

IT Value Analysis by Resource-Based View Theory: The Case Study of PT. Telekomunikasi Indonesia, Tbk.

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Outline

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Introduction (1)

- PT. Telekomunikasi Indonesia, Tbk (Telkom) as the largest telco company in Indonesia.
- Telkom consists of two business activities: main and support businesses.
- Main business is to plan, build, deliver, develop, operate, sell, and maintain telecommunications and information networks in the broadest sense with respect to provisions of laws and regulations.
- Supporting business is to provide payment transaction and remittance services via telecommunications and information networks.

Introduction (2)

- The case study was conducted at Telkom in terms of the role of Information Technology (IT) with regard to business performance.
- IT possesses strategic function in business by means of cost reduction, business process effectiveness, time saving, etc.
- There is close relationship between IT resources role and Telkom business performance.
- This case study intends to validate the RBV-based model in terms of IT value; i.e. IT resources owned by Telkom have close relationship to its business performance, so they will help to increase the business accomplishment

The Case Study (1)

- Refer to Telkom Annual Reports (TAR) that published regularly. The annual report, which this paper is based on, has been published for 8 years back, i.e. from 2005 to 2012.
- Some assumptions referred to the TAR in terms of IT spending as follows:
 - Principally telco's industries, including Telkom, are IT-based firm organizations; therefore, Telkom spending is IT spending as well. However, in order to strengthen IT value research on this paper, it is differed between IT and Telkom overall spending.
 - Subsidiaries spending are assumed as non-IT spending in this context, although parts of them have done business on telco's industry such as Telkomsel. However, there is no detail on the report regarding this spending so it is hard to explore kinds of the spending.
 - To analyze Telkom's business performance, it involves whether Telkom is as a consolidated enterprise or a parent one.

The Case Study (2): *IT Investment on IT Revenue*

- IT capex: broadband services, network infrastructure, legacy optimization, and capex support (IT Capex = 27 %, growth = 7%)
- IT revenue: data, internet, information technology services, interconnection services, network services, and fixed line services revenues (IT Rev = 59%, growth = 9%)

Telkom's IT Capital Expenditure (Adopted from TAR, 2005-2012)

	CAPEX per year (Rp billion)								
	2004	2005	2006	2007	2008	2009	2010	2011	2012
IT CAPEX	3,716	3,368	2,204	3,508	6,087	5,652	3,623	4,202	4,040
TOTAL CAPEX	8,820	13,553	17,239	15,780	22,245	19,161	12,651	14,603	17,272
% IT CAPEX	42%	25%	13%	22%	27%	29%	29%	29%	23%
% IT Cap Growth	-	-9%	-35%	59%	74%	-7%	-36%	16%	-4%

Telkom's IT Revenue (Adopted from TAR, 2005-2012).

	Operating Revenue per year (Rp billion)								
	2004	2005	2006	2007	2008	2009	2010	2011	2012
IT Revenue	22,296	26,044	29,445	38,812	36,919	37,883	37,534	40,353	43,767
Total Revenue	33,948	41,807	51,294	62,683	64,166	67,678	68,629	71,253	77,143
% IT Revenue	66%	62%	57%	62%	58%	56%	55%	57%	57%
% IT Rev Growth	-	17%	13%	32%	-5%	3%	-1%	8%	8%

The Case Study (3): *IT Investment on Business*

- Brynjolfsson and Hitt (1998) suggest that the value of IT should be determined by intangible measurements such as enhancements in quality, customer service, and new product development
- *Profitability*: It can be measured by return on investment (ROI), return on equity (ROE), and return on assets (ROA).
- *Effectiveness*: To measure it commonly used effectiveness measures are Tobin's Q
- *Total-amount value created*: Examples are economic value added (EVA) and market value added (MVA).

IT and Business Performance (Adopted from TAR, 2005-2012).

