nieh and McLean, 2011).

### **The plan of FuTsu Construction Company**

Talent is the capital asset of business. The question is how to selection, staffing, training, promotion and retention the development of business with the requirement of market. The important power of organization is not only financial resources and entrepreneurial spirit but also have capable person. Most organization development needs an abundant talent pool will be successful. However, some mature organizations have a problem such as talent unbalance. The main reason for such a situation is lack of talent training and manpower quality promotion and arrangement plan model. This study is arranged by documentary analysis and field observation of the case company.

### **SWOT analysis method**

The strengths, weaknesses, opportunities and threats (SWOT) analysis method is a management tool that allows an organization to better address their internal and external environment and prepare for effective strategic planning steps (Johnson and Scholes, 1999). In the first step, we can discuss the internal and external environment analysis base on SWOT analysis method to understand the situation of construction engineers industry. SWOT analysis method, is also called the situation analysis, and respectively represents. In order to properly leverage the event, the SWOT associated with the hosting of the event can be a valuable exercise and provide knowledge to Fu Tsu Construction Company. From the whole, SWOT can be divided into two parts: the first part is SW mainly used to analysis the internal conditions; the second part is OT, mainly used to analyze the external environment (Jin, 2012). Therefore, according to the internal and external actual environment, this paper is to use the SWOT method to analysis the development trend of the Fu Tsu Construction Company. Conducting a SWOT analysis is useful for the Fu Tsu Construction Company because it helps event

**Table 1.** The Fu Tsu Construction Company of SWOT Analysis

<b>Strengths</b>	<b>Weaknesses</b>
<ol style="list-style-type: none"> <li>1. Fast integrated manpower and outsourcing.</li> <li>2. Company have great trademark (brand image)</li> <li>3. Sound finance.</li> <li>4. Organizational culture is unique in the industry.</li> <li>5. Good reputation for quality, safety and on time delivery.</li> </ol>	<ol style="list-style-type: none"> <li>1. Lacking of core technology and international talent.</li> <li>2. It is not easy to recruit potential new engineer.</li> <li>3. Fewer markets invested for technology.</li> <li>4. New engineer is unaccustomed to changeable customer requirement.</li> </ol>
<b>Opportunities</b>	<b>Threats</b>
<ol style="list-style-type: none"> <li>1. Growth of the construction industry, a construction industry actual performance is very wide.</li> <li>2. Easy to win the trust of customers and commercial image.</li> <li>3. Customer needs fast, changeable and diversity project.</li> <li>4. Customer requires all-round solution project.</li> </ol>	<ol style="list-style-type: none"> <li>1. The price information circulates quickly.</li> <li>2. Competent same trade cut price so as to win the market.</li> <li>3. The discrepancy of competent same trade is not large, and is easily replaced.</li> </ol>

organizers and manager providers to identify how the strengths of their company can be matched with opportunities that exist in the operating environment, show in Table 1.

The strengths and weaknesses are manageable elements within the establishment (in this case) that may influence the objectives of the strategic management process. For example, fast integrated manpower and outsourcing is strength for a Fu Tsu Construction Company while lack of core technology, international talent and not easy to recruit potential new engineer can be a weakness. The great trademark of company and sound finance can also be strength for the organization of the event as without it, bankruptcy, and bad reputation can result. Organizational culture of the Fu Tsu Construction Company is unique in this industry, which good reputation for quality, safety and one time delivery. That focus on construction industry, so fewer markets invested for technology. Analysis of weaknesses in relation to their operating environment such as expressions of new engineer is unaccustomed be reflected to changeable customer requirement causing a negative experience and thus damaging the business opportunities and chances of customer satisfaction.

On the other hand, the opportunities and threats are uncontrollable factors of the operating environment such as, the economy and infrastructure in Taiwan, but awareness of such issues and appropriate planning can mitigate unfortunate outcomes. Opportunities included the growth of the construction industry, business developments, increase customer's trust and commercial image, the improvement and development of customer needs include fast, changeable and diversity project, and customer requires all-round solution project. Threats included the price information circulates quickly, competent same trade cut price so as to

win the market, and the discrepancy of competent same trade is not large, and is easily replaced.

