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Adapting Covid-19 Pandemic by Motorcycle Dealership Digitization

Andrew Turmawan[1], Togar Alam Napitupulu[2]
[1,2] *Information System Management Department, Bina Nusantara University, Indonesia*
Andrew.turmawan@binus.ac.id, TNapitupulu@binus.edu

Abstract

Pandemic Covid-19 had brought major challenges regarding motorcycle market downturn and have-to-pay operational cost in 2020. Therefore, digitizing motorcycle dealership process is one of the strategies to improve the competitive advantage in motorcycle business. Such high investment regarding implementing information system were done by the biggest automotive players in Indonesia to achieve better cost efficiency. To evaluate the outcome of investment effectiveness, Information Economics combine with a time-motion study-workload analysis was used to analyze not only tangible benefit, but also quasi tangible and intangible benefits in hundreds of motorcycle network, involving leader, team, and front-line people in multiregional of Indonesia. Information Economics combine with workload analysis using Full Time Equivalent is used to measure the efficiency impact in organization resource after implementing the information system. The case study is proving that the investment valuation of an implemented information system should not see ROI (Return on Investment) as the only benefit, but organization workload, strategic and competitive advantage through the market competitiveness is very beneficial for business. Therefore, both financial and non-financial impact should be evaluated to have better perspective of investment.

Keywords
Automotive; cost efficiency; information system; investment evaluation; and information economics

I. Introduction

The rapid growth of internet technology has significantly affected how the people live nowadays. It penetrated to more than 175 million people in Indonesia in 2020 (Kemp, 2020). Along with the hikes of people's income to IDR 5.4 million per month (Economics, 2020) had driven automotive dealers to consider how to reshape their internal process to achieve better productivity, more efficient process, and more engagement to customers. For years, they recorded the transaction manually and consolidated the data to generate a set of reports for formulating strategy initiatives to improve their performance both in sales and after sales performance. During 2015 - 2018, the sales only grew slightly, considering the increase of regional minimum wage cost every year had an impact on higher labour cost that should have been managed to keep the financial health. Therefore, to cope with the challenges, biggest motorcycle manufacturing company in Indonesia formulated an improved dealer and workstation's business process and implemented the information system in late of 2018 to improve the cost structure, develop faster initiatives based on market condition and strengthen the competitive advantages. Development is a systematic and continuous effort made to realize something that is aspired. Development is a change towards improvement. Changes towards improvement require the mobilization of all human resources and reason to realize what is aspired. In addition, development is also

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very dependent on the availability of natural resource wealth. The availability of natural resources is one of the keys to economic growth in an area. (Shah, M. et al. 2020)

Entering March 2020, the world had been shocked due to Covid-19 infection spreading out, impacting 213 countries and territories. Significant numbers of death, business closures had shaken all industry. In the same month, the World Health Organization announced Covid-19 as a pandemic. Overcoming those challenges, Indonesia government issued strict policy to limit and reduced the spread of Covid-19 virus by restricting business capacity to only 25% team, forcing social distancing and micro lock down. Facing business restriction policy, automotive dealers and workstations must adapt their process by implementing the government's policy to apply health protocol while continuing to accelerate the digitized process to serve customers better. This digitized process was one of strategic move that enables dealers and workstations to face those restriction policy (Lu et al., 2012).

Implementing the information system to more than 5.000 dealers and workstations is one of the keys to improve the business productivity, less circulated-document, better data acquisition and ease control activities. Regarding many challenges that happen in the system implementation such as bad internet connection in rural areas and lack of people's capability, the project team has finished the implementation in February 2021 in all Indonesia regions. To measure the impact of the information system implementation to automotive dealers and workstations players, and to define which features that bring the most benefit to dealer or workstation's users, researcher used Information Economics approach to measure tangible, quasi tangible, and intangible benefit for understanding the investment benefit.

