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DEVELOPING AN AGILE STRATEGIC MANAGEMENT MODEL FOR GRADUATE QUALITY AND COMPETITIVENESS IN HOSPITALITY VOCATIONAL HIGHER EDUCATION: A COMPARATIVE CASE STUDY

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ABSTRAK

Latar Belakang: Pendidikan tinggi vokasi bidang perhotelan dituntut menghasilkan lulusan yang memiliki kompetensi profesional dan mampu merespons perubahan kebutuhan industri. **Tujuan**: Penelitian ini menganalisis praktik manajemen strategis pada dua institusi pendidikan tinggi vokasi bidang perhotelan dan mengembangkan model hipotetik yang berorientasi pada mutu dan daya saing lulusan. **Metode**: Penelitian menggunakan studi kasus komparatif kualitatif di Universitas Telkom dan Politeknik Pariwisata NHI Bandung, dengan cakupan Program Studi D3 Perhotelan, D4 Pengelolaan Perhotelan, dan D3 Divisi Kamar. Data diperoleh melalui wawancara, observasi, dan analisis dokumen, kemudian dianalisis secara deskriptif dan komparatif. **Hasil**: Kedua institusi telah mengembangkan kurikulum berorientasi industri, pembelajaran praktik, kemitraan industri, magang, sertifikasi profesi, dan penjaminan mutu. Perbedaan pendekatan terlihat pada penggunaan analisis SWOT dan pendekatan pentahelix di Universitas Telkom, sedangkan Politeknik Pariwisata NHI Bandung menunjukkan keterkaitan formal yang lebih kuat antara perencanaan kelembagaan, kebijakan pariwisata nasional, dan pemangku kepentingan industri. Pada kedua institusi, integrasi informasi lingkungan, prioritas strategis, sumber daya organisasi, implementasi, dan evaluasi dalam proses manajemen yang berkelanjutan masih menjadi tantangan. **Kesimpulan**: Penelitian ini mengembangkan Agile, Integrated System, and Techno-based Feedback Process Model sebagai konfigurasi tiga karakteristik kelembagaan yang bekerja lintas empat proses manajemen strategis. Kelincahan strategis mendukung respons terhadap perubahan, integrasi sistem mengoordinasikan fungsi kelembagaan dan pelaksanaan program studi, sedangkan umpan balik berbasis teknologi menghubungkan pemantauan dan informasi pemangku kepentingan dengan pembelajaran organisasi serta penyesuaian strategi. Model ini masih bersifat hipotetik sehingga implementasi dan kontribusinya terhadap hasil pendidikan memerlukan pengujian empiris lebih lanjut.

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Strategic Management; Vocational Higher Education; Graduate Quality; Graduate Competitiveness; Hospitality Education.

ABSTRACT

Background: Hospitality vocational higher education institutions are expected to develop graduates whose professional competencies remain relevant to changing industry requirements. **Purpose of study**: This study examines strategic management practices in two hospitality vocational higher education institutions and develops a hypothetical model oriented towards graduate quality and competitiveness. **Methods**: A qualitative comparative case study was conducted at Telkom University and NHI Bandung Tourism Polytechnic, covering the D3 Hospitality, D4 Hotel Management, and D3 Room Division Management Study Programmes. Data were obtained through interviews, observation, and document analysis, and examined descriptively and comparatively. **Results**: Both institutions have developed industry-oriented curricula, practical learning, industry partnerships, internships, professional certification, and quality assurance. Their strategic approaches differ: Telkom University employs SWOT-based assessment and pentahelix stakeholder engagement, whereas NHI Bandung demonstrates a more formal connection between institutional planning, national tourism policy, and industry stakeholders. Across both cases, integrating environmental information, strategic priorities, organisational resources, implementation, and evaluation into a continuous management process remains a shared challenge. **Conclusion**: The study develops the Agile, Integrated System, and Techno-based Feedback Process Model as a configuration of three institutional characteristics operating across four strategic management processes. Strategic agility supports responsiveness to change; the Integrated System coordinates institutional functions and programme-level implementation; and technology-based feedback connects monitoring and stakeholder information with organisational learning and strategic adjustment. The model remains hypothetical, and its implementation and contribution to educational outcomes require further empirical evaluation.

A. INTRODUCTION

Hospitality vocational higher education institutions are expected to develop graduates with professional competencies, practical skills, and the capacity to respond to changing industry requirements. Graduate quality concerns the knowledge, technical and practical competencies, communication abilities, adaptability, and professional conduct developed through educational processes. In hospitality, service ethics, responsibility, teamwork, and respect for service standards are integral to professional competence because educational achievement must be translated into reliable and responsible workplace practice. Employers increasingly value transversal competencies, including problem-solving, teamwork, and adaptability, alongside technical knowledge (García-Álvarez et al., 2022). Meeting these expectations requires institutional strategies that connect industry developments, educational resources, academic processes, and quality assurance.