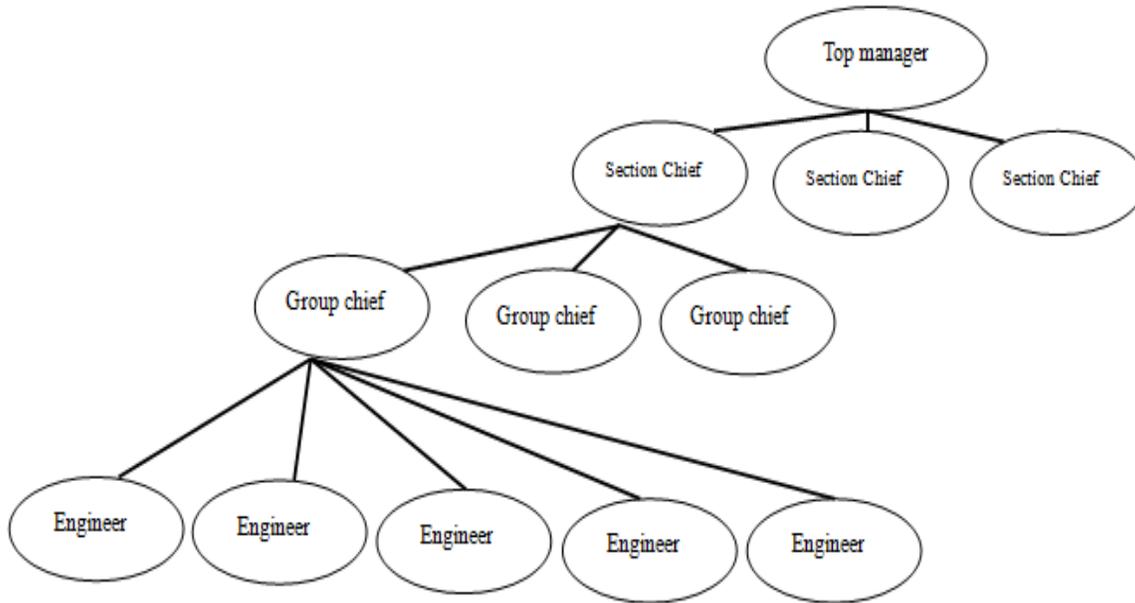
From the Fu Tsu construction company of SWOT analysis (see Table 1), SO described separately Fu Tsu Construction Company has a sound financial and organizational culture and good reputation. Therefore, the construction industry in the development of promising prospects that can be win customers and business image and also has a robust future. On the other hand, the WT described main weaknesses, the lack of talent. Recruiting international talents are not easy, even the engineers are not accustomed to changing customer demands. If this problem is not to response, talents outflow will cause unprecedented problems after the old retired engineer does not enter an appropriate complement engineer newcomers. Based on this point, this no paper makes the promotion and research of Engineers' manpower quality promotion and arrangement plan model to understand and re-create the talent system.

### **Core engineers and manpower quality promotion and arrangement plan model with the FuTsu Construction Company**

Fu Tsu Construction Company selected a manpower quality promotion and arrangement plan model to help engineer through 360-degree feedback in order to establish management talent and the specialized competencies. The preparation involves more than 30 international talents. In the next step ,the model selects engineers based on within or external recruitment with an international perspective and language proficiency of standards. It is a systematic attempt to strengthen their foreign language ability, contract management ability, internationalization eyesight as well as to change management and management of crisis through

**Table 2.** The Number of Cases and Titles of Company

Title		Number
	President	1
Top manager	Director	5
	Associate Director	10
Section Chief		20
Group Chief		100
Engineer		200 ← 400 →600



**Figure 1:** The succession planning and promotion

training to respond to the requirement of internationalization of construction industry.