II. Review of Literature

2.1 Automotive Information System

Information system for motorcycle dealers is a platform used by dealers to manage their automotive business efficiently in delivering best service quality to customers based on committed Standard Operating Procedure for sales and after sales journey. The purposes of implementing the information system are to create process automation, better quality of data acquisition, and faster data analysis for better decision making. The information system consists of order management for unit motorcycles and parts, inventory management, sales management, and quality management for dealers. While for workstation, the information system consists of service management, parts order and sales management, warehouse, quality management. Information Economics approach is used to measure the benefit of implementing the information system in each motorcycle dealer and workstation.

2.2 Information Economics

Definition of Information Economics (IE) is a methodology to measure economic value of Information Communication and Technology. Parker founded the methodology in 1985. The methodology was one of the Feasibility Assessment methods that developed from Cost-Benefit Analysis (CBA) and added intangible factor in its measurement (Parker, Marilyn M.; Benson, Robert J.; Trainor, 1988). The purposes of Information Economics are to measure the effectiveness of Information System investment in organization and to have a clear description in allocating the next resources for the next development (Zulkifli, 2016). The Information Economics framework consists of tangible, quasi-intangible and intangible benefit measurement (Novianti & Fajar, 2019) as shown in

figure 1.

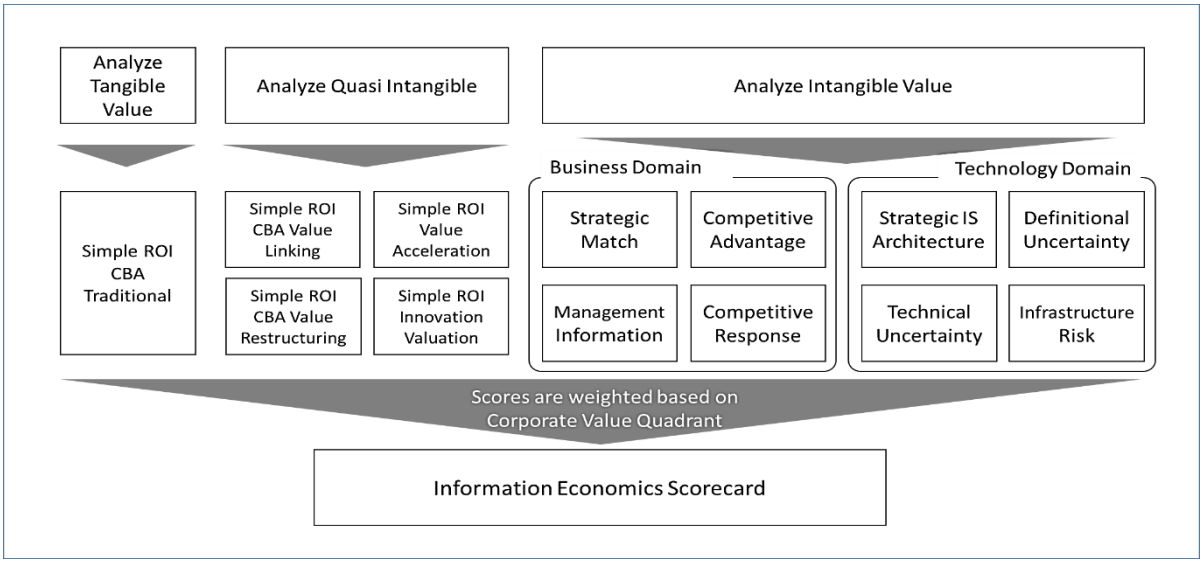

Figure 1. *Information Economic Framework*

The approach of investment analysis consists of financial benefit that comes from measuring tangible benefit and quasi-intangible benefit. In providing rationale for developing this information system, Return of Investment (ROI) analysis is used to evaluate financial return divided by investment cost. Typical ROI components for financial benefit consist of cost saving, cost avoidance, revenue enhancement while investment cost consists of IS/IT development cost, implementation cost such as training, software and license, and infrastructure cost (Andru & Botchkarev, 2011).

The analysis technique to quantify cost and benefit to include value is quasi-intangible analysis which are value linking and value acceleration, which represent benefits that can be quantified using traditional cost-benefit analysis. While value restructuring and innovation valuation address job restructuring and innovation creation from the implemented information system (Han et al., 2012).