Business Performance	Year								
	2004	2005	2006	2007	2008	2009	2010	2011	2012
ROE (%)	36.5	34.3	39.2	38.1	31.5	29.6	26	23.1	24.9
ROA (%)	11.8	12.9	14.6	15.7	11.7	11.6	11.5	10.6	11.5
Tobin's Q	1.65	1.91	2.71	2.49	1.49	1.90	1.56	1.33	1.56
MVA (Rp billion)	83,60	105,40	186,36	188,84	113,47	166,72	143,72	122,07	156,03

Case Study Analysis of the Context of RBV (1)

- Resource-Based View (RBV) theory is a major theory to understand the relationship between IT and firm performance
- The fundamental reason of RBV is that firm performance is determined by the resources it owns. The firm with more valuable scarce resources is more likely to generate sustainable competitive advantages
- RBV “has emerged as a key perspective guiding inquiry into the determinants of organizational performance”

Case Study Analysis of the Context of RBV (2)

- Telkom's resources assumed as IT resources are identical to broadband services, network infrastructure, legacy optimization, and capex support.
- Previously in TAR 2011, 2010, etc., resources were grouped into optimizing legacy, new wave, infrastructure, and support, which are not too different from 2012.
 - IT infrastructures: strengthening fixed wire line and wireless, broadband, soft switch, data communication, other IT infrastructures, and power supply
 - Human IT: research and development activities, maintenance activities, learning and supply activities, buildings (for operations and equipment)
 - Intangible IT-enabled resources: improved customer service, enhanced product quality, increased market responsiveness, and better coordination of buyers and suppliers in evaluating IT systems

Case Study Analysis of the Context of RBV (3)

- IT capabilities:
 - IT infrastructure capability: the ability of the IT division to supply extensive firm-wide IT infrastructure services that serve the organization's business processes as the base foundation of other IT capabilities
 - Managerial IT skills: the ability of the IT division to formulate, develop, and make use of IT solutions to support and improve organizational business processes.
 - Collaboration between IT and business
- Telkom IT capability has been embodied in productivity of strengthening fixed wire line and wireless, broadband, soft switch, data communication, other IT infrastructures

Case Study Analysis of the Context of RBV (4)

- IT Core Competences: IT knowledge, IT operations, and IT objects
 - IT knowledge is the extent to which a firm possesses a body of technical knowledge about objects such as computer-based systems
 - IT operations are the extent to which a firm utilizes IT to manage market and customer information.
 - IT objects represents computer-based hardware, software, and support personnel
- Telkom case study has not yet indicated this competence explicitly, but some metrics in TAR have already shown them

Case Study Analysis of the Context of RBV (5)

- **Competitive advantage: to create more economic value than a marginal competitor.**
A firm has competitive advantage if it systematically achieves net profits.
- **IS infrastructure flexibility has a relationship to sustained competitive advantage by acting as an enabler of both mass customization and speed-to-market.**



Research Methodology

- To choose Telkom as a study object simply because Telkom is an IT-based industry and relatively easy to search out the data due to the published enterprise.
- Data collection, which refer to TAR published between 2005 and 2012.
- Selecting TAR's data reflecting the case study purpose: revenue, return on asset, return on equity, Tobin's q, and market value added, etc.
- Relating the case study results to the RBV model in order to examine Telkom's IT resources and its business performance.

Discussion (1)

IT Capex and IT Revenue Comparison.

	Year of IT Capex to IT Revenue Comparison								
	2004	2005	2006	2007	2008	2009	2010	2011	2012
% IT CAPEX	42%	25%	13%	22%	27%	29%	29%	29%	23%
% IT Revenue	66%	62%	57%	62%	58%	56%	55%	57%	57%

- The percentage of IT revenue always exceeds IT spending: IT resources have positive relationships to improve business performance
- In average the percentage of IT spending is 27 % “resulting in” 59 % of IT revenue
- The payoff of IT investments are not just the responsibility of the IT function.

