

# Influencing Factors on Project Overrun: Is It Intrapreneurship?

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# Introduction

- Project must be well-defined and controlled to make sure the successfulness of the project
  - ▣ Given the dynamic nature of various projects, a close evaluation on project becomes interesting to study
- Major concentration of this study
  - ▣ To find out the planning and controlling process of the overhauling pilot project
  - ▣ Mainly in the stage of planning and controlling of budget
    - Labor cost
    - Time schedules

# Introduction

- Findings the influencing factors on the budget and schedule overrun may help PT XYZ in handling similar upcoming projects.

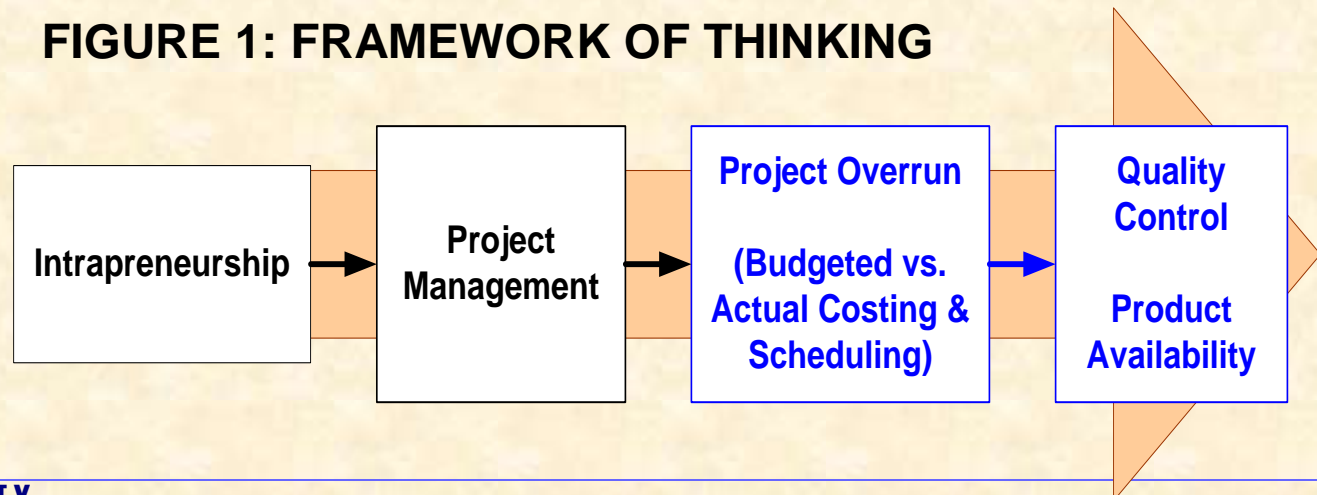
## ■ Focus on an overhauling project at PT XYZ

- 2 main activities include; “examination of the vehicles’ engine”, and “physical repair of the vehicle”
- To evaluate;
  - ◆ Factors in planning process that may contribute to project delay

# Introduction

- This study uses the perspective of intrapreneurship in attempting to study the issues on project overrun.
  - ▣ Intrapreneurship is used as the basis to formulate the critical thinking and actions in handling project management
    - This study concerns only with costing and scheduling of projects

**FIGURE 1: FRAMEWORK OF THINKING**



# Theory: Project Management

- For organizations, projects are both **revenue-generator** as well as **solution-generator** (Ahsan and Gunawan, 2009; Mulawarman, 2010)
- Project covers a relatively vast areas of concentrations;
  - ▣ **Planning, organizing, and managing** (Kumar, 2005; Mulawarman, 2010)
    - Task and resources management
    - Within specific time and cost

# Theory: Project Management

- **Primary forces behind project management;**

(Meredith and Mantel, 2006)

- ▣ Demand for customized products
- ▣ Exponential expansion of human knowledge
- ▣ Global production~consumption

- Increase time and cost
- Increase complexities
- Increase chances of errors & defective products

# Theory: Project Management

- In project planning, estimation of risk is crucial (Kumar, 2005; Nazeni, 2010)

## Focus on

- Direction, guidance, and timeline
- System integration
- Agreed-upon methods and action steps
- Monetary measurements (Meredith and Mantel, 2006; Mulawarman, 2010)

# Theory: Project Management

- **Project overrun** often occurs during the project development phase (Kerzner, 2001; Mulawarman, 2010)