For non-financial, intangible benefit will be measured based on business domain, which consists of Strategic Match, Competitive Advantage, Management Information and Competitive Response, while technology domain consists of Strategic IS Architecture, Technical and Definitional Uncertainty, and Infrastructure Risk. In determining Corporate Value, it is important to consider the degree of a Line of Business based on the performance, and how strong the computer support is. Therefore, Benson categorizes company performance based on four quadrants (Parker, Marilyn M.; Benson, Robert J.; Trainor, 1988) shown in figure 2.

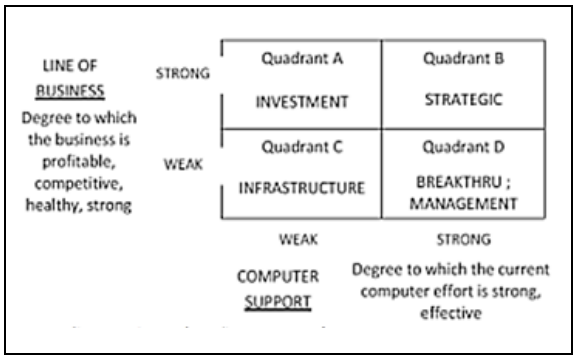

Figure 1. *Corporate Value Quadrant*

Finally, an Information Scorecard is formulated to determine the return of information system investment.

2.3 Workload Analysis using Full Time Equivalent

The information system brings productivity benefit that may be viewed as value linking and acceleration. To measure the operation saving, shorter time cycle for completion and better performance, author used workload analysis approach using Full Time Equivalent (FTE). Definition of workload is a few work targets that must be achieved in a certain time unit. The purpose of workload analysis is for calculating employee formation that consist of three stages which determine main output of a function/sub function and identify the series of work activities required to produce that output, breaking down a series of activities into a more specific task force, and calculating the total amount of time required to complete. This FTE approach is converting the amount of time required to the effective work hour of full-time employees (Phapros, 2018).

III. Research Method

3.1 Research Methodology based on Information Economic Framework

To evaluate the effectiveness of information system implementation in Dealer and Workstation, the Information Economics approach is applied as a valuation method for measuring business impact in selling and servicing motorcycles. The impact of feature's measurement will be conducted for salesmen and sales administrators who access the Sales Management module: goods (motorcycle) received, inventory management, prospecting activity, dealing, billing to delivery of motorcycle to customers, equipped with registration document handling process (vehicle registration and ownership certificate). In the workstation, the impact measurement will be conducted for service advisor and front desk role that access Service Management module: booking service, customer acceptance and work order in workstation, goods (parts) received, parts inventory management, parts sales, and billing process both service work order and parts.