Discussion (2)

IT and Business Performance (Adopted from TAR, 2005-2012).

Business Performance	Year								
	2004	2005	2006	2007	2008	2009	2010	2011	2012
ROE (%)	36.5	34.3	39.2	38.1	31.5	29.6	26	23.1	24.9
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MVA (Rp billion)	83,60	105,40	186,36	188,84	113,47	166,72	143,72	122,07	156,03

- ROE is between 23 % and 40 %: the profitability index of a firm. The higher values are generally favorable meaning that the firm is efficient in generating income on new investment

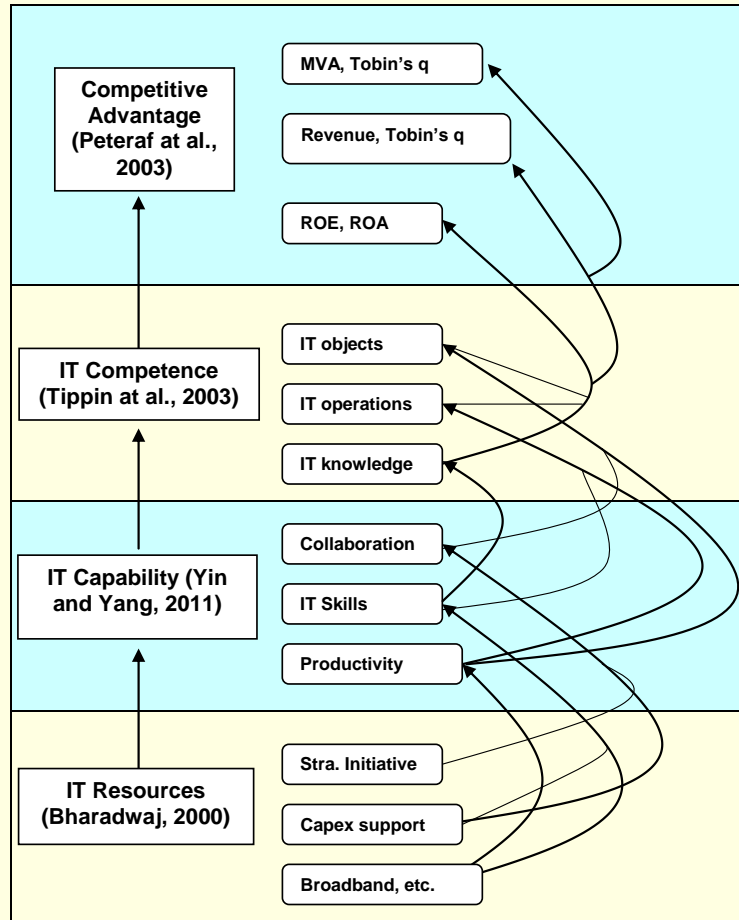
Discussion (3)

- ROA is between 10 % and 16 %: that the number of cents earned on each rupiah of assets in between 10 % and 16 %. That is, higher values of ROA show that business is more profitable.
- The Tobin's $Q > 1$. Tobin's Q ratio indicates that the stock is overvalued. Conversely, if $0 < Q < 1$, the cost to replace a firm's assets is greater than the value of its stock (undervalued).
- MVA has been positive for 9 years back as seen in the table. The high MVA indicates the company has created substantial prosperity for the shareholders

Discussion (4)

- From RBV point of view, Telkom resources represented by IT investment have influenced IT revenue and business at once.
- It means IT that inherently possesses capabilities and emerged competences, if well-managed, in turn, will create better business performance, reflected in sustainable competitive advantage.

Discussion (5)



Telkom IT Value Model

Conclusion

- IT value and business performance has had close correlations. The case study for Telkom has already validated the hypothesis.
- The relationship between IT value and business performance can be traced through IT capability and IT competence
- In order to analyze more deeply linking among components and parameters. If the linkings are well recognized, the study of causal relationship will be much easier.
- Need the next study



Thank you