## Common causes;

- Misunderstanding of the customer requirements
- Misappraisal of in-house capabilities
- Underestimating time requirements
- Inaccuracy of details in work-breakdown
- Inappropriately used of techniques/approaches
- Misidentification of cost elements
- Inaccurate forecasting and specification
- Other macro economic conditions beyond management controls



# Theory: Project Management

- Resource Management (material management) is regarded as the key success factor in project management (Anantadjaya, 2007; 2009; Ebert and Griffin, 2005; Meredith and Mantel, 2006)
  - ▣ Tangible vs. intangible resources
  - ▣ Productive vs. unproductive resources
  - ▣ Fast-moving vs. slow-moving resources
  - ▣ Availability of labor, machinery and equipment, capital, information, and entrepreneurship

# Theory: Project Management

- Resource Management also handles scheduling complexities (Kumar, 2005)
  - ▣ General scheduling is considered manageable, but....
  - ▣ inserting **details of tasks** and **project elements** are problematic
- Using computer-aided programs, such as; Gantt Chart, or PERT



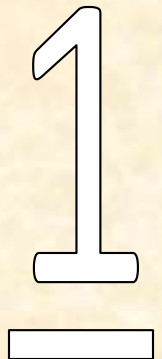
**Increase cost**

# Theory: Project Management

- Project control is important to monitor progress by simply comparing the project planning with the actual run-down of the project, and justifying any deviations toward the project's objectives (Cleland and Ireland, 2006; Flores and Chase, 2005)
- Monitoring and constant evaluation should be administered during the entire project life cycle
  - ▣ This is the stage where aligning accumulated costs with the project planning may turnout to be very alarming for the project team and its management

# Theory: Project Management

- A relatively basic measuring stick in project management is **Earned Value Analysis** (“EVA”) (Meredith and Mantel, 2006)
- Cost variance
  - The difference between “earned value of the budgeted cost of work performed”, and “actual cost of work performed”
  - This cost variance is “negative” when project overrun occurs



# Theory: Project Management

- A relatively basic measuring stick in project management is **Earned Value Analysis** (“EVA”) (Meredith and Mantel, 2006)
- **Schedule variance**
  - The difference between “earned value of the budgeted cost of work performed”, and “planned value of budgeted cost of work scheduled”
  - This cost variance is “negative” when project falls behind schedule



# Theory: Project Management

- A relatively basic measuring stick in project management is **Earned Value Analysis** (“EVA”)  
(Meredith and Mantel, 2006)
- Time variance
  - The difference between “scheduled time for work performed”, and “actual time of work performed”
  - This cost variance is “negative” when there are any delays during the project run-down



# Theory: Intrapreneurship

- Entrepreneurial activities do not seem to be far apart from risks and risk management
- The word “entrepreneurship” can be freely defined as one’s willingness to take and assume risks in relation to one’s available and/or potential resources, situations, and conditions to create **something new** (Anantadjaya, 2007; Earle and Sakova, 2001; Hisrich, et al, 2005; Iyigun and Owen, 1997; Krug and Metha, 2001; Yogaswara, et al, 2005)

 Creating something “new” or “different” is **creating “value”**

# Theory: Intrapreneurship

- The study on entrepreneurship is generally encircled around “business plan”.
  - Business plans attempt to portray prediction on overall operations in the future
  - Business plans entail constant reviews and evaluations, not only deviations from the prescribed paths, but also on the current stage (Anantadjaya, 2007; Stutely, 1999)
    - Business plan = strategies
    - This mirrors the context of the project management



## Theory: Intrapreneurship

- For entrepreneurs, business plans are often regarded only as a mere documentation of notes on what the entrepreneurs are planning to do (Anantadjaya, 2007).
  - ▣ Successful attainment of goals is often based on **entrepreneurial spirit of entrepreneurs themselves**, not on the formulation of business plans.
  - ▣ It is wondered whether the **entrepreneurial spirit toward growth and reach the satisfactory outcome** may contribute to the successful completion of particular projects

# Theory: Intrapreneurship

## ■ Influencing factors (Anantadjaya, 2007);

- Hyper-competition among projects within an organization, or competing projects with different organizations
- Challenges in technological advancement
- Shorter product life-cycle
- Innovation

It is expected that intrapreneurship can reveal its true identity in contributing to the victorious achievement, and avoiding project overrun (Anantadjaya, 2007)