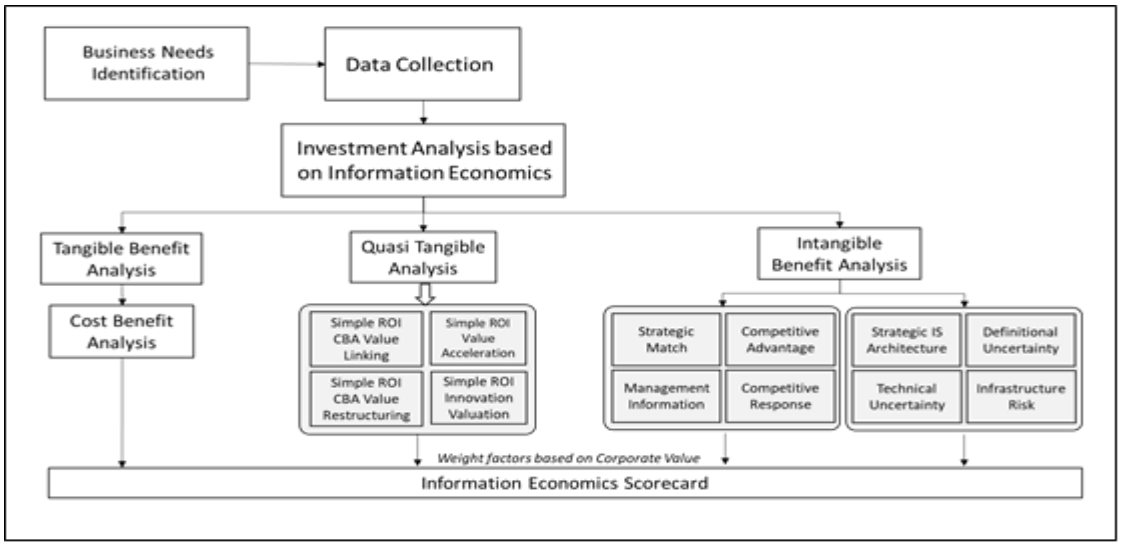

Figure 3. *Research Methodology*

Benefits that are identified from data collection which are direct observation, interview with dealer, workstation employees, and literature studies, are carried out to formulate based on the Information Economics framework. Revenue and cost impact will be measured by identifying any financial return that brings tangible benefit both to the dealer and workstation. The feasibility of IT investment can be known by measuring the percentage of ROI generated on the economic impact sheet (Parker, Marilyn M.; Benson, Robert J.; Trainor, 1988).

Continue with identifying the gap before and after implementation, the front-line people's daily workloads are measured to determine the impact of quasi-intangible benefit, consisting of value linking, value acceleration, organization restructuring, and value innovation that can be built regarding the implemented information system. Last, the effectiveness of dealer and workstation's improvement is measured by conducting discussion and fulfilling the questionnaires regarding intangible benefit both from business domain, such as strategic match, competitive advantage, management information, competitive response, and organizational risk, and from technology domain, such as strategic IS architecture, definition, and technical uncertainty, IS infrastructure. To determine how good the investment, Information Economics scorecard is formulated based on institution grading and corporate value quadrant to determine weight factors in the framework as shown in figure 3 (Sibarani, 2014).

3.2 Research Data Gathering

In collecting the data, various techniques are used, such as field research, literature study, and deep interview with dealer and workstation owners, motorcycle salesman, counter and admin, as well with service advisor, service front desk / admin and prepare a set of questionnaires to fulfil (Sekaran, Uma; Bougie, 2016). In the early stages, pain points are identified from employees in dealers and workstations, then continue to evaluate whether the information system can answer those needs by measuring the gap of administration documents, such as paper, printer ink, variety of documents, delivery charges etc. Time motion study is also done to determine the length time needed for every digitized activity in dealer and workstation measuring the workload of every employee related based on Full Time Equivalent approach.

IV. Result and Discussion

In the early stage, focus group discussion had been conducted from June to August 2021. The survey respondents were involving 36 dealers and workstations employee in 9 regional working areas as follows:

a) Owners of authorized dealer and workstation,
b) Branch heads of dealer and workstation,
c) Dealer's front-line people consist of Salesman, Sales Counter and Sales Administrator,
d) Workstation's front-line people consist of Service Advisor and Front Desk Officer

To address benefit identification activities after focus group discussion, workload analysis was carried out in 2 dealers in selected area, deep interview and measure time motion study for each selling and service activities that consist of Salesman, Sales Counter and Sales Administrator roles in dealers, Service Advisor and Front Desk Officer roles in workstation, to obtain the difference in productivity that occurred before and after the system implementation.

4.1 Tangible Benefit Measurement

The information system had been implemented from January 2019 until February 2021. Based on the information above, to identify the total investment cost, the number of information system investment could be measured by calculating development cost for sales and after sales features, training, and implementation cost to all dealers and workstations, resulting IDR 16.7 billion. Operating cost in keeping business operation running smooth, such as license, helpdesk support, hosting, are also measured, resulting IDR 9.2 billion per year. Therefore, the total amount of the investment for 5-years period is IDR 72.3 billion.

