

# **Value-Based Approach on Project Management:**

# **Empirical Evidences on Indonesian Firms**

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# Introduction

- Project must be well defined and analyzed carefully.
  - ▣ Sequences of processes, from project planning, project control and monitoring, represent the critical links toward the successfulness of a project.
  - ▣ Project evaluation becomes an interesting issue to study (Anantadjaya and Mulawarman, 2010).
  - ▣ The accounting/finance perspective is used in this paper to find out the project controlling process on the overhauling project, including noting the likelihood of organizational value creation.

## Introduction

- This study focuses on overhauling project in automotive firms, which include examination of the vehicles' engine, and physical repair of the vehicle.
- It is expected that this study is able to enhance the comprehensive mindset of project committee members toward value-based management.

# Theoretical Perspective

- **Project Management** (Anbari, 2003; Brandon, 1998; Cleland and Ireland, 2006; Fleming and Koppelman, 1998; Flores and Chase, 2005; Meredith and Mantel, 2006; Valle and Soares, 2004)

- ▣ Cost Variance

- ▣ Schedule Variance

- ▣ Time Variance

**Value-Based Management** (Copeland, et al, 1995; Francis and Minchington, 2000; Ittner and Larcker, 2001; Koller, 1994; Nasmul, 2011; Mansour, 2004)

Margin  
Turnover  
Leverage  
Tax-savings  
Growth

## Research Method

- The period of coverage in this study spans from 2009-2012 (only the first quarter).
- Firm A, B, C, and D are automotive firms in Indonesia that distributes vehicles and spare-parts.
- Research activities included;
  - ▣ direct observations of common practices in project management, and
  - ▣ attainment of secondary data to support the objectives of this study

# Research Model



- Indicators for project management are; (Anantadjaya and Mulawarman, 2010; Meredith and Mantel, 2006; Valle and Soares, 2004)

- cost variance
- schedule variance
- time variance

# Research Model

**FIGURE 1: Research Model**



- Indicators for organizational performance are (Copeland, et al, 1995; Francis and Minchington, 2000; Ittner and Larcker, 2001; Koller, 1994; Nasmul, 2011; Mansour, 2004);
  - ▣ “margin” to note the “operational efficiency”, and
  - ▣ “turnover” to show the “asset efficiency”.
- As indicators of macroeconomic conditions, this study relies on the country’s gross domestic product (“GDP”), interest rates, and inflation rates (Frederica, 2012)

## Results & Discussions

- Summary of the comparison between project planning and actual run-downs;
  - *Dismantling process took 5 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 difference in total amount of resources planned and used during the actual run-down of projects



## Results & Discussions

- Summary of the comparison between project planning and actual run-downs;
  - *The actual engine modification processes took longer time than it was originally expected*
    - as the project included semi-skilled workers, including interns and newly hired personnel.
    - The engine modification processes include multiple tasks; transmission overhaul, axle overhaul, new engine installation, steering mechanism overhaul, braking mechanism overhaul.

## Results & Discussions

- Summary of the comparison between project planning and actual run-downs;
  - ▣ *An average of 2 additional days for quality control*
    - due to substandard project members in handling the actual project run-down.
    - To ensure satisfactory quality as per clients' requests, extra quality audit prior to finishing and approval processes by the management were unavoidable.

# 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

- Pessimistic is based on semi-skilled workers.
- Optimistic is based on the skilled labors

**Table 1: Comparisons on Time Schedule**

Working Instruction (average)		Project Planning (average)	Actual Project (average)
Pessimistic	45 days	15 days	<b>60 days</b>
Optimistic	30 days	7 days	

Source: Firm A, Firm B, Firm C, Firm D, 2009-2012, modified

## Results & Discussions

- Those average results indicate the intricacies in managing projects.
  - ▣ Customized orders added difficulties level.
    - Project members were independently trying to take on a more optimistic approach in handling the project. Aiming for a total of 45 days
  - ▣ The actual project run-down missed the mark by 50%.
  - ▣ As mentioned previously, delays occurred due to shipments of materials and spare parts. As the shipment was beyond the management control, it would have been difficult to forecast accurately on the actual day of arrivals.