The relationship between educational provision and industry requirements extends beyond curriculum design. It depends on institutional capacity to identify environmental changes, formulate appropriate priorities, coordinate resources, implement programmes, and evaluate results. Studies in Indonesia have emphasised the contribution of vocational and higher education to human capital development and national competitiveness, while also identifying challenges in aligning educational provision with workplace requirements (Indrawati & Kuncoro, 2021)(Wibowo et al.,

2022). Industry partnerships, internships, and competency-based learning can strengthen graduate preparation, but their contribution depends on how effectively they are integrated into institutional strategies and programme implementation.

Formal strategic planning does not necessarily ensure that these activities operate as an integrated system. In higher education, strategic planning needs to be connected with performance management, institutional alignment, and the effective use of performance information (Biondi & Russo, 2022; Huisman & Stensaker, 2022; Kamilia et al., 2024). Environmental analysis may not sufficiently inform programme priorities, while institutional strategies may be translated unevenly into faculty and study-programme activities. Evaluation can also remain concentrated on administrative reporting rather than informing strategic adjustment. These disconnections weaken the relationship between planning, implementation, and organisational learning. The analytical issue is therefore not the absence of strategic management stages, but the limited explanation of how responsiveness, institutional coordination, and feedback operate together across those stages in hospitality vocational education.

The challenge is particularly relevant to hospitality vocational education because industry requirements, service standards, and technological developments can change faster than conventional academic planning cycles. Strategic agility provides a useful perspective for understanding institutional responsiveness. It concerns an organisation's capacity to recognise environmental changes, make timely decisions, and reconfigure resources and processes. Doz & Kosonen (2010) associate strategic agility with strategic sensitivity, leadership unity, and resource fluidity. Subsequent research has examined its relationship with environmental uncertainty and organisational performance (Ahammad et al., 2021; AlTaweel & Al-Hawary, 2021), including institutional performance and competitive advantage in higher education (Chan & Muthuveloo, 2022; Rizki et al., 2023). However, responsiveness also requires coordination across organisational levels and functions. Dynamic capabilities in higher education therefore involve not only adaptation but also the mobilisation and integration of institutional resources (Guerrero & Menter, 2024; Heaton et al., 2023).

Technology can support this integration by connecting environmental information, institutional performance data, and stakeholder feedback. Digital transformation in higher education involves changes in organisational strategy and processes rather than the adoption of technological applications alone (Hashim et al., 2022). Data-informed governance, learning analytics, and technology-supported feedback can improve institutional monitoring and decision-making (Beerkens, 2022; Kleimola & Leppisaari, 2022; Sembey et al., 2024). Their strategic value, however, depends on whether the information generated is used to evaluate performance, identify emerging needs, and adjust institutional priorities. Digital systems that remain disconnected from strategic decision-making cannot, by themselves, ensure organisational responsiveness.

These issues are examined through a comparative qualitative case study involving two institutional settings: Telkom University and NHI Bandung Tourism Polytechnic. The analysis encompasses three study programmes: the D3 Hospitality Study Programme at Telkom University, and the D4 Hotel Management and D3 Room Division Management Study Programmes at NHI Bandung Tourism Polytechnic. The two institutions constitute the comparative cases, while the three programmes provide embedded contexts for examining how institutional strategic orientations are reflected

in programme-level practices. Both institutions operate in hospitality vocational higher education, where educational quality is closely related to professional standards and industry requirements. The Indonesian higher education context also places importance on institutional quality assurance and the development of a sustainable quality culture (Nugraha et al., 2023; Sutono et al., 2025). The study analyses four principal strategic management processes: environmental scanning, strategy formulation, strategy implementation, and evaluation and control. It further examines feedback, organisational learning, institutional constraints, and strategic responses, with particular attention to the connections among institutional planning, programme-level practices, industry engagement, and performance information.

The comparative analysis provides the basis for developing the Agile, Integrated System, and Techno-based Feedback Process Model in relation to the strategic management framework of Wheelen et al. (2018). Existing strategic management frameworks specify the principal stages of environmental scanning, strategy formulation, implementation, and evaluation, while research on strategic agility, dynamic capabilities, and digital transformation explains important aspects of adaptation and organisational learning.

The proposed configuration brings these perspectives into a connected arrangement for hospitality vocational higher education, where responsiveness to industry change, coordination across institutional and programme levels, and the use of feedback need to reinforce one another. Agile Strategic Management refers to institutional responsiveness to changes in industry, technology, and the wider environment. Integrated System concerns coordination among strategic processes, organisational functions, institutional levels, and responsibilities. Techno-based Feedback Process emphasises the use of technology to support monitoring, stakeholder feedback, organisational learning, and strategic adjustment. These characteristics are not additional stages in the strategic management cycle; they operate across its four processes to strengthen their coordination and continuity.