While the impact of direct benefit after implementing the information system is also measured. Many operational costs were reduced significantly as follows in table 1 below. Calculation of the operational efficiency has produced numbers of cost reduction, such as:

a. Office supplies

Table 1. Operational Efficiency in Dealers and Workstation (in IDR million)

Description	Function	Monthly Quantity	Price per Item	# of Network	Monthly Efficiency	Yearly Efficiency
Paper Efficiency	Sales	5,48	Rp 36.750	585	Rp 117,8	Rp 1.414
	After Sales	4,2	Rp 36.750	1.260	Rp 195,9	Rp 2.350
Printer Ink Saving	Sales	7,83	Rp 50.000	585	Rp 229,0	Rp 2.748
	After Sales	6,0	Rp 50.000	1.260	Rp 380,7	Rp 4.568
Overtime Saving	Sales	1,0	Rp 150.000	585	Rp 87,8	Rp 1.053
Cost Efficiency						**Rp 12.134**

Dealer's paper expense was reduced due to 5.48 ream paper more efficient, resulting IDR 201.400 /month/dealer because manual papers such as guest book, sales and stock report, credit submission, customer data, delivery form, were no longer been used

a) Workstation's paper expense was also reduced due to 4.2 ream paper more efficient, resulting IDR 155.450 /month/workstation because manual papers such as service consultation, work order form, parts order, daily service report were no longer used

b) Both dealer and workstation's printer cartridge were also saved due to print number reduction, resulting cost saving for IDR 693.600 /month

b. Overtime cost reduction

Sales and service admin related usually have to entry unfinished and pending document during closing time every end of month. These activities were reduced significantly due to the implementation of information system. Therefore, dealers and workstations overtime cost significantly reduced for IDR 150.000 per month due to faster entry time and less manual calculation for generating monthly performance report.

From the understanding of system investment and implementation, operating cost and also the efficiency impacted from the motorcycle information system, simple ROI and payback period can be calculated by considering 3.5% discounted rate (Central Bank, 2021).

The Economic Impact Worksheet has shown that the efficiency rate is resulting 7% ROI, and 9.5 years of payback. It showed that economic return is less beneficial compare to average rate of return of other financial instrument, such as Indonesia government bonds, or stock market with average yield 1984 - 2020 is 16.5% (Trading Economics, 2022).

4.2 Quasi Tangible Benefit Measurement

a. Value Acceleration and Value Linking

In identifying the quasi-tangible benefit, especially value acceleration, process observation is done both in dealers and workstations. Continue to analyze the benefit more precise, a time-motion study to measure and analyze each employee's workload impact in several dealers and workstations. The result of measuring activities is shown in table 2 below.

Table 2. Workload Analysis for Salesman Role in Dealer

Activities	Frequency / customer	Process Time Before (min)	Process Time After (min)	FTE Before	FTE After
Sales - Manage Prospecting Activity				1,92	0,88
Call / visit to follow up prospect assigne	5 / day	10	3	0,80	0,24
Walk-in Customer	5 / day	5	3	0,40	0,24
Product Explanation	5 / day	5	3	0,40	0,24
Create/update prospect database	5 / day	4	2	0,32	0,16
Sales - Manage Dealing Process				3,06	2,46
Check stock availability	5 / day	5	1	0,40	0,08
Identify indent preference	3 / week	5	1	0,05	0,01
Explain standard credit scheme	5 / day	14	14	1,20	1,20
Get Branch Manager approval	5 / day	10	10	0,80	0,80
Create SPK and record customer satisfa	5 / day	2	2	0,16	0,16
Create indent form	3 / week	5	5	0,05	0,05
Collect CDB	5 / day	5	2	0,40	0,16
Sales - Handle Leasing Requirement				0,13	0,13
Collect required customer's document	2 / day	1	1	0,03	0,03
Update & submit leasing application	2 / day	3	3	0,10	0,10
Sales - Manage Delivery Process				0,79	0,79
Contact customer for unit delivery	5 / day	9	9	0,79	0,79
TOTAL				**5,90**	**4,26**

From the table above, the time needed by salesman to do prospecting activity was reduced significantly, from 10 min to 3 minutes, because salesman did not have to recollect and re-entry the customer data to system, he could do it by themselves in their available time. It happened also for checking the stock availability, faster stock monitoring could be provided by accessing the information system, resulting to 23% workload reduction. Not only for salesman, time-motion approach also applied for sales counter, sales admin role in

dealers, resulting in 20% workload reduction due to faster initial data acquisition that linked to sales admin activities in finishing sales order and billing activities.