# Results & Discussions

Table 2: Comparisons on Project Planning and Actual

Project	Total Duration (in days)	Total Cost	Average Cost (per day)
Planning (pessimistic assumption)	15 days	Rp. 25,785,600	Rp. 1,719,040
		US\$2,865	US\$191
Actual	60 days	Rp. 48,825,350	Rp. 813,756
		US\$5,425	US\$90.42
<b>Difference</b>	<b>45 days</b>	<b>Rp. 23,039,750</b>	<b>Rp. 511,994</b>
		<b>US\$2,560</b>	<b>US\$56.88</b>

Note: the conversion into US dollars is based on the exchange rate of Rp. 9,000/US\$1

Source: Firm A, Firm B, Firm C, Firm D, 2009-2012, modified

**Project cost vs project duration**  
**Project actual cost is 47% lower than the original budget**  
**Project duration is 30 days overrun**

# 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 Variance

**EV** = Rp. 25,785,600 (2/3) = Rp. 17,190,400

**ST** = 15 days

**AC** = Rp. 48,825,350

**AT** = 60 days

**PV** = Rp. 25,785,600

**Cost Variance** = **EV** – **AC** = Rp. 25,785,600 (2/3) - Rp.48,825,350 = **Rp (31,634,950)**

The negative cost variance means that the actual project had been **overrun**

**Schedule Variance** = **EV** – **PV** = Rp. 25,785,600 (2/3) - Rp. 25,785,600 = **Rp (8,595,200)**

The negative schedule variance means that the actual project had been **behind schedule**

**Time Variance** = **ST** – **AT** = 15 days - 60 days = **(45) days**

The negative time variance means that the actual project had been **delayed**.

Source: Firm A, Firm B, Firm C, Firm D, 2009-2012, modified



## Results & Discussions

- Average performance indexes;
  - ▣ CPI of 0.35 indicates that the actual spending on project run-down was more than it was originally planned for.
  - ▣ SPI of 1.50 means that the project performance is actually more than it was originally planned for.

Table 4: Average Performance Indexes

	Calculations on Indexes (average)
CPI = EV/AC	Rp. 17,190,400/Rp. 48,825,350 = <b>0.35</b>
SPI = PV/EV	Rp. 25,785,600/Rp. 17,190,400 = <b>1.50</b>

Source: Firm A, Firm B, Firm C, Firm D, 2009-2012, modified

## Results & Discussions

■ Hence, the average of projects that firms have worked-on appeared to be performing beyond the planning, and/or standards.

- This may be due to the highly customized orders, whose materials and spare-parts may not be readily available in the market.
- This has considerably influenced the timeframes on project completion.

# Results & Discussions

Table 5: Average Operational Efficiency

	2009	2010	2011	2012*
<b>Average Margin</b>	-2.5%	10.1%	12.5%	7.5%

\* these figures were annualized

Source: Firm A, Firm B, Firm C, Firm D, 2009-2012, modified

## • Operational efficiency

■ The higher margin indicated that firms have been successfully managing their project costs.

- Hence, though the average actual project run-down may have indicated setbacks during the period of 2009-2012 until the first quarter, the average operational efficiency did not appear to conform to such delays.

# Results & Discussions

Table 6: Average Asset Efficiency

	2009	2010	2011	2012*
<b>Average Turnover</b>	1.5x	3.2x	7.5x	9.7x

\* these figures were annualized

Source: Firm A, Firm B, Firm C, Firm D, 2009-2012, modified

## • Asset efficiency

▣ The higher turnover indicated that firms have been successfully managing their project run-down; from the beginning to the completion.

- Hence, though the average actual project run-down may have indicated a slim increase during the period of 2009-2012 until the first quarter, the average asset efficiency did not appear to conform to such delays.

## Conclusion

- The average projects were overrun
- From the VBM perspective, though the average projects were delayed, the margin and turnover appeared acceptable.
  - ▣ This meant that such delays did not show any evidence of declining in values, as returns for the companies.
  - ▣ Though not all of the mechanics and technicians were highly skillful, however, as time passes, their level of experience increases.
    - Future projects could have been handled a lot more better.

## Recommendation

- Though this study was able to bring up evidence on the project overrun, this study was also able to show that the project is well under “control”, in terms of VBM.
  - It is suggested that the project working instructions may have to be constantly modified to reflect the current situation and condition of the firms.
  - In particular, portions of skilled and semi-skilled labors, availability of parts, and other materials requirements, should be monitored and/or frequently updated.