https://doi.org/10.58195/emi.v2i1.67

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Article

Having the Resilience to an Ever-Changing Business Environment Through Strategic Collaboration Supported by Digital Innovation

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Abstract: Purpose-This research aims to find out how a company can be resilient to an ever-changing business environment through the development of collaboration strategies and digital innovation to improve business performance and to find out which is more dominant in adapting to an ever-changing business environment to improve business performance, whether collaboration strategies or digital innovations? Research Design-This research uses a quantitative approach. Observations were made in a cross-section/one-shot, in 2022. The population of this research was the ISP industry in Indonesia, which amounted to 474 companies, and the unit of observation was the top management. Samples were taken from as many as 240 respondents. Testing the causality hypothesis in this research used Structural Equation Modelling (SEM). Results -The results of this research indicate that the business environment has a significant indirect effect on business performance through collaboration and digital innovation strategies, while the direct influence of the business environment on business performance is not significant. The effect of mediating collaboration strategies on the relationship between the business environment and business performance is more dominant than the mediating effect of digital innovation. Conclusion -By developing and implementing digital collaboration strategies and digital innovation to adapt to an ever-changing business environment, making changes in the business environment does not have a direct effect on business performance, so companies will have the resilience to an ever-changing business environment the business environment, and because collaboration strategies have a more dominant influence than digital innovation, then companies should prioritize collaboration strategies that are supported and complemented by digital innovation.

Keywords: business environment; digital innovation; collaboration strategies; business performance; internet service provider

1. Introduction

In 2019-2020 based on research conducted by the Indonesian Internet Providers Association (APJII) that the growth in the number of users of the Internet in Indonesia is nine times greater than the population growth in Indonesia. The growth of Internet users is also due to the growth of internet service providers in Indonesia, currently based on APJII data are 474 providers. In addition to facing competition with the 474 local ISPs, ISPs also face competition with the presence of foreign ISPs that operate in Indonesia, such as Starlink. This

Received: 2 April 2023; Accepted: 24 April 2023.

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condition puts the ISP industry in Indonesia in a hyper-competition situation.

Because of hyper-competition, internet access rates continue to decline from year to year, starting in 2009 until now, it's made the profitability growth of ISP companies tend to stagnate/decline. The existence of the Covid-19 pandemic has resulted in a further decline in ISP profitability, especially ISPs where most of their customers are business customers with a B2B business model, this is due to the reduced purchasing power of companies, governments, and schools, which led to a reduction in Internet spending. Besides hyper-competition, ISPs in Indonesia also have problems; regulations that are not in favor of internet service providers, digital technology disruption, increase in bank loan interest rates, and ever-increasing customer demands and preferences, these are part of the business environment. The business environment includes the microenvironment and macroenvironment [1].

The inventiveness of industry participants in growing the ISP business often does not adequately reflect the needs of the current market. Many ISP companies in Indonesia only provide basic internet services, therefore they must act quickly to innovate and discover new services with the new business model, such as IoT (Internet of Things) -based smart home services, video, games, payments, and others. The phenomena of digital innovation in ISP companies demonstrate that businesses still struggle to identify customer needs that have untapped potential for capturing market share. In addition, businesses have the propensity to innovate slowly in response to digital disruption, particularly when it comes to developing new products, services, and business models. In managing innovation in digital goods and services, five main areas have been identified that may be monitored and evaluated. These five main areas are user experience, value proposition, digital evolution scanning, skills, and improvisation [2–4].

The present performance of ISPs, according to APJII, is also correlated with the need for collaboration with pertinent stakeholders and industry participants, both of which have not yet been completely established adequately, for example; collaboration with the government as a policy maker to benefit the ISP industry such as tax amnesty and rescheduling USO (universal service obligation) payment, collaboration with banks to negotiate loan interest returns and loan installment payment time, collaboration with universities and suppliers for joint research on the use of new technologies to improve services. The company develops its collaboration strategy to deal with the ever-changing business environment by optimally utilizing its resources to improve its business performance. With the right collaboration, the company is expected to have "Strategic Resources" so that the company will have a long-term competitive advantage compared to other companies that do not have it [5].