Continue with assessing workload for service advisor, the time-motion study measured the speed improvement in creating work order activities, parts stock availability, and automated daily service work order report as shown in table 3. Service advisor can do faster work order activity in validating customer, vehicle and service data history, and parts stock availability check so that it accelerated the process in serving the customers, resulting 26.8% workload reduction. Not only for service advisor, time-motion approach also applied for front desk officer role in workstation, resulting 11% workload reduction due to faster and easier process in creating service and parts billing and automated daily service report availability.

Table 3. Workload Analysis for Service Advisor Role in Workstation

Activities	Frequency / customer	Process Time Before (min)	Process Time After (min)	FTE Before	FTE After
Service - Manage Work Order				0,98	0,63
Call customer based on queue priority	20 / day	2	2	0,09	0,09
Validate/update customer & service da	20 / day	8	3	0,44	0,14
Record work diagnosis	20 / day	1	1	0,05	0,05
Check parts stock availability	15 / day	3	2	0,10	0,06
Notify parts counter for required parts	15 / week	1	1	0,07	0,07
Identify customer decision to service	19 / day	2	2	0,09	0,09
Generate work order	19 / day	2	2	0,09	0,09
Receive customer's approval	19 / day	1	1	0,04	0,04
Service - Manage Billing Process				0,17	0,22
Create Work Order	19 / day	1	2	0,04	0,09
Inform completed service and payment	19 / day	3	3	0,13	0,13
TOTAL				**1,15**	**0,86**

Table 2. Efficiency from Workload Analysis (in IDR million)

Responsibility	%-Efficiency	Monthly Efficiency	Yearly Efficiency	# of Network	%-Utilization	Total
Salesman	23,40%	0,88	10,5	585	98%	6.020,30
Sales Counter	23,40%	0,87	10,5	585	98%	6.017,20
Sales Admin	20,50%	0,77	9,21	585	98%	5.281,70
Service Advisor	26,80%	1	12,05	1.260	93%	14.115,70
Front Desk Officer	22,00%	0,82	9,89	1.260	93%	11.590,80
Sum of Efficiency						**43.025,70**

Based on those description, compilation of each role workload reduction is shown in table 4, highlighting comparison as value acceleration and value linking impact of implementing the information system. While, the financial return was also recalculated from improved workload based on time motion study that demonstrated the information system made better productivity and reduce human error (Santoso et al., 2014).

Many dealers' owner and branch head satisfied because of the acceleration and efficiency impact in implementing the system. Financial return also improved from efficiency-gain from lower workload produced by the information system as shown in table 4, resulting cost efficiency that reached up to IDR 43.0 million, gained by

implementing the information system in dealers and workstations. Recalculating the financial return from cost reduction and work efficiency, the ROI rate was improved to 176.2% resulting faster payback period from 9.5 years to only 1.2 year as shown in table 5.

b. Value Restructuring and Innovation Valuation

Followed by deep interview with Dealer's owners and branch heads, they said that motorcycle market suffered 40% decrease as of year-on-year August 2021 both motorcycle sales and incoming service numbers during the early Covid-19 pandemic. Facing the challenges, they had to restructure their organization to keep the financial condition saved. Supported by the information system implementation, positive feedbacks were mentioned in the discussion, for instance, the implemented information system made dealer and workstation process more efficient so the sales and workstation activities can be done with current resources; better customer data quality that beneficial to after sales opportunity; easy to monitor and control due to add-on reporting tools, and less effort in creating daily report due to daily reporting system. These improvements created more efficient and faster process in serving the customers both in selling and servicing transaction that need lower workload of employee. The impact of lower workload had made owners and branch head could not only save their budget for recruitment but also keep their business run with lower number of employees with better control and faster transaction.

