Strategic Orientation in E-commerce Firms

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Abstrak

Akademisi dan praktisi telah berusaha untuk memahami bagaimana perusahaan e-commerce bisa berhasil. Strategy pelaku pertama (first-mover) yang terkenal semasa dotcom ternyata tidak berhasil. Tujuan dari makalah ini ialah untuk mempelajari strategi bisnis yang diterapkan oleh perusahaan e-commerce, khususnya Internet ritel, dan variasinya sehubungan dengan ukuran bisnis, lama online bisnis, dan format bisnis. Kerangka strategic orientation of business enterprise dipakai untuk menemukan sifat-sifat stratejik umum yang diterapkan oleh Internet ritel. Kerangka sampel sebesar 1417 Internet ritel di Inggris dikembangkan dari berbagai sumber. Survei yang didistribusikan lewat pos menghasilkan 252 tanggapan dari Internet ritel berukuran kecil dan menengah. Analisis faktor menampilkan empat dimensi orientasi strategi: aggressiveness, analysis, defensiveness, dan futurity. Selanjutnya hasil riset menunjukkan bahwa ukuran bisnis berkaitan dengan orientasi strategi yang diterapkan oleh Internet ritel. Akhirnya, makalah ini telah berperan untuk memperluas pemahaman tentang bisnis strategi di perusahaan e-commerce dan temuannya dapat menjadi wacana bagi Internet ritel di Indonesia.

Kata kunci: e-commerce, Internet ritel, belanja online, strategi, orientasi stratejik

Abstract

Researchers and practitioners have attempted to understand how e-commerce firms could be successful. First-mover strategy, which was popular during dotcom era, was unsuccessful. The purpose of this paper is to investigate current business strategy implemented by e-commerce firms, specifically Internet retailers, and its variation in terms of business size, maturity, and business format. Strategic orientation of business enterprise framework was used to identify common strategic traits implemented by Internet retailers. A sample frame of 1417 UK Internet retailers were generated from multiple sources. A mail survey produced 252 usable responses of small and medium-sized businesses. Factor analysis suggested four dimensions of strategic orientation: aggressiveness, analysis, defensiveness, and futurity. Furthermore, the results indicated that business size was likely to be associated with those four dimensions of strategic orientation. Finally, the paper has contributed to enhance the understanding of business strategy in e-commerce firms and the findings could provide some insight for Internet retailers in Indonesia.

Keywords: e-commerce, Internet retail, online shopping, strategy, strategic orientation

1. Introduction

Researchers and practitioners have attempted to understand how Internet retailers could be successful. During dotcom era, academics and consultants suggested companies focused on being the first-mover in order to catch the competitive advantage [1]. However, the dotcom catastrophe indicated that this new strategy was unsuccessful, and the potential advantages had not yet come [2]. Some factors could be the possible causes of the failure: (1) high start-up cost, slow growth in sales, unprofitable sales, and high customer acquisition costs, (2)

inability to meet or exceed customer expectations in fulfilment, and (3) failure to retain existing customers and attract new ones [3].

As the idea of a new strategy did not work, the attention moved back to the classical and established strategy perspective, as suggested by Porter [4]. Researchers have argued about the relevance of identifying customer value propositions [2], determining market segmentation and maintaining interaction with customers [5] for e-commerce environment. Empirical evidence was reported by Bughin [6] that successful Internet retailers had a clear strategic choice, either niche market - focused on high-margin products and segments, or reach strategy - focused on converting a large number of visitors into customers. Conversely, Grewal et al. [7] contended that the nature of Internet technology could not effectively support Internet retailers to take a differentiation position.

As Internet retailers have arised since dotcom crash, further investigation was needed to understand business strategy adopted by those firms. This paper presents an attempt for such enquiry.