# Theory: Intrapreneurship

- **Hyper-competition** (Anantadjaya, 2007; Hisrich, et al, 2005; Kotler, 2000)
  - ▣ **Competing projects** within the same organization, and competing projects handled by different organization in similar product/service lines
- **Technological advancement** (Anantadjaya, 2007; Haag, et al, 2004; Hisrich, et al, 2005; Kotler, 2000)
  - ▣ With the presence of technology, **entrepreneurs must act fast** as if they have incorporated such technological advancement in their own organizations
  - ▣ Could serve as a sizeable **leverage** for organizations (Dauphinais and Price, 1998)
    - Time, speed, quality, accuracy, ability to perform data mining/warehousing, forecasting, and modifications

# Theory: Intrapreneurship

- **Shorter product life-cycle** (Anantadjaya and Nawangwulan, 2006; Anantadjaya, 2007; Haag, et al, 2004; Hisrich, et al, 2005; Kotler, 2000; Yogaswara, et al, 2005)
  - As competition rises, organizations are competing themselves to constantly provide new and better products
  - As the project team enters different stages in the project life-cycle, customization and special requests from customers add intricacies in delivering acceptable results
    - Ironically, customizations and special requests may also throw-off the initial project planning and budgets

# Theory: Intrapreneurship

- **Innovation** (Dauphinais and Price, 1998; Burlton, 2001; Dunham and Venkataraman, 2002; Galliers and Leidner, 2003; Gamsey, et al, 2004; Haag, et al, 2004; Hisrich, et al, 2005; Knyphausen-Aufsess and Bieger, 2006; Irawanto, 2006)

❑ Innovation cannot be considered as a mere outcomes of intelligent individuals

- It is integrative approaches across divisions in an organization
  - ◆ transforming ideas, methods, and other predictions into successful results in delivering projects

❑ The presence of technology provides an ample leverage toward innovation (Dauphinais and Price, 1998; Kotler, 2000, Burlton, 2001; Dunham and Venkataraman, 2002; Galliers and Leidner, 2003; Gamsey, et al, 2004, Haag, et al, 2004, Hisrich, et al, 2005; Yogaswara, et al, 2005, Knyphausen-Aufsses and Bieger, 2006; Irawanto, 2006)

## Research Method

- Focus on 1 organization to study the details on project management

### PT XYZ is an automotive firm in Indonesia

- Manufactures and distributes vehicles, including their spare-parts
- It is a foreign-direct investment firm
- It is the sole agent, assembler, and manufacturer of a certain brand of vehicle

### Overhauling project

- Since it was completed, but experienced **schedule overrun** and **costs overrun**.

## Research Method

- Variables chosen to measure the intrapreneurship in project management.
  - ▣ Hyper-competition
  - ▣ Technological advancement
  - ▣ Shorter product life-cycle
  - ▣ innovation
- Methods used were solely based on **observation** and **interviews** with project team members