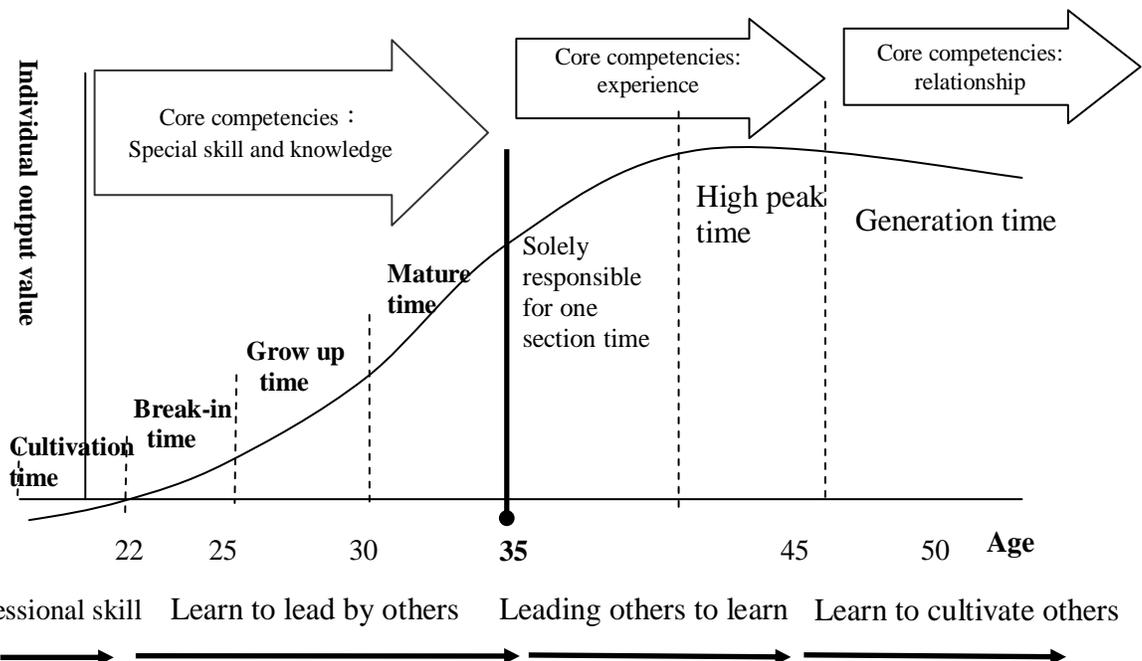
The work contents of engineers include, in the limited time and resources restrictions, effective allocation of resources, effectively communicate and outside the organization, coordination and supervision. Essentially, we talk about engineers management responsibility includes project achievements for contribution, construction site achievements and engineer productivity. Engineers have skillful work is a new human resources tool for companies needing to find skilled engineers. Engineers who focus on studying the careers, particularly the transition from specialists to general managers, have made a distinction between different career paths Table 2 shows the titles of Fu Tsu’s number of employees. The manpower quality promotion and arrangement plan model is shown in Figure 1. The figure shows many engineers between 200 and 600, averaging about 400 engineers, 100 group chiefs at a higher level, and 20 chiefs of the section sat the highest. Generally, a group chief at manage between 2 and 6 engineers. A section

chief at manage 5 group chief. Top managers include assistant director, director, and president that are total about of 16 top managers.

Table 3 and Figure 2 show the plan of employee functional development schedule and the cycle curve of individual value. In this case study of engineers’ competencies base on promotion examination or special skill test and supervisor evaluation once annually. There are three level engineers average age is 30. Engineers in addition got GEPT junior license and their job function experiences include drawing, measuring, safety and sanitary, estimation and inspection, quality control, even are construction plan and tender estimation. When they were more than 34 years old began successor to the group chief who mostly average age of 37 and requires construction site license, GEPT middle rank license. Group chief have need procurement and contract out, estimation and inspection, and other prepare tender work affairs. Almost they can promotion top manager when they were 40 years old. When they become section chief whose have management of construction under 10 hundred