2. Research model and methods

In investigating business strategy, this research tried to explore whether strategy implemented by Internet retailers would be associated with business profiles, such as business format, business size, and maturity. First, business format refers to a business model in which Internet sales are conducted. This research adopts three business formats: (1) pure-play, (2) clicks-&-mortar, and (3) home shopping. For all of these formats, this research concentrates on the Internet retailing operation part only. Business format is included because it has been mostly used to classify Internet retailing (e.g. [8,9,10]). Second, business size is widely used in many studies, published business directories, and statistical reports from government, to classify firms. However, there is little knowledge on how to determine business size for Internet retailing. In this limitation, this study adopts a conventional indicator: the amount of annual sales. Similar to other retailing channels, annual sales is assumed relevant to the Internet retailing channel. Third, maturity is indicated by the period (age) of online sales operation. The rapid progress of Internet retailing business makes it is possible for an Internet retailer to pass through different stages of a life cycle within a relatively short period [11].

The difference of characteristics among Internet retailers may have impact on the differences of business strategy pursued. Prior studies suggested that classical principles of business strategy (e.g. positioning) are appropriate for Internet retailing [6,4]. For this reason, this research adopts a classical strategy framework named Strategic Orientation of Business Enterprise developed by Venkatraman [12]. In this framework, strategy is identified in terms of the relative emphasis made by a firm along several dimensions. As there is little information about strategy implemented by Internet retailers, the investigation of multiple traits could be appropriate to cover the variety of strategies implemented by Internet retailers. This study adopts and adapts the six dimensions of strategic orientation [12], with the stance adopted by an Internet retailer regarding each as follows:

1) *Aggressiveness*: Relates to resources allocation to improve its market position at a relatively faster rate than its competitors do.
2) *Analysis*: Relates to overall problem solving posture, in which the retailer searches deeper for the roots of problems and generates the best possible solution alternatives.

3) *Defensiveness*: Relates to the emphasis on cost reduction and efficiency seeking methods.

4) *Futurity*: Relates to temporal considerations in its key strategic decisions, in terms of emphasis on effectiveness (longer-term) versus efficiency (shorter-term) considerations.

5) *Proactiveness*: Relates to the opportunity to participate in emerging industries, and the continuous search of prospective market.

6) *Riskiness*: Relates to the various decisions of resource allocation.

Those six dimensions comprise 29 indicators, presented in Table 1.

Table 1: Strategic orientation

Dimension	Item
Aggressiveness	1. We often sacrifice profitability to gain market share
	2. We often cut prices to increase market share
	3. We often set prices below competition
	4. We often seek market share position at the expense of cash flow and profitability
Analysis	5. We emphasise effective coordination among different functional areas
	6. Our information systems provide support for decision making
	7. When confronted with a major decision, we usually try to develop through analysis
	8. We use several planning techniques
	9. We use the outputs of management information and control systems
	10. We commonly use human resource planning and performance appraisal of senior managers
Defensiveness	11. We occasionally conduct significant modifications to retail operation technology
	12. We often use cost control systems for monitoring performance
	13. We often use operation management techniques
	14. We often emphasise service quality through use of quality circles
Futurity	15. Our criteria for resource allocation generally reflect short-term considerations*
	16. We emphasise basic research to provide us with future competitive edge
	17. Forecasting key indicators of operations is common
	18. Formal tracking of significant general trends is common
	19. We often conduct 'what if' analyses of critical issues
Proactiveness	20. We are constantly seeking new opportunities related to present operations
	21. We are usually the first to introduce new services, products, or brands in the market
	22. We are constantly on the look out for businesses that can be acquired
	23. Competitors generally pre-empt us by expanding capacity ahead of us*
	24. Operations in later stages of life cycle are strategically eliminated
Riskiness	25. Our online business operations can be generally characterised as high-risk
	26. We seem to adopt a rather conservative view when making major decisions*
	27. New projects are approved on a 'stage-by-stage' basis rather than with 'blanket' approval*
	28. We have a tendency to support projects where expected returns are certain*
	29. Our online business operations have generally followed the 'tried and true' paths*

Note:
    Item 11: Retail operation technology replaces manufacturing technology
    Item 14: Service quality replaces product quality
    * reverse scored

Source: Adapted from Venkatraman [12]

This strategic orientation model has been used in several studies (e.g. [13,14]). It is important to note that Bergeron et al. [13] found that riskiness dimension was not reliable. Therefore, the result regarding this dimension should be interpreted cautiously. In addition, the proactiveness dimension should be seen carefully as well. This dimension could be appropriate, for example in the case of a store-based retailer planning to enter online business. As this study has already focused on the online business, the issue about the opportunity to participate in an emerging industry (e.g. Internet sales channel) might not be relevant. Although there is a doubt about proactiveness and riskiness, all six dimensions are adopted in this research to retain the completeness of this model.