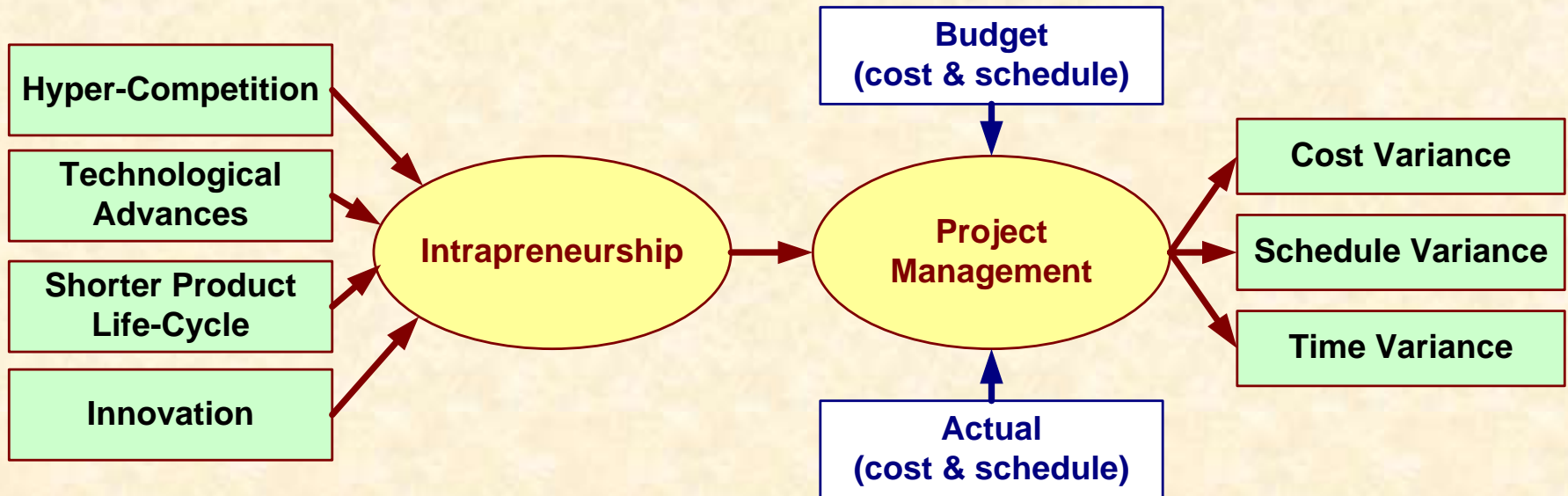
## Research Method

- Variables chosen to measure the successful project management
  - ▣ Cost variance
  - ▣ Schedule variance
  - ▣ Time variance
- Methods used were solely based on the firm's available data on the overhauling project
  - ▣ To reveal the influencing factors on project overrun
    - Due to technical issues, or
    - Due to human soft-skills



# Research Method

**FIGURE 2: RESEARCH MODEL**



## Results & Discussions

- Summary of the comparison between project planning and actual run-downs;
  - ▣ *Dismantling process took 2 more days*
    - This is due to the inaccurate risk assessment on axles dismantling work
  - ▣ *Cleaning process took longer than it was originally expected.*
    - This is due to the total amount of resources used during the actual run-down of projects

## Results & Discussions

- Summary of the comparison between project planning and actual run-downs;
  - ▣ Project was executed based on technicians' experience, instead of fully conforming to the planning guide
  - ▣ Engine work, transmission work, axle project, engine installation, steering project, and brake mechanical work, took longer
    - This is due to the lower level of workers' skills in the actual project
  - ◆ The utilization of skillful workers vs. semi-skilled workers

# Results & Discussions

- Schedule overrun occurred due to;
  - ▣ *Unavailability of spare-parts*
    - Without axles, other subsequent processes had to be postponed
  - ▣ *The investigation schedule during the project*
    - Physical checking on the spare-part availability took longer
  - ▣ *During project planning, workers were assigned specific tasks in a day*
    - Multi-tasking was not encouraged

# Results & Discussions

- Schedule overrun occurred due to;
  - ▣ Work sequence was worse than it was originally planned
    - Due to the postponement of the previous processes, other tasks were not in sequence anymore
      - ◆ This impacted the overall time efficiency

## Results & Discussions

■ The table indicates that the project planning was not even following the working instruction guidelines

- Working instruction was based on semi-skilled labors (the **most pessimistic** approximation)

◆ Utilizing more skillful labors will reduce time

◆ Project planning was based on more experienced labor (the **most optimistic** approximation)

» **Reduction in time** leads to **reduction in project cost**

**TABLE 1: COMPARISONS ON TIME SCHEDULE (IN DAYS)**

**SOURCE: PT XYZ, 2010**

Working Instruction	Project Planning	Actual Project
50.2 Days	16 Days	<b>37.5 Days</b>

# Results & Discussions

**TABLE 1: COMPARISONS ON TIME SCHEDULE (IN DAYS)**

**SOURCE: PT XYZ, 2010**

Working Instruction	Project Planning	Actual Project
50.2 Days	16 Days	<b>37.5 Days</b>

Attempted to reduce project time by 34.2 days

Attempted to take/assume risks in tackling project in less time

Project time was actually reduced by 12.7 days

Project time was actually assumed risks in dealing with delays

However, if this project was to be evaluated based on the project planning, this project was considered overrun by 21.5 days. This is definitely a costly overrun for the firm.

# Results & Discussions

**TABLE 2: COMPARISONS ON TIME SCHEDULE (IN DAYS)**  
**SOURCE: PT XYZ, 2010**

Project	Total Duration (in days)	Total Cost (Rp)	Average Cost per day
Planning	16 days	17,080,000	1,067,500
Actual	37.5 days	21,550,000	574,667
<b>Difference</b>	<b>21.5 days</b>	<b>4,470,000</b>	<b>207,907</b>

Project planning was formulated at an average cost of Rp. 1 million/day

Actual run-down of the project was performed at an average cost of Rp. 574,667/day

Average cost was "cut" into half

Total duration was more than half

Though the actual project run-down **lost the competition in terms of duration** of the project by 21.5 days, it **won by far in terms of the overall project costs**