**Table 3.**The Plan of Employee Function Development Schedule (Construction Personnel)

Age	Title	Job function experience			License	Competencies	Performance
		Step 1	Step 2	Step 3			
25~28	Engineer 1	Drawing	Measuring	Safety and Sanitary	GEPT junior and others		
28~31	Engineer 2	Work things 1	Estimation and Inspection 1	Quality Control			
31~34	Engineer 3	Work affairs 1	Construction Plan	Prepare tender/estimation			
34~37	Group Chief 1	Work things 2	Procurement & Contract out 1	Estimation and Inspection 2	Construction site license, GEPT middle rank and others	Promotion Examination or special skill test	
37~40	Group Chief 2	Procurement & Contract out 2	Work Affairs 2	Prepare tender			
40~45	Section Chief 1	Section Chief representation	Management of construction under 10 hundred millions	Management of construction of 20~40 hundred millions scale			
45~50	Section Chief 2	Management of construction above 40 hundred millions Supervise single construction site or proprietor			Master degree, EMBA and others	Supervisor evaluation once annually	
50~55	Associate Director	Supervise construction site of diversification or proprietor					
55~60	Director	Department operator					



**Figure 2:** The Cycle Curve of Individual Value

millions. Even management of construction above 40 hundred millions supervises single construction site or proprietor. In this case the top manager average age was 50 who have to supervise construction site of diversification or proprietor and department operator. Usually, top manager has Master degree or already got EMBA. Follow figure 2 shows the individual value cycle curve, before the age of 35 their core competencies are professional skills and knowledge. Those between the ages of 40-45 are the most productive and their core competency is experience. After 45 years old the core competencies is relationship.

### **The manpower quality promotion and arrangement plan model with the Fu Tsu Construction Company**

The Fu Tsu Construction Company's succession planning arrangement model consists of five steps: 1) promoting engineer quality in order to enhance manpower foundation; 2) improving the manpower system, maintaining; 3) cultivating talent of engineers; 4) integrating knowledge management; and 5) introducing 360 degree talent assessment. These steps are discussed in further detail below.

#### **Promoting engineer quality to enhance manpower foundation**

The basis of promoting engineer quality in these steps comprises the following: check enterprise of manpower inventory to identify the loose, un-activated organization of human; integrate enterprise resources to improve the configuration and processes; and restructure for the optimal size of the enterprise.

First, the Fu Tsu Construction Company of HR manager has allocation of manpower supply and demand to understand the differences in engineer capacity, expertise finding their competency gap. In addition to the quest for external senior professionals to make up the lack of internal human and eliminate incompetent engineer in order to meet office planning business tragedy. In accordance the human quality and quantity target completed the first step in the transformation of optimal size in the enterprise. Secondly, the set of business strategic objectives be achieved, such as a new development model of the demand for engineering talent, each unit or department should review the reasonable staffing and assessment personnel in accordance with the strategic objectives of quality and quantity. From engineers of should have competency and already have competency to determine the standard of fit to narrow the gap between supply and demand by training and development way. Finally, HR manager should be developed or amended job description including positions basic education, basic capabilities of the positions, positions should have the expertise of years of experience, duties with due skill, personality traits, and job-related work. In order to promote economic benefits and creation of internal manpower

supply, manpower inventory mainly by design engineer jobs and rationalization of staffing.

Otherwise indicated, the case company of manpower by the core competency which departure order to formulate an each job capacity needs and development of the required competency. HR make the selection tools (competency questionnaire) based on preliminary screening to select engineers appropriate for the Fu Tsu Construction Company. Adopted behavioral events interviewing (BEI) competency interviews and competency oriented approved in the staffing process, before deciding to appropriate any of the candidates. The core functions of the project will be translated into performance appraisal project, to evaluate the performance with the use of competency item sand performance improvement program to achieve manpower quality promotion and arrangement plan model.

#### **Improving manpower system, maintaining**

Determine problems facing engineers in the process of improving their knowledge and skills through eLearning approach; establish the level of attainment of manpower development objectives of the Fu Tsu Construction Company. Meanwhile, manpower development or HRD refers to the improvement in knowledge, skill, attitude and endowment of engineer force so as to bring about sustained economic growth. Learners already have work experience can demonstrate high levels of initiative and responsibility while accomplishing learning. Also, learners will respond to learning activities in accord with the demands of their individual situations.