Table 5. Economic Impact Worksheet (in IDR million)

		Years									
Fiscal Year End	**Year 0**	**Year 1**	**Year 2**	**Year 3**	**Year 4**	**Year 5**	**Year 6**	**Year 7**	**Year 8**	**Year 9**	**Year 10**
Cash Outflow											
- Development	-16.710										
- Deployment	-9.345										
- Operations		-9.244	-9.244	-9.244	-9.244	-9.244	-9.244	-9.244	-9.244	-9.244	-9.244
Total Cash Outlow	-26.055	-9.244	-9.244	-9.244	-9.244	-9.244	-9.244	-9.244	-9.244	-9.244	-9.244
Cost Reduction (TB)		12.134	12.134	12.134	12.134	12.134	12.134	12.134	12.134	12.134	12.134
Cost Reduction (VA VL)		45.916	45.916	45.916	45.916	45.916	45.916	45.916	45.916	45.916	45.916
Cummulative	-26.055	48.805	48.805	48.805	48.805	48.805	48.805	48.805	48.805	48.805	48.805
Discount rate		3,5%	3,5%	3,5%	3,5%	3,5%	3,5%	3,5%	3,5%	3,5%	3,5%
Disc Cash Flow	-26.055	21.042	68.140	115.237	162.334	209.431	256.529	303.626	350.723	397.820	444.918
Break Even (Payback Period)		1,24	year								

Further discussion about innovation opportunity regarding the implementation of information system, many dealer’s owners asked for a more digitized process, such as reporting, faster information about program and promotion activities and less paper reduction due to report and program submission tools availability. Workstation head also asked some improvements to reach better quality of servicing the customers such as queuing system, barcode tools availability and the needs to easily estimate the parts needed for selling motorcycle parts and accessories.

4.3 Intangible Benefit Measurement

The impact of implementing the system was measured through filling out the questionnaire for both Business Domain and Technology Domain in the intangible benefit session. Questionnaire of Business Domain consists of Strategic Match, Competitive Advantage, Management Information, Competitive Response and Organizational Risk,

while Technology Domain questionnaire consists of Strategic IS Architecture, Definition Uncertainty, IS Infrastructure and Technical Uncertainty.

Owners were representing their team to fill the questionnaire (Chioncel et al., 2003) since set of question in Business Domain and Technology Domain section need to explain more to front liner. The owners agreed to choose score results based on evidence that was shown by members, for instance, the dealer's owners agreed to submit score four (4) for business domain - strategic match because implementing the information system was one of the strategies to enable business efficiency, another strategy related to compliance to micro lockdown policy and health protocol was a must.

a. Business Domain

Since the outbreak of Covid-19, customers buying power were declined sharply, people can't do their daily activities, not free to shop, service etc. Number of layoffs were happened in every city in the region (Sibarani, 2020). Facing the limitation, motorcycle dealers must optimize every single of opportunities that they have to keep the business survive. Therefore, prospecting activities to deliver sales and service and its performance monitoring are two top priority strategy in achieving sales target. To support those activities, the information system provided follow up progress activities and its performance report, helping team leader, branch head and owner to implement quick-match strategy to optimize sales performance from lower Covid-19 risk area and extent the solution in providing service visit for the area. These initiatives also become a competitive advantage that differed the dealer and workstation from competitors that didn't have those features. Dealer and workstation's owners were also provided by daily performance dashboard in ensuring the strategy implementation so they could response immediately once the area limitation policy was changed and control the team to adapt with the condition. To support the system implementation, project team had provided training, work procedures, business support and help desk team in ensuring each of participant understand and implement the digitization. The quality of implementation was also evaluated by measuring active user in each feature and reported to top management to address the policy and work culture (Zaitun & Mashkuri, 2000), resulting 98%-active user in August 2021. Regarding description above, questionnaire was filled by 36 dealer and workstation's owners and branch heads. The submitted Business Domain score from all participants were shown in table 6.

b. Technology Domain

Discussion started from initial strategic IS architecture, talk through the digitization scope from each party. Owners were agreed to expand the capability both organization and system to ensure the matched capability in overcoming the pandemic situation although some payoffs should be made regarding the system infrastructure and security readiness. The digitization initiative was delivered through business strategy and functional specification documentation, therefore investment needed can be calculated in providing sufficient number of resources for short- and long-term development, for instance they chose score one (1) because Main Dealer already facilitated dealer and workstation with agreed functional design and presented training material, therefore any change request possibility was minimum.