The relationship between the business environment and business performance that was examined by previous researchers turned out to get inconsistent results, studies stated that the relationship between the business environment and business performance was significant [6–11] while other studies gave insignificant results [12], as shown in Table 1, The inconsistency of the results of previous studies is a research gap, so this study aims to improve this research gap by using digital innovation and collaboration strategies as mediating variables for the indirect relationship between the business environment and business performance.

Table 1. The inconsistency of the results from the previous studies that studied the relationship between business environment and business performance.

Author	Result
[6-11]	Significant
[12]	Not Significant

2. Hypothesis, Theoretical, and Research Model Framework

2.1. Theoretical Framework

This study uses the logic that the more attractive the business environment, such as market potential, economic growth, political stability, and government regulatory support, the company's performance will increase. Industrial Organizational Theory emphasizes that a company's competitive advantage comes from an attractive industry or external factors and a company's competitive ability is determined by the company's ability

to analyze opportunities and threats to external factors. Therefore, companies must have the ability to adapt to an ever-changing business environment to maintain a competitive advantage and sustainable business performance [13].

Business performance is the business result or the achievement of all operations related to the business; indicators of business performance are asset growth, sales growth, ROA, ROIC, and EBITDA margins [3, 14-16]. Other indicators such as return on equity (ROE), return on assets (ROA), earnings per share (EPS), and Tobin's Q ratio [17]. Research on digital technology, digital capabilities, and organizational performance, used ROA as a measuring tool [18], ROA, and ROE to measure the success of a business [19].

The digital innovation management framework identified in five main areas that can be measured and evaluated in managing digital product and service innovation, which include: value proposition, digital evolution scanning (observation of digital evolution), user experience, skills, and improvisation (improvisation) [4]. Digital innovation refers to the use of information and communication technology as the main driver of innovation that can have an impact on organizational structures, processes, and landscapes [20], and digital innovation is the result of new combinations of physical and digital components to produce new products [21],

The concept of a collaboration strategy is a planned cooperation activity that is mutually beneficial, involving all stakeholders including horizontal stakeholders (lateral, internal), and vertical stakeholders (customers, suppliers), who complement each other, this concept was developed based on a combination (cohesion) of the collaboration concept [22 – 25] with the concept of excellence collaborate through a meta-strategy [26,27]. A partnership strategy is a business strategy that determines the overall goals of business unit alliances (eg to develop new technologies or enter new markets) [27] and the configuration of portfolio business alliances [28]. These portfolio business alliances include collaboration with suppliers, collaboration with complements, cooperation with customers, and cooperation with competitors. Collaboration can be used effectively to resolve conflicts or produce a shared vision, namely, stakeholders agree on the potential benefits of working together [29]. Collaboration is “a process of shared decision-making among key stakeholders” [23].

The business environment is internal environmental factors (internal environment) and external environment that can still be controlled (narrowed external environment) and institutions outside the company's control (broader external environment) that can affect the company's business performance either directly or indirectly [30]. The external environment includes economic strength; social, cultural, demographic, and environmental forces; political, governmental, and legal power; technological power; competitive strength [15]. The external environment includes the microenvironment and the macro environment. The microenvironment is the environment over which the company’s stakeholders have control i. e. control over suppliers, customers, retailers, and competitors. And the Macro Environment, namely the environment over which stakeholders do not have direct control consists of politics, economy, society, and technology [1].

2.1.1. Variable Dimensions

Based on the results of previous studies which were then adjusted to the unit of analysis of this study, namely ISP in Indonesia, the dimensions of the variables of this study are business environment, digital innovation, collaboration strategy, and business performance. Business performance variables are measured using 5 indicators, namely asset growth, EBITDA margin, ROA, ROIC, and share growth [14–16]. To measure collaboration strategy variables used 5 dimensions included internal cooperation, cooperation with suppliers, cooperation with customers, cooperation with laterals, and cooperation with complementarities [27, 31, 32]. Digital innovation variables are measured using five dimensions [4], which consist of observation of digital evolution, user experience, value proposition, skills, and improvisation. While the business environment variables are measured with two dimensions [1], which consist of the macroenvironment and microenvironment.