This study has two specific objectives: (1) to investigate strategic orientation implemented by Internet retailers, and (2) to investigate the variation of strategic orientation in accordance with business profile. Those objectives are presented in a research model as shown in Fig. 1.
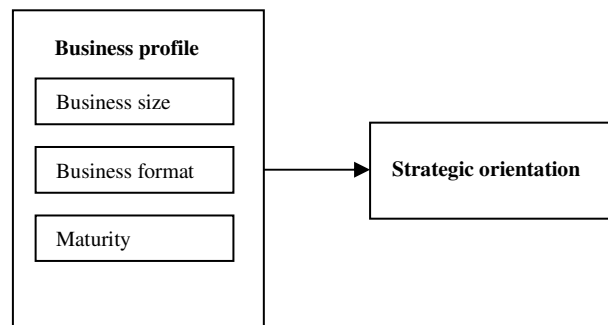

Figure 1: Research model

This study adopted a mail questionnaire method and the issue of validity was addressed by rigorously applying a pre-test among academics and retail practitioners, and a pilot test. The target population was UK Internet retailers selling tangible products, not services or digital products, in order to produce a homogeneous set of retailers. The sample was developed by using a combination of multiple sources: (1) established retail directory [15], (2) industrial body (TrustUK, Interactive Media Retail Group), and (3) selected online shopping directories. In total, 1417 Internet retailers were used as a planned sample. The survey, which was conducted in September-October 2005, produced 262 usable responses, 40 undelivered mail, and 8 non-participation responses. Among the respondents, 83% are owners, or managing directors, or CEOs, and the rest are manager/ senior managers. Data analysis was limited to cover only 252 responses representing small and medium-sized businesses, which were defined as having annual sales less than £10 million in order to provide a more homogeneous sample. The use of a time trend method to address non-response bias [16] suggested that persons who did not respond were not different from those who responded.

3. Findings

The descriptive profile of Internet retailers is presented in Table 2. For each profile, two categories are made after considering the findings.

Table 2: Descriptive profile of Internet retailers

Profile	Category	Frequency	Percentage
Business size	<250 thousand	126	50%
	£250 thousand - <10 million	126	50%
Business format	Without-store presence	153	61%
	With-store presence	99	39%
Maturity	Less mature (< 5 years)	139	56%
	More mature (> 5 years)	111	44%

Factor analysis for strategic orientation was conducted for 29 items. The early step is to examine the appropriateness of data through their inter-correlations. Table 3 presents the number of correlation coefficients which are greater than 0.3, for all 29 items. Proactiveness

and riskiness items have a small number (0, 1, 2) of correlations (greater than 0.3). These small numbers are supported by the low reliability scores of Cronbach's α, which are 0.343 for proactiveness and 0.386 for riskiness. Consequently, items in these two dimensions are excluded from further analysis. In addition, one item of futurity dimension (SO-Fut_1) has no correlation with other items. As there are enough correlations among items, factor analysis can be performed for these data.

Table 3: Number of correlations – Strategic orientation

Items	"r>0.3" all *)	Items	"r>0.3" all *)
Aggressiveness		Futurity	
SO-Agg_1	4	SO-Fut_1	0
SO-Agg_2	3	SO-Fut_2	6
SO-Agg_3	3	SO-Fut_3	10
SO-Agg_4	3	SO-Fut_4	7
Analysis		SO-Fut_5	6
SO-Ana_1	1	Proactiveness	
SO-Ana_2	5	SO-Pro_1	2
SO-Ana_3	6	SO-Pro_2	2
SO-Ana_4	9	SO-Pro_3	0
SO-Ana_5	7	SO-Pro_4	1
SO-Ana_6	8	SO-Pro_5	0
Defensiveness		Riskiness	
SO-Def_1	3	SO-Ris_1	1
SO-Def_2	11	SO-Ris_2	0
SO-Def_3	11	SO-Ris_3	1
SO-Def_4	5	SO-Ris_4	2
		SO-Ris_5	1