Deep discussion was held to understand more about internal resources both dealers and workstations condition: people capabilities mapping for management and staff; hardware availability and compatibility; software availability and its integration with the implemented automotive information system; resource of internal application to integrate

with the system; conclude that improvement should be made to strengthen the implementation. From description above, submitted Technical Domain score from all participants were shown in table 6.

Table 6. Result of Information Economics Scorecard

	Domain	Likely Value	Comment	Resulting Weight
Business Domain				
A.	Return on Investment	Medium		2
B.	Strategic Match	High		4
C.	Competitive Advantage	Highest		6
D.	Management Information	Medium		2
E.	Competitive Response	High		4
F.	Organizational Risk	Low		-1
Technology Domain				
G.	Strategic IS Architecture	Low		1
H.	Definitional Uncertainty	Medium		-2
I.	IS Infrastructure Risk	Low		1
J.	Technical Uncertainty	Low		-1
			Total Value	**20**
			Total Risk & Uncertainty	**-4**

4.4 Line of Business Compatibility

Weight of each value in the Information Economic scorecard is determined using criteria in Corporate Value. Taken as an approach, Benson classifies a company or organization into three: whether it has good facilities or not, whether it is competitive or not compared with other organizations. From the discussion, the organization is classified as Institution III which had a large-scale institution with good facilities and has been a competitive institution until now compared to other organizations in the automotive industry. It was proven by the result of brand performance reached 80% market share in July 2021 (Damara, 2021), leading customer preference in buying their motorcycle, collaborating with thousands of dealers and workstations, and serving the customers.

Evaluator		Business Domain					Technology				Score
	ROI	SM	CA	MI	CR	OR	SA	DU	IR	TU	
(factor -------->	+	+	+	+	+	-	+	-	-	-	
weight	2	4	6	2	4	-1	1	-2	1	-1	
Business Domain	1,0	4,0	5,0	4,0	4,0	1,0					
Technology Domain							4,0	1,0	4,0	2,5	
TOTAL	**2**	**16**	**30**	**8**	**16**	**-1**	**4**	**-2**	**4**	**-3**	**75**

Figure 4. *Strategic Corporate Value Quadrant*

Proven that the organization can achieve its competitive advantage supported by a healthy business process and good infrastructure that enabled and supported by the information system.

Based on Corporate Value quadrant, the company has profitable, competitive, healthy, and strong Line of Business, and strong and effective computer support in running the business, therefore, the company has categorized in quadrant B: Strategic. According to the categorization, score weights were determined using Strategic Corporate Value Quadrant as seen in figure 4.

Regarding the Strategic Likely Value, confirmed that the company should consider the investment to increase the competitive advantage as future strength of the enterprise

although bottom line contributor (ROI) is also important. Project scope definition also played important role for technical domain in managing deliverables of the digitization project. Based on the description of what is important for the company's line of business, weight result in Strategic quadrant is determined to calculate the scoreboard based on enhanced Return on Investment result, combined tangible and intangible score both for business and technology domain.

Final score was seventy-five (75) resulting that the investment categorized as good return of information system investment based on Information Economics Scorecard classification as seen in table 6.

V. Conclusion

Analyzing the investment impact of digitization process in motorcycle network that consist of dealers and workstations, conclusion of the study as follows:

a) Implemented information system can reduce the burden of administration costs that must be issued for the needs of sales and service transactions (tangible benefits),
b) Implemented information system can reduce the workload of salespeople both in dealers and workstations due to faster and less redundant activities (quasi-tangible benefits),
c) Implemented information system strengthens network competitive advantage that improve the execution of dealer and workstation strategy and operational process.

Through the activities, the most useful module in automotive information system that brought competitive edge and impacted to big number of workstations is the Service Management module with Work Order feature. Significant workload reduction brings faster process and more efficient workload especially for Service Advisors in receiving and consulting work repair in the workstation.

Suggestions that might be made are that the next development should focus more on components related to the Service Management module and Work Order feature, such as historical profile of service transaction, combine with next service and parts recommendations. In addition, recommendation for further research is to measure the benefits of mobile applications implementation for frontline people both in dealers and workshops.

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