2.2. Hypothesis

Based on previous studies, this study developed the following hypotheses:

Previous research shows that the business environment has a significant direct relationship with business performance, such as Studies that had shown that the business environment has a significant effect on business

performance: promotions carried out by local authorities had a beneficial impact on the performance of small and medium enterprises (SMEs) [9], small and medium enterprises must recognize and be able to adapt quickly to market changes to produce flexible and effective strategies to improve business performance [7], the success of a company is strongly influenced by environmental factors [6], the business organizational factors, psychological factors, government attitudes, international variables, marketing strategies, and company performance growth are influenced by the business environment [8]. According to the findings of previous studies, the first hypothesis is as follows:

H1: business environment has a significant effect on business performance.

Previous research shows that digital innovation has a significant direct relationship with business performance: process and product innovation had a substantial beneficial impact on business performance [33], the business relationships will have an impact on the company's success through product innovation [34], the capacity for innovation has a direct effect on product quality and operational performance [35]. According to the findings of previous studies, the second hypothesis is as follows:

H2: digital innovation has a significant effect on business performance.

Previous research shows that collaboration strategies have a significant direct relationship with business performance: The entrepreneurship, marketing capabilities, relational capital, and empowerment have an important effect on innovation capability and business performance [36]. Buyer involvement in international markets affects company performance [37]. Collaboration has positively affected business transformation [38]. According to the findings of previous studies, the third hypothesis is as follows:

H3: collaboration strategies have a significant effect on business performance.

Previous research shows that the business environment has a significant effect on business performance through digital innovation. Digital innovation mediates the impact of digital orientation and capabilities on performance both financially and operation [39]. Innovation aptitude mediates performance effects during economic expansion but only to a limited extent during recessions [40]. In times of economic expansion, innovation capability mediates the impact of customer orientation on firm performance; while, in times of economic contraction, the mediating effect is primarily driven by competitor orientation [40]. Business relationships influence a company's performance through product innovation [34]. According to the findings of previous studies, the fourth hypothesis is as follows:

H4: digital innovation mediates the relationship between the business environment and business performance.

Previous research shows that the business environment has a significant effect on business performance through collaboration strategies, the business environment greatly determines the success of the company, so companies need to develop strategic collaborative relationships with the right business model in response to industry competition to improve business performance [10]. According to the findings of previous studies, the fifth hypothesis is as follows:

H5: The collaboration strategies mediate the relationship between the business environment and business performance.

2.3. Research Model Framework

This study first aims to determine the direct effect of the business environment on digital innovation, collaboration strategy, and business performance, and secondly, to determine the effect of digital innovation mediation and collaboration strategy on the relationship between the business environment and business performance, the research model framework is shown in Figure 1.

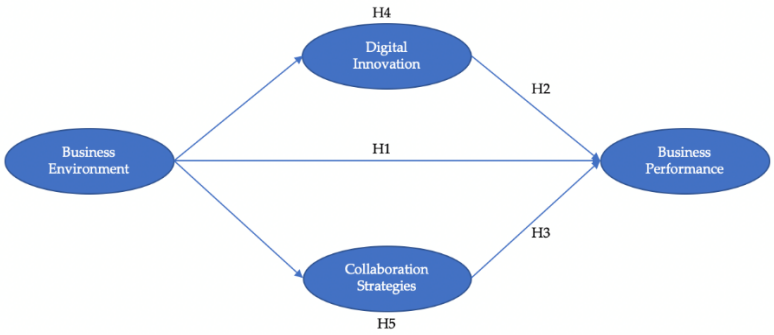

Figure 1. The research model framework. Source: researcher.

3. Research Methods

The method used in this research is a quantitative research approach. Observations were made in one shot, in 2022. The population of this study is the ISP industry in Indonesia, and the unit of observation is management. Samples were taken using stratified random sampling, i.e. the population elements were grouped at a certain level and the samples were taken evenly throughout the group so that the sample represented all heterogeneous population elements. The survey was conducted by selecting a sample from the population, namely ISPs that have licenses to operate in Indonesia and are members of APJII (Association of Indonesian Internet Service Providers), totaling around 474. ISPs are grouped based on the number of subscribers and the branch city where the ISP operates, which are divided into 3 groups, namely: small, medium, and large. A sample of 240 ISPs and samples taken from each classification were carried out randomly based on a list of population members, as shown in Table 2. This study used an ordinal scale with the Likert method which produced ordinal data. The ordinal measurement scale is the scale where the data shows a certain sequence or order [41]. To test the causality hypothesis, this study used Structural Equation Modeling (SEM).

Table 2. Population and sample. Source: APJII & stratified random sampling output, source: APJII, researcher.