Note: *) correlation with itself is not counted

Furthermore, factor analysis is run again for 19 items, excluding items in proactiveness and riskiness dimensions. The Kaiser-Meyer-Olkin, a measure of sampling adequacy score is 0.848, which is greater than the recommended minimum value 0.5. The result of Bartlett's test of sphericity is highly significant (p<0.001), which means that the correlation matrix is not an identity matrix. Based on those three criteria, there should be confidence that these data are appropriate for factor analysis. Eigenvalues from factor analysis indicate that four components have values greater than 1, therefore four components should be retained according to Kaiser's criterion. The percentage of variance for four components is 59%, and the average communality is 0.586.

Table 4: Factor analysis of strategic orientation

Component Correlation Matrix

Component	1	2	3	4
1	1.000	-0.021	-0.282	0.373
2		1.000	-0.097	0.081
3			1.000	-0.435
4				1.000

Factor loadings

	Pattern Matrix			
	1	2	3	4
SO-Agg_1	0.105	**0.848**	-0.029	0.003
SO-Agg_2	-0.008	**0.878**	-0.072	0.018
SO-Agg_3	-0.060	**0.789**	0.115	0.028
SO-Agg_4	0.068	**0.847**	-0.002	-0.081
SO-Ana_1	**0.458**	0.038	-0.145	-0.017
SO-Ana_2	**0.708**	0.200	0.055	0.053
SO-Ana_3	**0.758**	-0.034	0.149	0.174
SO-Ana_4	**0.627**	-0.124	-0.139	0.130
SO-Ana_5	**0.808**	-0.046	-0.065	-0.008
SO-Ana_6	0.252	-0.036	-0.615	0.004
SO-Def_1	0.263	0.056	-0.119	0.285
SO-Def_2	0.235	-0.017	**-0.654**	0.095
SO-Def_3	0.331	-0.064	**-0.724**	-0.054
SO-Def_4	-0.178	-0.062	**-0.817**	0.097
SO-Fut_1	0.198	-0.208	0.461	-0.118
SO-Fut_2	-0.109	0.027	-0.037	**0.833**
SO-Fut_3	0.071	0.015	-0.033	**0.787**
SO-Fut_4	0.053	0.053	0.029	**0.799**
SO-Fut_5	0.064	-0.118	0.004	**0.597**

Reliability analysis (conducted for items with factor loadings in bold)

	1	2	3	4
Cronbach's α	0.760	0.871	0.768	0.765
No. Items	5	4	3	4

The components correlation matrix shows that there is some degree of correlation among them; therefore direct oblimin (oblique) is used. Furthermore, the pattern matrix of factor loadings indicates that most items set in the *expected* four dimensions: aggressiveness, analysis, defensiveness and futurity. The matrix shows that two items (SO-Ana_6 and SO-Fut_1) do not attach to the expected dimensions, and one item (SO-Def_1) has a low factor loading. The third part of Table 4 presents the result of reliability analysis, in which Cronbach's α scores for four components are relatively high.

Based on the result of factor analysis, a firm can have an arbitrary combination of the four dimensions of strategic orientation. Those four dimensions do not contradict each other. As

cited earlier [7], Internet retail could not be effective in taking a differentiation strategy, which means they are likely to adopt a low-cost strategy, based on Porter's generic strategy. Low-cost strategy is represented by defensive dimension in this study. Therefore, four dimensions obtained in this research have provided a more detailed figure of Internet retail strategy.

The next step is to classify firms based on the similarity of their four dimensions of strategic orientation. For this purpose, cluster analysis is applied. Two-step cluster analysis among other methods was selected because there is no prior prediction of the number of clusters. The result summarised in Table 5 and Figure 2 shows two distinct clusters. The first represents Internet retailers with higher scores for all four dimensions and the second with lower scores.