Graduate quality, graduate competitiveness, and employability refer to related but distinct concepts. Graduate quality concerns the competencies and professional capabilities developed through education. Graduate competitiveness concerns the relevance of these competencies to occupational standards and changing industry expectations, including technical and practical skills, communication, foreign-language proficiency, adaptability, certification, and professional conduct. Employability refers to the capacity to obtain and sustain employment, while actual employment absorption is also influenced by labour-market conditions, recruitment practices, and industry demand.

The proposed model is directed primarily towards the institutional processes that support graduate quality and competitiveness; employment absorption is treated as a longer-term outcome rather than a result that can be attributed solely to institutional management. This study therefore analyses strategic management practices in the two institutions and develops a hypothetical model based on comparative findings and expert input. Its contribution concerns educational management through the integration of institutional responsiveness, coordinated implementation, and technology-supported organisational learning. The professional and ethical dimensions of hospitality education are addressed through service ethics,

responsibility, and the standards governing professional practice, without assuming a religious or institutional value framework that is not part of the empirical research.

B. METHOD

This study employed a qualitative comparative case study design to examine strategic management practices in hospitality vocational higher education (Creswell & Poth, 2024; Yin, 2018). The research involved two institutional cases: Telkom University and NHI Bandung Tourism Polytechnic. At Telkom University, the analysis focused on the D3 Hospitality Study Programme; at NHI Bandung Tourism Polytechnic, it covered the D4 Hotel Management and D3 Room Division Management Study Programmes. The institutional settings provide the basis for cross-case comparison, while the three programmes constitute embedded analytical contexts for examining how institutional strategic direction is reflected in programme-level management practices.

The cases were selected because of their direct connection with hospitality education and the hospitality industry. Data were collected through semi-structured interviews, observation, and document analysis. Informants were purposively selected from institutional leaders, programme managers, lecturers, students, and business and industry representatives (DUDI), based on their roles and knowledge of institutional management and hospitality education (Patton, 2015). The documents examined included strategic plans, institutional policies, curricula, internship guidelines, accreditation records, internal quality assurance materials, and tracer-study reports.

Data were analysed through data reduction, classification, comparison, and interpretation. The analytical process followed data condensation, data display, and conclusion drawing as described by Miles et al. (2020). The strategic management framework of Wheelen et al. (2018) provided the principal deductive categories of environmental scanning, strategy formulation, strategy implementation, and evaluation and control. Interview, observation, and documentary information was considered in relation to these categories, while feedback mechanisms, institutional constraints, and strategic responses were examined as interconnected dimensions arising from the case material. Each institutional case was first examined in its own organisational context; the subsequent cross-case comparison identified common patterns and institution-specific differences. This combination of framework-guided analysis and cross-case interpretation enabled the study to distinguish the four established management processes from the cross-cutting conditions shaping their operation.

The hypothetical model was developed by synthesising the comparative findings with the strategic management framework, resulting in three interconnected characteristics: strategic agility, institutional integration, and technology-based feedback. The model was reviewed by experts with backgrounds in strategic management, tourism policy, and industry practice to consider its conceptual relevance and practical potential. Their input informed the refinement of the relationships among institutional planning, programme implementation, industry requirements, and performance evaluation. The expert review provides conceptual and practical consideration of the proposed configuration; it does not constitute an empirical test of implementation effectiveness. Research trustworthiness was supported through source and method triangulation, peer debriefing, and member checking, while documentation of research procedures and analytical decisions supported dependability and confirmability (Lincoln & Guba, 1985).

C. RESULT AND DISCUSSION

Findings

Environmental Scanning and Strategic Awareness

The findings indicate that both Telkom University and NHI Bandung Tourism Polytechnic conducted internal and external environmental assessments to inform institutional and programme-level strategic decisions. These assessments covered institutional strengths and weaknesses, external opportunities and threats, developments in the hospitality industry, and the competencies required by employers. However, the two institutions differed in the scope of their environmental analysis and the extent to which its results were translated into strategic priorities.

At Telkom University, environmental scanning involved strategic situation analysis, SWOT analysis, and stakeholder engagement through a pentahelix approach. Programme-level assessments considered changes in hospitality operations, digital technology adoption, international competency standards, and industry expectations. Practical skills, technology literacy, and lecturers' industry experience were identified as institutional strengths. However, foreign-language proficiency and soft skills, particularly communication, leadership, teamwork, and service ethics, remained areas requiring improvement. These findings indicate that environmental assessment considered both institutional conditions and the competencies needed to maintain graduate competitiveness.

At NHI Bandung Tourism Polytechnic, environmental assessment demonstrated a closer formal relationship with national tourism policy. Its institutional strategic planning referred to the Ministry of Tourism and Creative Economy's strategic direction for 2020–2024. The institution also involved industry stakeholders, advisory boards, alumni, and professional associations in identifying changes in professional competency requirements. These relationships provided channels for maintaining programme relevance and connecting institutional priorities with developments in the tourism and hospitality sectors.