Classification	Population	Samples
Large	14	7
Medium	65	33
Small	395	200
Total	474	240

4. Result

4.1. Goodness of Fit Analysis

Structural equation modeling is an ideal tool for analyzing data that aims to examine complex relationships among the many variables analyzed. Aim To examine the extent to which the hypothesized model provides a precise characterization of the collective relationships between the variables of the model, the researcher must measure the "fit" between the model and the sample data. Guidance for measuring whether a theory-based model fits empirical data or if the resulting model describes actual conditions. Structural Equation Model (SEM) as a statistical test tool can explain the suitability of a model to actual conditions with several index criteria to assess model suitability.

Table 3 below is the result of measuring the goodness of fit in this study, with Chi-Square = 669.90, and Chi-Square p-value = 0.65287 > 0.05. So based on the Chi-Square index, the suitability of this research model is fit (Hair et al., 2010) [42]. RMSEA<0.05. The goodness of Fit Index (GFI) = 0.83 > 0.80, and so is AGFI. From the results of the Goodness of Fit analysis, it can be concluded that this research model describes actual/empirical conditions.

Table 3. The goodness of fit analysis. Source: lisrel 8.7 output.

No.	Degree of Fit	Value	Acceptable Match-Rate	Explanation
1	Absolute Fit Test			
	Chi Square	669.90	P -value>0,05	Close Fit
	Normed Chi Square (x2/df)	P -value = 0.65287		
	Goodness of Fit Index (GFI)	0,83	>0,80	Close fit
	Root Mean Square Error of Approximation (RMSEA)	0,000	RMSEA≤ 0,08 (good fit) RMSEA< 0,05 (close-fit)	Close fit
2	Incremental Fit Measures			
	Adjusted Goodness of Fit Ind ex (AGFI)	0,81	AGFI> 0,8	Close fit
	Normed Fit Index (NFI)	0.93	NFI > 0.90	Close fit
	Comparative Fit Index (CFI)	0.98	CFI > 0.90	Close fit
3	Parsimonious Fit Measures			
	Parsimonious Normed Fit Index (PNFI)	0.96	PNFI > 0.90	Close fit
	Parsimonious GFI (PGFI)	0.93	PGFI > 0.90	Fit

4.2. Validity and Reliability Test

Validity is the degree of suitability between conceptual and operational development. If the instrument is said to be valid, it means that the instrument is appropriate for measuring what you want to measure by looking at the extent to which a measurement measures the construct you want to measure [43]. Research instrument items are said to be valid if they have a positive correlation with a correlation ⩾ 0.3 and/or p-value <0.05 [44].

Reliability indicates that the instrument used is consistent and can be trusted as a data collection tool and can reveal actual information in the field [45]. An instrument that is said to produce measurements that have high reliability means that it can provide reliable or reliable measurement results. The reliability measure is calculated by Cronbach Alpha [45].

And convergent validity was achieved through Average Variance Extracted and factor loadings with an expected value >0.50.

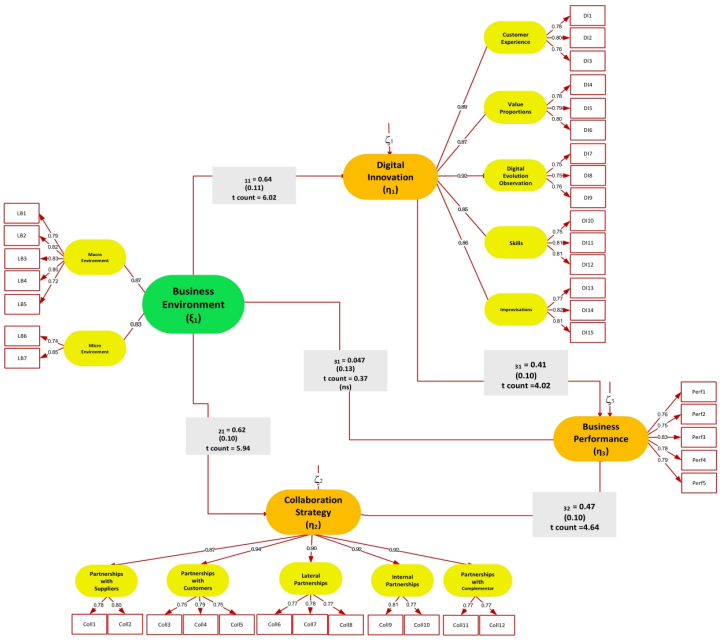

Figure 2. The model result, source: researcher.