Table 5: Result of cluster analysis

Cluster	N	% of Combined	aggressiveness		analysis		defensiveness		futurity	
			Mean	SD	Mean	SD	Mean	SD	Mean	SD
1:SO high	144	59%	2,839	1,023	3,821	0,465	3,020	0,631	3,509	0,564
2:SO low	102	41%	2,422	1,032	3,110	0,681	1,712	0,597	2,361	0,694
Combined	246	100%	2,666	1,045	3,526	0,664	2,478	0,892	3,033	0,840
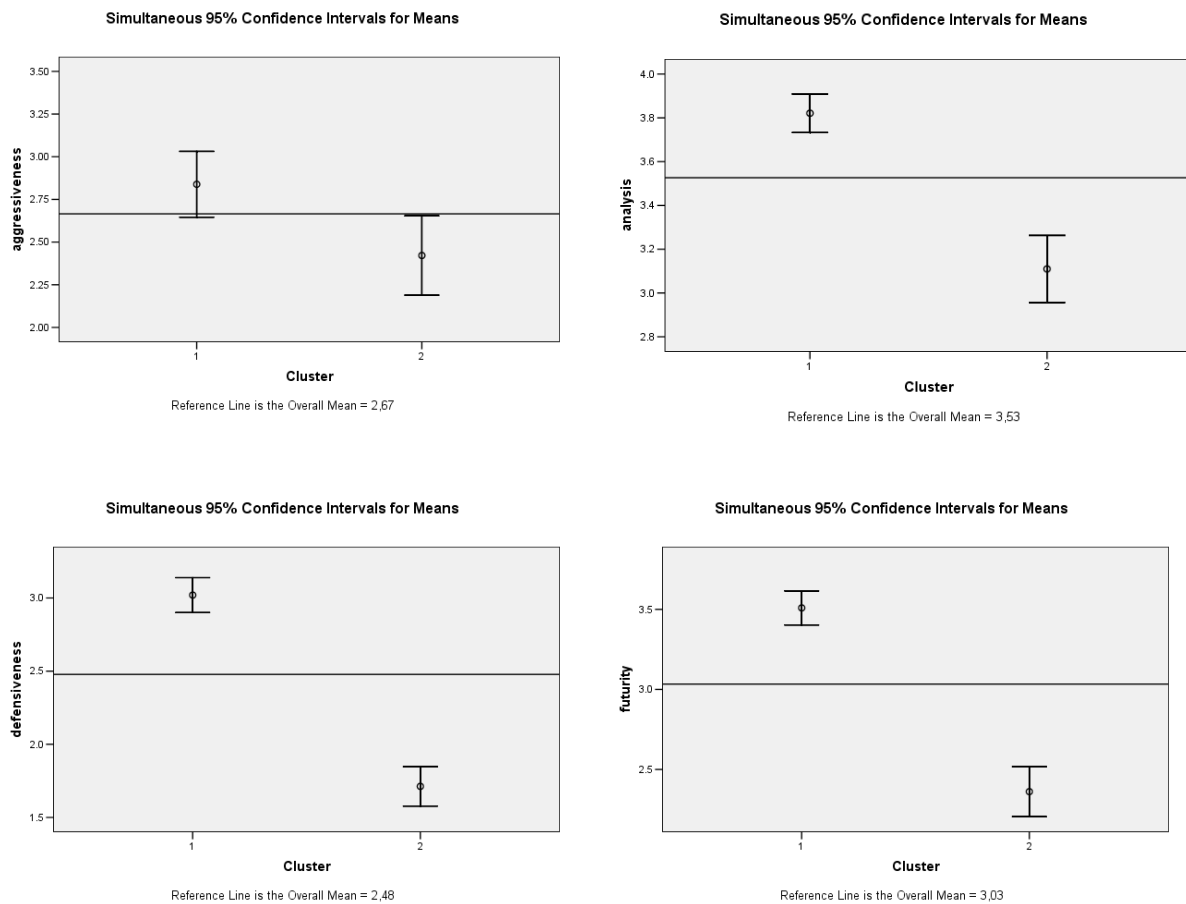
Figure 2: Error bar charts of strategic orientation

The findings show that based on their strategy, Internet retailers could be categorised into two groups. The first represents those are more aggressive in improving market share, more analytic in solving business problems, more aware in improving cost-efficiency, and more

attentive in anticipating the future of business. On the other hand, the second represents those with relatively lower emphasis in aggressiveness, analysis, defensiveness, and futurity. This difference raised a question whether it was associated with business profile. Analysis of relationships was conducted using cross-tabulation and chi-squared test, presented in Table 6.