Despite these activities, environmental scanning at both institutions had limitations. At Telkom University, external analysis remained predominantly qualitative and was not consistently supported by systematic quantitative industry data. At NHI Bandung Tourism Polytechnic, formal instruments such as PESTEL analysis, Porter's Five Forces, and competitive intelligence were not fully developed. Internal assessment at both institutions also required stronger integration of core competencies, value chains, organisational culture, and distinctive institutional resources. These limitations indicate that environmental awareness had been established, although its analytical depth and systematic use in strategic decision-making remained uneven.

This finding is consistent with the strategic agility perspective, which emphasises the capacity to recognise environmental changes and translate them into timely organisational responses (Ahammad et al., 2021; Doz & Kosonen, 2010). Strategic agility also depends on the ability to mobilise organisational resources and develop innovation capabilities under conditions of environmental uncertainty (AlTaweel & Al-Hawary, 2021; Warta et al., 2024). In higher education, dynamic capabilities are relevant to institutional adaptation because universities must continuously adjust their resources

and organisational arrangements in response to changing external demands (Guerrero & Menter, 2024; Heaton et al., 2023). The findings therefore suggest that environmental scanning needs to move beyond periodic identification of opportunities and threats towards a more systematic institutional capability for anticipating and responding to industry developments.

Strategy Formulation and Institutional Alignment

Strategy formulation at both institutions reflected an orientation towards improving educational relevance, strengthening graduate competencies, and responding to hospitality industry requirements. Institutional and programme priorities included curriculum development, competency-based learning, industry collaboration, practical training, professional certification, and the adoption of international standards. These priorities demonstrated an understanding that graduate competitiveness depends on alignment between academic provision and workplace expectations.

At Telkom University, strategic formulation was connected to institutional and faculty planning, programme development, and SWOT analysis. Curriculum benchmarking and the adoption of international hospitality competency references, particularly the ASEAN Common Competency Standards for Tourism Professionals (ACCSTP) and the Common ASEAN Tourism Curriculum (CATC), formed part of the programme's efforts to maintain educational relevance. Industry collaboration and the integration of practical learning with technological developments were also considered strategic priorities. Nevertheless, the relationship between institutional direction, faculty planning, programme objectives, and external environmental analysis was not always consistent.

At NHI Bandung Tourism Polytechnic, strategy formulation was more directly connected to national tourism policy and institutional strategic priorities. These priorities were translated into programme objectives involving hospitality competency development, industry partnerships, and educational quality improvement. Contributions from advisory boards, industry representatives, alumni, and professional associations provided additional perspectives on curriculum relevance and professional standards. This arrangement strengthened the connection between programme planning and the requirements of the tourism and hospitality sector.

A common limitation concerned the integration of functional strategies. Curriculum and academic development received considerable attention, but their relationships with human resource development, financial planning, technology investment, organisational culture, and internationalisation were less consistently articulated. Strategic differentiation and innovation also required clearer direction. These findings indicate that strategy formulation needs to extend beyond identifying educational activities. Institutional priorities must be supported by coordinated functional strategies, appropriate resources, and measurable performance objectives.

The importance of this alignment is also evident in research on strategic planning and performance management in universities. Biondi & Russo (2022) explain that strategic planning becomes more meaningful when connected to institutional

performance management. Kamilia et al. (2024) similarly emphasise the role of execution capability in translating strategic alignment into institutional performance. Strategic management in higher education consequently requires coordination across institutional levels, organisational functions, and competing priorities (Fumasoli & Hladchenko, 2023). The findings from both cases illustrate this challenge: strategic priorities were identifiable, but their translation into coordinated institutional and programme-level activities remained incomplete.

Strategy Implementation and Industry Engagement

Both institutions translated their strategic priorities into educational and organisational activities, including curriculum implementation, practical learning, internships, competency development, industry partnerships, lecturer development, certification, and the use of digital technology. These activities reflected the importance of industry engagement in maintaining the relevance of hospitality education. However, implementation was influenced by institutional resources, organisational coordination, and the capacity to connect programme activities with broader institutional objectives.

At Telkom University, implementation included Outcome-Based Education (OBE), project-based learning, case studies, capstone projects, and industry engagement. These approaches provided opportunities to connect theoretical knowledge with practical competencies and workplace situations. Internships, training, and professional certification also supported students' occupational preparation. Digital learning approaches and the incorporation of contemporary industry cases into teaching further contributed to the integration of academic activities and developments in hospitality operations.

At NHI Bandung Tourism Polytechnic, implementation emphasised practical and professional training, industry exposure, competency certification, and curriculum alignment with hospitality standards. Collaboration with industry partners and professional stakeholders supported the delivery of vocational education. Practical experience was particularly important in developing students' technical competencies and interpersonal skills, which are central to hospitality service delivery.