Table 4. Measurement model. Source: lisrel 8.7 output.

Variables	Dimension -Indicators	Code	Loading Factor	t-value	P-value	Average Variance Extracted (AVE)	Composite Reliability
Business Environment	Macro Environment		0,87	8,88	0,000	0,629	0,894
	Economy	LB1	0,79	-			
	Politic	LB2	0,82	10,16	0,000		
	Social & Culture	LB3	0,83	10,28	0,000		
	Government Regulation	LB4	0,8	9,91	0,000		
	Technology Trend	LB5	0,72	8,85	0,000		
	Lingkungan Mikro		0,83	7,26	0,000	0,635	0,776
	Industry Competition	LB6	0,74	-			
	Customer Profile	LB7	0,85	7,54	0,000		
Digital Innovation	User Experience		0,89	8,55		0,609	0,823
	Product/service usefulness	DI1	0,78	-			
	Product/service aesthetics	DI2	0,8	9,15	0,000		
	Customer engagement	DI3	0,76	8,79	0,000		
	Value Proposition		0,87	8,47	0,000	0,624	0,833
	Customer segment	DI4	0,78	-			
	Bundling	DI5	0,79	9,13	0,000		
	Commission	DI6	0,8	9,27	0,000		
	Digital Evolution Observation		0,92	8,45	0,000	0,568	0,882
	Digital equipment	DI7	0,75	-			
	Marketing channel	DI8	0,75	8,44	0,000		
	User behavior	DI9	0,76	8,55	0,000		
	Skill		0,85	8,05	0,000	0,625	0,833
	Learning	DI10	0,75	-			
	Role fulfillment	DI11	0,81	9,00	0,000		
	Team building	DI12	0,81	8,92	0,000		
	Improvisation		0,86	8,34	0,000	0,640	0,842
	Innovation space development	DI13	0,77	-			
	Timing	DI14	0,82	9,46	0,000		
	Coordination with related parties	DI15	0,81	9,33	0,000		
Collaboration Strategies	Suppliers		0,87	8,39	0,000	0,624	0,769
	Software	Coll1	0,78	-			
	Hardware	Coll2	0,80	8,64	0,000		
	Customers		0,94	8,85	0,000	0,583	0,807
	Customer Loyalty	Coll3	0,75	-			
	Customer database	Coll4	0,79	9,01	0,000		
	Fast & Easy Services	Coll5	0,75	8,55	0,000		
	Lateral		0,90	8,68	0,000	0,598	0,817

Cont.

Variables	Dimension -Indicators	Code	Loading Factor	t-value	P-value	Average Variance Extracted (AVE)	Composite Reliability
	Government	Coll6	0,77	-			
	Business Association	Coll7	0,78	8,94	0,000		
	Competitor	Coll8	0,77	8,84	0,000		
	Internal		0,92	9,28	0,000	0,625	0,769
	Functional Coordination	Coll9	0,81	-			
	Effective Communication	Coll10	0,77	9,04	0,000		
	Complementor		0,92	8,73	0,000	0,593	0,744
	Banking	Coll11	0,77	-			
	University	Coll12	0,77	8,56	0,000		
Business Performance	ROA	Perf1	0,76	-		0,620	0,830
	EBITDA Margin	Perf2	0,75	8,83	0,000		
	ROIC	Perf3	0,83	9,79	0,000		
	Asset Growth	Perf4	0,78	9,16	0,000		
	Market Share	Perf5	0,79	9,29	0,000		

In Figure 2 and Table 4, shows that the loading factors > 0.50, with the t value > the t-table (1.98) at a significance of 5%, can be concluded that dimensions and indicators are valid in measuring latent variables. With composite reliability > 0,7 and AVE > 0,5, it can be stated that the dimensions and indicators used in this research are reliable.

4.3. Hypothesis Testing

The results of hypothesis testing can be seen in Table 5.

Table 5. Hypothesis testing.