Table 6: Analysis of relationship

Business size	£0 - < 250 th	£250 th - <10 ml	Total	χ^2 test
SO high	62 (51%)	82 (66%)	144 (59%)	$\chi^2(246,1)=5.938$
SO low	60 (49%)	42 (34%)	102 (41%)	**p<0.05**
	122 (100%)	124 (100%)	246 (100%)	
Maturity	less mature	more mature	Total	χ^2 test
SO high	81 (60%)	62 (57%)	143 (59%)	$\chi^2(244,1)=0.242$
SO low	54(40%)	47 (43%)	101 (41%)	p>0.05
	135 (100%)	109 (100%)	244 (100%)	
Business format	no store	with store	Total	χ^2 test
SO high	89 (59%)	55 (57%)	144 (59%)	$\chi 2(246,1)=0.101$
SO low	61(41%)	41 (43%)	102 (41%)	p>0.05
	150 (100%)	96 (100%)	246 (100%)	

The analysis shows that strategic orientation is associated with business size, but not maturity and business format. The findings indicate that those with higher emphasis on the strategic orientation are relatively bigger size (in the context of small-medium firms). Relatively bigger size (in term of annual sales) could be associated with more complex operation, resources, and capabilities. These firms could possibly be more successful as they are, for example acquire bigger market share, and more efficient in their operations. For quite small Internet retailers, they probably don't have enough resources and capabilities to adopt stronger strategic orientation. Furthermore, the findings show that emphasis on strategic orientation is not related to the age of online business as well as the format of Internet sales channel within a firm.

4. Conclusion

This study has enhanced the understanding of business strategy in Internet retail and its variation based on the difference in business profiles. It has enriched the literature on Internet retail strategy by describing strategy as four common traits. Though causal relationship can not be deducted from the statistical relationship, this study would suggest Internet retailers to have more emphasis in their strategic orientation.

While this study was conducted in the UK, the lessons obtained could be still relevant for Internet retailers in Indonesia. Firstly, the market structure of Internet retail which consists of many small-sized businesses is likely to be general condition. Secondly, UK Internet retailers are dominated by relatively young firms, which are likely to be similar condition in Indonesia. Those four dimensions of strategic orientation could be used as a guideline in investigating Indonesian Internet retailers.

In assessing the findings of this study, it is important to interpret the results in the light of some limitations. The cross-sectional nature of data limits the ability to make stronger conclusion about the causality between dependent and independent variables. For example, it

can not be concluded statistically whether strong emphasis in strategic orientation will lead to bigger size or the other way round. Further research might investigate the issue through in-depth case study.

References

[1] Tse, T. and Soufani, K. (2003) "Business strategies for small firms in the new economy", *Journal of Small Business and Enterprise Development*, Vol. 10, No. 3, pp. 306-320.

[2] Coltman, T., Devinney, T. M., Latukefu, A. S. and Midgley, D. F. (2002) "Keeping e-business in perspective", *Communication of the ACM*, Vol. 45, No. 8, pp. 69-73.

[3] Tarn, J. M., Razi, M. A., Wen, H. J. and Perez, A. A. (2003) "E-fulfillment: the strategy and operational requirements", *Logistics Information Management*, Vol. 16, No. 5, pp. 350-362.

[4] Porter, M. E. (2001) "Strategy and the Internet", *Harvard Business Review*, Vol. 79, No. 3, pp. 63-78.

[5] La, K. V. and Kandampully, J. (2002) "Electronic retailing and distribution of services: Cyber intermediaries that serve customers and service providers", *Managing Service Quality*, Vol. 12, No. 2, pp. 100-116.

[6] Bughin, J. (2001) "Finding the path(s) towards profitable e-commerce", White paper, *Free University of Brussels*.

[7] Grewal, D., Iyer, G. R. and Levy, M. (2004) "Internet retailing: enablers, limiters and market consequences", *Journal of Business Research*, Vol. 57, No. 24, pp. 703-713.

[8] Jones, P., Clarke-Hill, C. and Hillier, D. (2002) (R)etailing in the UK, Marketing Intelligence & Planning, 20 (4), 229-233.