The findings nevertheless indicate that strategic intentions were not always supported by adequate resources and consistent performance management. At Telkom University, stronger connections were needed between programme-level activities and broader institutional priorities. At NHI Bandung Tourism Polytechnic, limitations in learning facilities, practical equipment, funding for off-campus activities, and technological adaptation affected the implementation of certain initiatives. Across both institutions, performance indicators, resource allocation, organisational culture, and internationalisation required more systematic integration with strategic priorities.

These findings correspond with research on the challenges of integrating vocational education and workplace requirements. Wibowo et al. (2022) identify institutional challenges in implementing dual vocational education and training in Indonesia, while Majid et al. (2024) highlight the importance of structured strategies for developing graduate employability skills in TVET programmes. Industry–education integration also requires attention to the relationship between institutional activities

and industry needs rather than relying solely on the existence of partnerships (Gong, 2024). In hospitality education, the changing professional environment further requires educational institutions to reconsider their assessment and learning approaches (Opoku et al., 2023). Thus, industry engagement needs to be connected systematically with curriculum implementation, competency development, and institutional performance management.

Evaluation, Control, and Feedback Mechanisms

Both institutions employed evaluation and control mechanisms, including student evaluations of teaching (EDOM), tracer studies, employer feedback, curriculum reviews, accreditation processes, internal quality assurance, benchmarking, and institutional performance indicators. These mechanisms generated information about teaching quality, student experiences, graduate trajectories, and the relevance of educational programmes to industry requirements. Their existence provided an institutional basis for monitoring performance and identifying areas requiring improvement.

At Telkom University, evaluation involved programme quality targets, performance indicators, tracer studies, student feedback, and industry input. EDOM and student discussions provided information about teaching and learning experiences, while tracer studies and employer feedback offered perspectives on graduate readiness. These sources also helped identify competency areas requiring further development, particularly foreign-language proficiency, interpersonal communication, teamwork, and technological capabilities. Evaluation information was therefore relevant to both academic improvement and the assessment of graduate competitiveness.

At NHI Bandung Tourism Polytechnic, evaluation was connected to institutional and programme performance indicators, curriculum reviews, and feedback from industry stakeholders. Advisory mechanisms and professional stakeholder relationships provided opportunities to assess programme relevance and identify changing industry requirements. However, the use of evaluation information was not fully integrated across the institutional strategic cycle. Monitoring and reporting required stronger coordination, while the relationship between evaluation results and longer-term strategic adjustment remained limited.

The central issue in both institutions was not the absence of evaluation instruments but the extent to which the resulting information was consolidated, analysed, and used in institutional decision-making. Evaluation could function primarily as an administrative requirement rather than as a mechanism for strategic learning. Feedback also tended to support immediate programme correction, while its contribution to revising institutional priorities and anticipating future industry developments remained less systematic. These findings highlight the need to connect evaluation and control more closely with environmental scanning and strategy formulation.

The findings are relevant to the growing role of performance information in higher education governance. Beerkens (2021) discusses the evolution of performance data and its increasing significance in institutional governance, while Huisman &

Stensaker (2022) emphasise the relationship between performance governance and institutional management. The availability of performance data, however, does not automatically produce organisational learning. Feedback must be interpreted and incorporated into decisions about teaching, curriculum, and institutional improvement. Research on feedback literacy similarly highlights the importance of developing the capacity to understand and use feedback rather than treating it merely as information received (Nieminen & Carless, 2023). This perspective reinforces the need for an institutional feedback process that connects evaluation results with strategic adjustment.

Institutional Constraints and Strategic Responses

The comparison identified several institutional constraints affecting strategic management. These constraints involved resources and infrastructure, strategic integration, information and evaluation, and organisational adaptation. Although both institutions experienced challenges in connecting strategic planning with programme implementation, the specific forms of constraint reflected their respective institutional environments and organisational conditions.

At Telkom University, the main concerns included strengthening the integration of programme strategies with institutional and external priorities, improving the systematic use of quantitative environmental information, and addressing student competency gaps. Foreign-language proficiency and soft skills remained important areas for development. The integration of organisational culture and distinctive institutional capabilities into strategic planning also required further attention. These conditions affected the institution's capacity to translate environmental information into coordinated programme-level improvements.

At NHI Bandung Tourism Polytechnic, the constraints included limitations in learning infrastructure and practical equipment, restricted resources for certain off-campus activities, regulatory conditions, and challenges in adapting technology and strengthening internationalisation. These limitations affected the institution's ability to implement strategic priorities consistently and maintain the alignment of educational provision with changing industry requirements.

Across both cases, the findings identified four interconnected categories of constraints: resource and infrastructure limitations; incomplete alignment between institutional priorities, programme activities, and functional strategies; fragmented information and insufficient integration of evaluation results; and organisational adaptation challenges involving human resource capabilities, organisational culture, and responsiveness to industry changes. The strategic responses identified included strengthening human resources, improving digital infrastructure, expanding industry and international partnerships, developing data-based planning, and improving organisational coordination. Performance dashboards and more systematic monitoring were also identified as potential instruments for supporting continuous evaluation and strategic adjustment.