No	Hypothesis	Coefficient Estimation	t-value	R^2	P-Value	Conclusion
1	Business Environment → Business Performance	0,047	0,370	0,002	0,712	Not Significant
2	Digital Innovation → Business Performance	0,410	4,020	0,168	0,000	Significant
3	Collaboration Strategies → Business Performance	0,470	4,640	0,221	0,000	Significant
4	Business Environment → Digital Innovation → Business Performance	0,262	3,351	0,262	0,001	Significant
5	Business Environment → Collaboration Strategies → Business Performance	0,291	3,745	0,291	0,000	Significant

Source: Researcher.

It is found that:

The business environment does not have a significant direct effect on business performance but has a significant indirect effect on business performance either through the mediation of digital innovation or collaboration strategies. The indirect effect of the business environment on business performance is more dominant through strategic collaboration mediation (R2 = 0.291) than through digital innovation mediation

(R2 = 0.262).

Digital innovation and collaboration strategies have a direct and significant impact on business performance with a t value > 1.98 (Prob < 0.05). Strategic Collaboration has a more dominant influence on business performance (R2=0.221) compared to digital innovation (R2=0.168).

This research does not support the previous research results of [6–11] which describe the significance of the direct relationship between the business environment and business performance but supports the results of research of [12] which states that the direct relationship between the business environment and business performance is not significant.

This study also supports previous research which states that there is a significant direct effect of digital innovation on business performance [33, 34] and also supports previous research [37, 38] which state that collaboration strategies have a significant direct effect on business performance.

This finding also supports the results of research [34,39,40] which stated a significant indirect effect of the business environment on business performance through the mediation of digital innovation. And also supports the results of [10] which explains the indirect effect of the business environment on business performance through the mediation of collaborative strategies.

Companies must correctly know the condition of their business environment, whether it is an opportunity or a threat, then anticipate it in order to have a competitive advantage. Industrial Organization Theory states that a company's competitive advantage is determined by the ability to anticipate opportunities and threats from external factors of the company [13]. It is proven that the business environment does not have a direct influence on business performance, however, it has an indirect effect through digital collaboration and innovation strategies. Table 4 shows that the macro environment is slightly more dominant than the microenvironment, the macro environment has a loading factor (of 0.87) while the microenvironment (has 0.83). The macro-environment consists of aspects: politics, government policies, economics, social culture, and technological developments. The microenvironment consists of industry competition and consumer profiles. These results indicate that in developing digital collaboration and innovation strategies to anticipate changes in the business environment, ISPs need to prioritize anticipating changes in the macro environment and then the microenvironment.

Digital innovation is the process of observing digital evolution and developing user experiences, value propositions, skills, and improvisations [4]. By developing digital innovations, ISPs are expected to be able to anticipate and/or adapt to changes in the business environment that occur in order to maintain a competitive advantage, so that the company's performance does not depend directly on the business environment. Table 4 shows that the observation of digital evolution has the largest loading factor (0.92) followed by user experience (0.89), value proposition (0.87), improvisation (0.86) and skill is the smallest (0, 85).

The collaborative strategy has a significant direct effect on business performance, and collaborative strategy also has a mediating effect on the indirect relationship between the business environment and business performance. Table 4 shows that collaboration with customers has the largest loading factor (0.94), followed by collaboration with complement (0.92), internal collaboration (0.92), lateral collaboration (0.90), and collaboration with suppliers is the smallest (0.87). The company implements its collaboration strategy to deal with changes in the business environment to improve performance. Through collaboration, companies are expected to be able to have "Strategic Resources" so that companies have a long-term competitive advantage compared to other companies that do not have them (Barney, 1991) [5]. The mediation of collaborative strategy towards the indirect relationship between the business environment and business performance has a greater coefficient value (0.291) compared to the mediation coefficient value of Digital Innovation (0.262).

5. Discussion and Conclusion

The findings of this study are new and very interesting to implement because they provide managerial implications that can be directly applied, namely how to anticipate a changing business environment in order to continue to improve business performance, as well as the results of this study have theoretical implications.

The theoretical implication of this research is to produce a model that can make companies resilient to an

ever-changing business environment through the development and implementation of collaborative strategies supported by digital innovation to increase competitive advantage in order to produce sustainable business performance. The results of this study provide evidence that changes in the business environment do not directly affect business performance, and this ever-changing business environment can be anticipated, adapted, and can provide added value to business performance if companies are able to develop appropriate collaboration strategies that are supported by the application of innovation. digital.