**... willingness of the project members to reduce cost in anyway they can ...**



# Results & Discussions

- Earned Value Analysis (“EVA”)
  - ▣ to measure the overall performance of the project
  - ▣ this can be calculated when the overhauling project had only been 2/3 completed

**TABLE 3: COMPARISONS ON TIME SCHEDULE (IN DAYS)**  
**SOURCE: PT XYZ, 2010**

<b>EV</b> = Rp.17,080,000 (2/3)	<b>ST</b> = 16 days
<b>AC</b> = Rp.21,550,000	<b>AT</b> = 37.5 days
<b>PV</b> = Rp.17,080,000	
<b>Cost Variance = EV – AC</b> = Rp. 17,080,000 (2/3) - Rp.21,550,000 = <b>Rp (10,163,333)</b> The negative cost variance means that the actual project had been <b>overrun</b>	
<b>Schedule Variance = EV – PV</b> = Rp. 17,080,000 (2/3) - Rp. 17,080,00 = <b>Rp (5,693,333)</b> The negative schedule variance means that the actual project had been <b>behind schedule</b>	
<b>Time Variance = ST – AT</b> = 16 days - 37.5 days = <b>(21.5) days</b> The negative time variance means that the actual project had been <b>delayed</b> .	

## HYPER-COMPETITION

- \* **Appeared to exist** between the competing projects within PT XYZ
- \* Internal competition exists due to “limited numbers of skilled labors”, and “resource management”
- \* External competition is non-existent since PT XYZ is the sole distributor and handles only a particular brand of vehicles in Indonesia

## Results & Discussions

### TECHNOLOGICAL ADVANCEMENT

- \* **Appeared to have been fully satisfied by the management**
- \* All available machine, equipment, and necessary tools to handle the overhauling projects have already conformed to the latest technology
- \* Project members should be able to handle the project effectively
- \* With the available technology, project members can perform their tasks easier and faster. Hence, it increases efficiency

## SHORTER PRODUCT LIFE-CYCLE

\* **Did not seem to exist** in the overhauling project at PT XYZ

\* Despite numerous new products in the market, customers tend to place special orders to have the overhauling project done by PT XYZ

\* The overhauling project did not experience a shortening product life-cycle. In fact, PT XYZ experiences a prolonged product life-cycle since customers tend to stick on using the old vehicles (for overhauling), rather than purchasing new ones

## Results & Discussions

### INNOVATION

\* From the perspective of standardized specifications, including steps and procedures, innovation **did not seem to exist** in the overhauling project at PT XYZ.

\* From the perspective of formulating the fine mixture of people and available resources, innovation **did exist** in the overhauling project at PT XYZ. Project members appeared to find ways to reduce the duration of projects, using a combination of skills and level of experience from technicians and labors

# Conclusion

- Project SWOT analysis

- ▣ Strengths = good quality control

- The use of computerized systems and mechanical engineering

- ◆ Function test = to test whether everything are in function
    - ◆ Track test = refers to the road test (to experience the results of overhauling project in motion)
    - ◆ These tests are to maintain
      - » Safety: vehicle strength, loading ability, and handling maneuverability
      - » Comfort: suspension and structure

# Conclusion

- Project SWOT analysis

- ▣ Weaknesses = product unavailability

- This was mainly due to the requirement to import some parts from other countries

- ▣ Opportunities = possibility in cost reduction

- ▣ Threats = potential delay and postponement

# Conclusion

- Comparison analysis between “project planning” and “actual project”
  - ❑ No risk management during this project
  - ❑ Project members were too optimistic in formulating the project planning
  - ❑ Engine-dismantling process was skipped due to the length of time require on the previous process
  - ❑ Spare-part unavailability has put the project into overrun situation
  - ❑ Work sequences were relatively inefficient (1 task/day) instead of multi-tasking

# Conclusion

- Shorter product life-cycle did not contribute to intrapreneurship
- Hyper-competition, technological advancement & innovation qualitatively contribute to intrapreneurship
- Project members appeared to maximally strive for time and cost reduction
- Project management is closely related to the spirit of intrapreneurship

 **Optimistic view + lowering project risk**

## Recommendation

- Though this study is limited only to 1 overhauling project, it appears to have provided the preliminary foundation on the formation of influential factors on project management and intrapreneurship.
- Future studies can include
  - ▣ more variables, measurements, and projects to attempt a better evaluations on project management and intrapreneurship.
  - ▣ Use of quantitative study to really quantify the relationship of intrapreneurship into the project management



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