[9] Liang, T. P., Lin, C. Y. and Chen, D. N. (2004) "Effects of electronic commerce models and industrial characteristics on firm performance", *Industrial Management & Data Systems*, Vol. 104, No. 7, pp. 538–545.

[10] Oinas, P. (2002) "Towards understanding network relationships in online retailing", *The International Review of Retail Distribution and Consumer Research*, Vol. 12, No. 3, pp. 319-335.

[11] Rayport, J. F. and Jaworski, B. J. (2003) *Introduction to e-commerce*, McGraw-Hill, Boston.

[12] Venkatraman, N. (1989) "Strategic orientation of business enterprises: The construct, dimensionality, and measurement", *Management Science*, Vol. 35, No. 8, pp. 942-962.

[13] Bergeron, F., Raymond, L. and Rivard, S. (2001) "Fit in strategic information technology management research: An empirical comparison of perspectives", *Omega*, Vol. 29, No. 2, pp. 125-142.

[14] Morgan, R. E. and Strong, C. A. (2003) "Business performance and dimensions of strategic orientation", *Journal of Business Research*, Vol. 56, No. 3, pp. 163– 176.

[15] Hemming-Information-Services (2005) *Retail directory of the UK-2005*, Hemming Information Services, London.

[16] Armstrong, J. S. and Overton, T. S. (1977) "Estimating nonresponse bias in mail surveys", *Journal of Marketing Research*, Vol. 14, No. 3, pp. 396-402.

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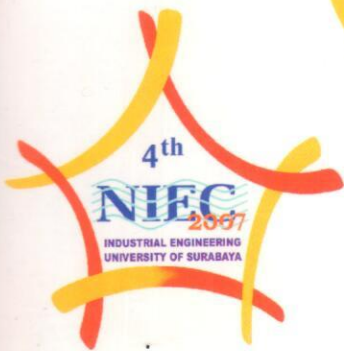
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TUTWURI HANDAYANI

KATA PENGANTAR

Selamat datang di *4th National Industrial Engineering Conference* yang bertemakan *Industrial Engineering in a Competitive and Borderless World: In Search for Quality Breakthroughs and Continuous Improvement*.

Menghadapi era perdagangan bebas dan globalisasi, paradigma integrasi sistem dan integrasi bisnis tidaklah cukup untuk menghasilkan keunggulan kompetitif bagi suatu industri. Paradigma industri diharapkan bergeser menuju penerapan *lean sigma strategies* dalam membangun hubungan kerja sama antar industri yang efektif, untuk memenangkan persaingan pasar global. Dalam rangka menyebarluaskan informasi yang berkenaan dengan paradigma baru ini, Jurusan Teknik Industri, Universitas Surabaya pada tahun 2007 ini meyelenggarakan *4th National Industrial Engineering Conference*. Seminar nasional ini merupakan program berkala yang turut didukung oleh berbagai pihak yang meliputi pihak pemerintah dan swasta, institusi pendidikan maupun non pendidikan. Sebagai kelanjutan dari *3rd National Industrial Engineering Conference*, seminar ini memilih *In Search for Quality Breakthroughs and Continuous Improvement* sebagai tema utama.

Seminar ini menyertakan 67 makalah terpilih yang berasal dari partisipasi para pemakalah. Berdasarkan latar belakangnya para pemakalah tersebut berasal dari berbagai institusi pendidikan maupun non-pendidikan. Kami sangat berterimakasih atas besarnya partisipasi para peneliti dari industri dan institusi pendidikan ini. Topik makalah yang disajikan meliputi *Lean Sigma Strategy, Quality Engineering and Management, Product/Process Design, Performance Control, Process-Oriented Approach, New Organizations and Socio-Economical Impacts,* dan *Control of Product Flows and Resources*.

Besar harapan kami, melalui Seminar ini, para peserta mendapatkan peluang menambah wawasan, membangun kerjasama antar praktisi dan akademisi serta menginspirasi timbulnya ide-ide baru bagi kemajuan bersama.

Sampai berjumpa di *5th National Industrial Engineering Conference* !

Surabaya, 29 November 2007

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