The managerial implication of this research is that it can be used practically by ISP management in Indonesia to anticipate the ever-changing business environment in order to improve business performance and develop appropriate collaboration strategies supported by the implementation of digital innovation.

To anticipate the ever-changing business environment in order to improve business performance through developing appropriate collaboration strategies and supported by the implementation of digital innovation, ISPs must carry out the following operational steps:

1. In terms of business performance, prioritizing achieving ROIC (return on invested capital) is achieved, because the ISP industry requires investment in deploying its service infrastructure, this investment is generally obtained from bank loans, so ISPs must ensure they are able to repay the loan. Then ensure the achievement of market share control indicators through asset growth while ensuring the achievement of ROA (return on assets) and the company's EBITDA margin.

2. Prioritize the development of the right collaboration strategies start with collaboration with customers because from this collaboration the company will know what customers really need and want, this will answer the problem of ever-increasing customer demands and preferences; then collaboration with complementary that will answer the problem increase in bank loan interest rates thru collaboration with banking and digital technology disruption thru joint research collaboration with University; internal collaboration will improve thru efficient functional unit coordination and effective communication; collaboration with lateral will answer the problem of hyper-competition and government regulations that are not in favor of the ISP industry, thru collaboration with business association, government, and competitor; and lastly collaboration with suppliers will help to answer the problem of digital technology disruption and selection of the right technology that can be used to enhance the ability to develop new products and services

3. The development of digital innovation prioritizes observing digital evolution in order to be able to choose the right digital tools and marketing channels to be used to develop digital innovations, further enhancing the customer experience through the development of products/services that have aesthetic and usability values for customers, trying to provide a value proposition for customers by ways of giving healthy commissions, bundling products and implementing customer segmentation, increasing improvisation in digital innovation by providing the right time, coordination and opportunities to innovate, finally increasing skills in digital innovation by developing teams, assigning the right roles, and providing learning. Apart from implementing a collaboration strategy, this digital innovation development support will also enhance the company's ability to anticipate and adapt to an ever-changing business environment, particularly to changes caused by digital technology disruptions, increasingly numerous and dynamic changes in customer preferences, and intense competition. , by producing products and services that have the best aesthetic value and usability so as to enhance the customer experience.

4. In anticipating and adapting to changes in the business environment, ISPs need to prioritize anticipating and adapting aspects of the macroenvironment first and then the microenvironment, because macro-environmental aspects (social & culture, politics, government regulation, economics, and technology trend) are beyond the ISP control.

In conclusion, companies can have resilience to an ever-changing business environment, namely by developing collaborative strategies supported by digital innovation so that companies will have a competitive advantage and be able to achieve sustainable business performance. The results of this study can also be applied to other industries that have the same characteristics as the ISP industry, namely industries that experience hyper-competition, are capital intensive, must always keep abreast of digital technology developments, must be creative in developing new products/services requested by customers, and must always innovate to stay in

business.

It is interesting to continue this research by examining how the mediation effect of collaboration strategy has on the relationship between digital innovation and business performance, as well as how the mediation effect of Digital Innovation has on the relationship between collaboration strategy and business performance, as well as finding which of the four mediation channels will have the most dominant influence in anticipate and adapt to the ever-changing business environment to improve business performance, whether it is the business environment-digital innovation-business performance path or the business environment-collaboration-strategy-business performance path or the business environment-digital innovation-collaboration strategy-business performance path or the environment pathway business-collaboration strategy-digital innovation-business performance. So that further research will provide better practical guidance for companies on how to anticipate and adapt to an ever-changing business environment and have better business performance.

Funding

This research received no external funding.

Author Contributions

S.H. is the main author of this article and also played a role in analyzing the statistical data generated in this study. M.S. is an expert in the field of economics and research management. She is also an expert in the field of economics, and she was very instrumental in providing input on the use of theories in this research to produce quality research. F.R. is an expert in the field of research management. He was very helpful in providing input in this research to produce quality research. A. S. H. is an expert in strategic marketing. He played a role in providing input in this research to produce quality research. All authors have read and agreed to the published version of the manuscript.

Institutional Review Board Statement

Not applicable.

Informed Consent Statement

Not applicable.

Data Availability Statement

Data is available upon request from the corresponding authors.

Conflicts of Interest

The authors declare no conflict of interest.

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