These constraints can be interpreted through the dynamic capabilities perspective, which emphasises the capacity to identify opportunities and threats,

mobilise resources, and reconfigure organisational capabilities in response to environmental changes (Guerrero & Menter, 2024; Heaton et al., 2023). Digital transformation also requires alignment between technological investment, leadership, and organisational strategy rather than the adoption of technology in isolation (AlNuaimi et al., 2022). In the Indonesian higher education context, quality assurance and institutional capacity remain important considerations in strengthening educational performance (Mu'alimin, 2026; Nugraha et al., 2023). The comparison therefore indicates that the constraints experienced by the two institutions are not merely operational problems; they also reflect the need to strengthen institutional capabilities and the integration of strategic processes.

The comparison reveals both institution-specific arrangements and shared strategic challenges. Telkom University's approach is characterised by SWOT-based environmental assessment, pentahelix engagement, curriculum benchmarking, and OBE-oriented learning activities. NHI Bandung Tourism Polytechnic demonstrates a more formal connection between institutional strategic planning, national tourism policy, advisory mechanisms, and professional stakeholders. These differences reflect the distinct institutional and policy arrangements within which the programmes operate. At the same time, both institutions have established curriculum development, practical learning, industry engagement, and quality assurance, while the integration of environmental information, strategic priorities, resource allocation, and evaluation remains uneven. The shared pattern provides the principal comparative basis for the proposed model, whereas the institution-specific practices demonstrate that its application must remain sensitive to organisational context.

Table 1. Comparative findings on strategic management practices at the two hospitality institutions

Strategic process	Telkom University	NHI Bandung Tourism Polytechnic	Comparative synthesis
Environmental scanning	Strategic situation analysis, SWOT, pentahelix engagement, and attention to digital and international competency requirements	Environmental assessment linked to national tourism policy, advisory boards, industry, alumni, and professional associations	Both institutions assess their environments, but systematic quantitative and data-informed analysis remains limited.
Strategy formulation	Curriculum benchmarking, ACCSTP and CATC references, OBE orientation, and industry collaboration	Institutional strategy aligned with national tourism policy, programme objectives, and industry competency requirements	Institutional and programme priorities are identifiable, while integration with functional strategies and resource planning remains uneven.

Strategy implementation	Project-based learning, capstone projects, internships, certification, digital learning, and industry engagement	Practical training, industry exposure, competency certification, and vocational curriculum implementation	Industry-oriented activities are implemented in both cases; resources and organisational coordination influence their consistency.
Evaluation and control	EDOM, tracer studies, quality targets, performance indicators, and employer feedback	Institutional and programme performance indicators, curriculum review, and stakeholder feedback	Evaluation instruments are available, but the use of results for strategic adjustment is not yet fully integrated.
Feedback and learning	Student, alumni, and industry input informs curriculum and learning improvements	Industry and stakeholder input supports programme relevance and institutional review	Feedback informs programme improvement, while its consolidation across the strategic cycle requires strengthening.

Source: Authors' synthesis of the comparative case findings.

Development of the Agile, Integrated System, and Techno-based Feedback Process Model

The comparative findings provided the basis for developing a hypothetical strategic management model for hospitality vocational higher education. The model addresses three recurring institutional concerns: responsiveness to environmental changes, coordination among institutional functions and programme activities, and the use of evaluation and stakeholder feedback in strategic adjustment. It retains the four principal processes of Wheelen et al. (2018)— environmental scanning, strategy formulation, strategy implementation, and evaluation and control—while introducing three interconnected characteristics that operate across the entire strategic cycle. The characteristics are conceptually distinct from the four processes: the processes describe what strategic management entails, whereas the characteristics explain how these processes can be connected and strengthened in the institutional context of hospitality vocational education.

The first characteristic, Agile Strategic Management, refers to the institutional capacity to recognise and respond to changes in the hospitality industry, technological developments, market expectations, and the wider policy environment. Agility involves continuous environmental scanning, timely interpretation of relevant information, coordinated decision-making, and the capacity to adjust programme and resource priorities while maintaining institutional direction. It therefore differs from ordinary responsiveness, which may involve an isolated reaction to an immediate issue, because agility connects sensing, decision-making, resource mobilisation, and adjustment

across the strategic cycle. This conceptualisation draws on Doz & Kosonen (2010) strategic agility perspective and research linking agility with environmental uncertainty and organisational performance (Ahammad et al., 2021; AlTaweel & Al-Hawary, 2021). Research on higher education institutions also indicates the relevance of strategic agility to institutional performance and competitive advantage (Chan & Muthuveloo, 2022; Rizki et al., 2023).