#### **Cultivating talent of engineer**

HR Manager can check the basic engineer core competencies manpower inventory plan, and push further regulate engineer's qualifications for promotion, to fulfill an administering rewards and review the salary structure and bonus system, to resolve the discrepancy between new and old engineer. Engineers are through examination or special skill test with increasing age and experience or skill growth for promotion to higher level. When generating positive competition effect, the excellent engineers are promotion for a group chief who can to implement job rotation system to encourage learning and innovation challenge. At this time, HR managers conduct classes to design training and development for enhance core competencies, how to promote achievement and engineers ability, on the job training, and management training. Therefore, through training and development can be strengthened enforcing the foreign language ability of talent reserved, contract management ability, progress management ability, and strengthen internationalization eyeshot, change response and crisis management ability to respond the requirement on internationalization of construction industry.

### **Integrating knowledge management**

The knowledge management refers to the production, sharing, application, and transformation of knowledge, so as to help the organization seek higher performance, and better competitiveness. This framework supports the views of knowledge as objects and knowledge as the knowing process. The committee of the Fu Tsu Construction Company was established the knowledge management system. A variety of information technologies enable knowledge storage, retrieval, and transfer, including tools that support individual and organizational memory, communication, and knowledge access. Examples of these tools are bulletin boards, discussion forums, knowledge repositories and directories. All colleagues release a lot of implicit knowledge, which stored in their own mind and to share with others through discussion platform. Information technologies that support the knowing process consists of learning tools, expert systems, and workflow systems. Knowledge is stored, retrieved, and transferred to enable knowledge creation and application, in which individuals and groups create new knowledge while using existing knowledge to perform organizational activities.

### **Introducing 360 degree talent assessment**

The fifth step in the formation of the introduction of 360-degree management competency assessment succession planning of engineers to train with international talent. A succession planning for engineer at the Fu Tsu Construction Company through the management competency assessment 360-degree talents assess. Impose an effective and complete develop training, making it both professional competence literacy and management to the full range of competent personnel. The consideration of usability in the process of designing and selecting internal engineers or recruitment external engineers of language proficiency level base on outside training to enhance international talents. In case study there are actually more than 30 operating personnel are reserved. In the reserve talents training are also very important part, to strengthen their foreign language skills, contract management capabilities, schedule management capabilities and enhance their international perspective and crisis management capabilities to cope with the demand of the international engineering.

### **Conclusion and Suggestion**

The purpose of the human resources profession in the twenty-first-century is to cultivate talent. No matter whether a manager is preparing to succeed the successor planning currently, they have a long-term succession plan. The main trend of human resources development is to nurture the talent that companies require. Pepe (2007) described how the core human capital processes are driven by the business strategy and the success factors. The success factors

represent the skills, knowledge and behaviors required for success in leadership roles. Talent cultivation cannot achieve instant results; although it is not possible to have a full harvest immediately, through driving a successor plan and cooperating with the proper support measures, businesses indeed may enhance their manpower capital.

The Fu Tsu Construction Company has clear blueprints for learning and learning paths for its core positions, such as business, engineering, and management. In pace with learning development and growth assignments as an organizing framework that success factors help to determine training content and areas of emphasis for growth assignments. The HR strategic manager ensures that the criteria employed in recruitment and selection process, and particularly behavioral interview questions, were refined using the success factors. Finally, rewards are the link between pay and performance; these are underscored by using the rating scales and language of the success factor model when providing performance feedback and discussing merit increases.

The engineer come from or transferred had shown training courses are detailed list to new positions one to four years. Chief executives and engineer reference to the blueprint path, that can easy to discuss personal development meter out the year painting. This study discusses each engineer's development plan that effects of an engineer quality promotion plan on the individual, group, organization are as follows. At the individual (supervisor) level, all engineers must understand the function objective of each position in promoting individual achievement, efficiency and career planning. For the group level, beginning from Group Chief establish fellow engineers unspoken consensus and group development core to enhance group morale and work motivation, further to promote group work achievement and to create competency priority. For organization level, Managing Director must promote the service quality, market share, company business revenue to create a complete business target and prospect. The above is recommended for the realization of the case report; we can view the results of the implementation every year or next 3-5 years in the future. This research also provides advice on the academic, such as to understand the engineers' suggestion about more complete management ideas.

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