The second characteristic, Integrated System, concerns the coordination of strategic processes, organisational functions, institutional levels, and responsibilities. It connects institutional priorities with faculty and programme implementation while strengthening relationships among academic functions, administrative support, quality assurance, resource allocation, and industry engagement. Integration is therefore more than strategic alignment as a statement of common objectives: it concerns the organisational arrangements through which priorities are translated into coordinated activities and supported by resources. This component is consistent with research emphasising the relationship between strategic planning, performance management, and organisational alignment in higher education (Biondi & Russo, 2022; Kamilia et al., 2024). Dynamic capabilities provide a further basis for understanding how institutions integrate and reconfigure resources in response to changing environments (Heaton et al., 2023).

The third characteristic, Techno-based Feedback Process, emphasises the use of digital systems and information technologies to support monitoring, evaluation, stakeholder feedback, and organisational learning. Its distinctive function is informational: it supports the collection, consolidation, interpretation, and communication of performance information so that institutional decision-makers can identify gaps and consider strategic adjustments. This differs from Integrated System, which concerns the coordination of organisational responsibilities and activities. Potential instruments include integrated information systems, performance dashboards, digital tracer studies, industry data, and data analytics. These instruments are intended to improve the availability and use of performance information rather than to replace institutional judgement. This component reflects the importance of integrating digital transformation with institutional strategy and organisational processes (Hashim et al., 2022). Learning analytics and technology-supported feedback can also strengthen the use of educational information for institutional and learning improvement (Kleimola & Leppisaari, 2022; Sembey et al., 2024). Evidence from the hospitality sector further highlights the relationship between digital transformation, strategic learning, and organisational agility (Sungthong et al., 2025).

The model also requires institutional enablers, including policy commitment, supportive organisational structures, qualified human resources, strategic planning capacity, and appropriate resource allocation. These enablers are the organisational conditions that support the three characteristics rather than additional model features. Technology and information support constitute the technical infrastructure of the Techno-based Feedback Process, rather than a separate strategic characteristic. The intended educational output is the development of qualified and competitive graduates, while graduate absorption by the business and industry sector (Dunia Usaha dan Dunia Industri, DUDI) is positioned as an expected longer-term outcome. Feedback and organisational learning form a cross-cutting mechanism that connects evaluation

results and stakeholder input with strategic adjustment and renewed environmental scanning.

Table 2. Components and operational orientation of the hypothetical strategic management model

Model component	Main orientation	Operational implications and indicative dimensions
Agile Strategic Management	Institutional capability for sensing and responding to environmental and industry changes	Continuous environmental scanning; periodic review of industry and technology trends; documented adjustment of programme priorities; timeliness of strategic responses; mobilisation of resources in response to identified changes.
Integrated System	Coordination of strategic processes, organisational functions, and institutional levels	Alignment of institutional, faculty, and programme priorities; clarity of responsibilities; coordination among academic, administrative, quality assurance, and industry-engagement functions; linkage between strategic priorities and resource allocation.
Techno-based Feedback Process	Technology-supported monitoring, information consolidation, and organisational learning	Integration of student, alumni, employer, and programme information; availability and use of performance dashboards; regularity of tracer-study and stakeholder-feedback analysis; evidence that evaluation results inform decisions and subsequent strategic adjustments.
Institutional enablers	Organisational and resource conditions supporting model operation	Institutional commitment; supportive structures; qualified human resources; strategic planning capacity; and resource allocation.
Technology and information support	Technical infrastructure enabling feedback and information use	Monitoring infrastructure; reporting systems; industry information; integrated information systems; and analytical tools.
Output	Intended educational result	Qualified and competitive graduates, considered through technical and practical competencies, communication, foreign-language proficiency, adaptability, certification, and professional conduct.
Expected outcome	Longer-term labour-market result	Graduate absorption by the business and industry sector (DUDI), understood in relation to labour-market conditions and industry demand.

Feedback and organisational learning	Cross-cutting mechanism linking evaluation with subsequent strategic processes	Evaluation results and stakeholder input inform strategic adjustment and renewed environmental scanning; this mechanism is not an additional stage or an independent characteristic.

Source: Authors' synthesis and reconstruction of the hypothetical model.

An illustrative application can be drawn from the foreign-language proficiency gap identified in the comparative findings. Employer feedback indicating that graduates require stronger foreign-language proficiency would first be treated as an environmental signal and considered alongside industry expectations and existing graduate information. During strategy formulation, the institution could translate this signal into a programme-level competency priority and determine the required curriculum, lecturer-development, and learning-resource adjustments. The Integrated System would connect these decisions with responsibilities across programme management, academic units, quality assurance, and resource planning. During implementation, the programme could strengthen language learning through contextualised hospitality communication tasks and relevant industry exposure. The Techno-based Feedback Process would then consolidate student assessment, lecturer evaluation, tracer-study information, and employer feedback to examine whether the planned activities had been implemented and whether the identified competency gap had narrowed. This example illustrates a possible sequence within the proposed model; it is an operational scenario derived from the competency issue identified in the cases, not a claim that this complete intervention has already been implemented or evaluated.

The model's configuration is presented in Figure 1.

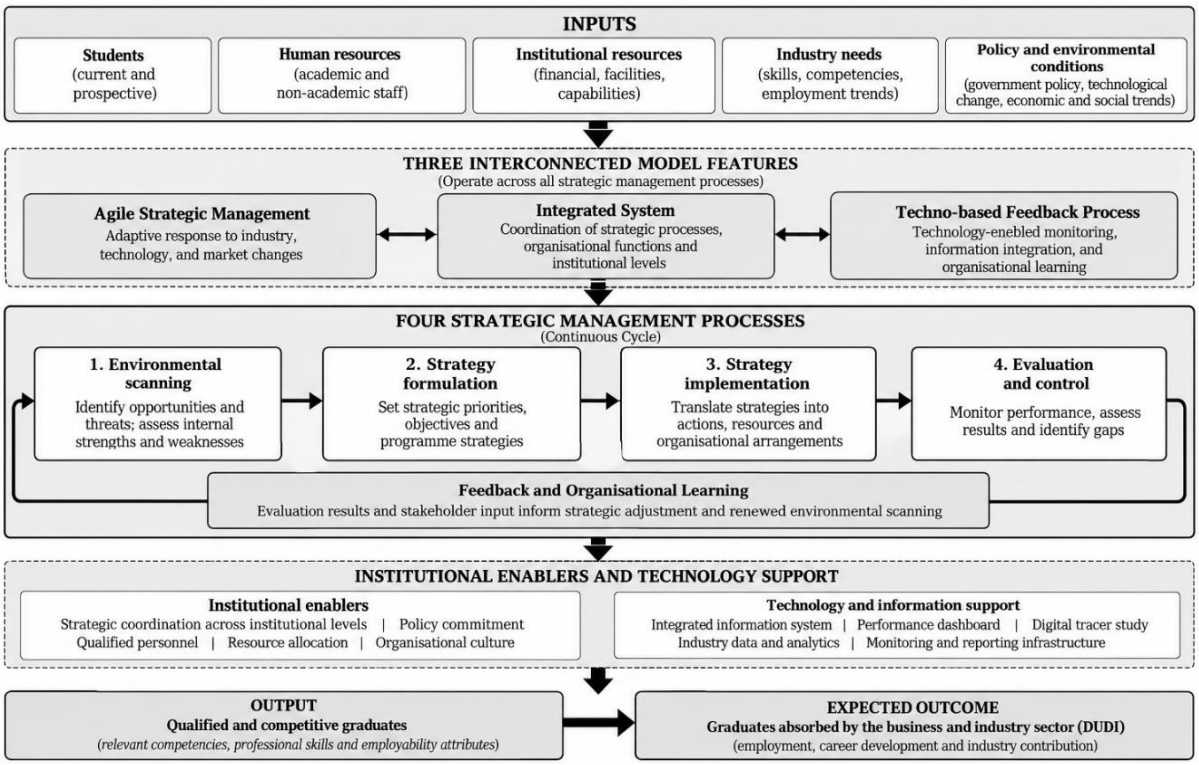


Figure 1. Agile, Integrated System, and Techno-based Feedback Process Model

Source: Authors' reconstruction based on the hypothetical model developed in the research.

Expert Assessment of the Hypothetical Model

The proposed model was reviewed by experts with backgrounds in strategic management, tourism policy, and industry practice. Their professional experience included strategic management in the telecommunications sector, strategic advisory work in tourism, and industry-based human resource development. The assessment considered the model's conceptual relevance, its relationship with industry requirements, and its potential application in higher education institutions.

The expert assessment supported the relevance of connecting institutional planning with industry developments through a more integrated strategic management configuration. Particular attention was given to the relationships among environmental analysis, strategic priorities, resource allocation, and performance evaluation. The three characteristics—agility, system integration, and technology-based feedback—were considered relevant to strengthening institutional responsiveness, coordination across organisational functions, and the use of information in strategic decision-making. These considerations are consistent with discussions of agile approaches to higher education planning and leadership (Barrett-Maitland et al., 2025; Ređep et al., 2026), as well as research on strategic agility and organisational learning in tourism and hospitality (Jasim et al., 2024).

The assessment informed the refinement of the model, particularly its emphasis on connecting institutional planning with programme implementation and performance evaluation. Expert consideration supports the conceptual relevance and practical plausibility of the proposed configuration, but it does not establish operational effectiveness or demonstrate improvements in graduate quality and competitiveness. The model therefore remains hypothetical and requires pilot implementation and subsequent evaluation under actual institutional conditions.

Analysis and Discussion

Strategic Agility as an Institutional Capacity for Responding to Industry Change

The findings indicate that environmental scanning in both institutions has not yet developed into a fully systematic process for anticipating changes in the hospitality industry. Although internal and external assessments have been conducted, the limited use of quantitative industry information and formal analytical instruments constrains the translation of environmental developments into institutional priorities. At Telkom University, SWOT-based analysis and pentahelix engagement provide channels for recognising internal conditions and stakeholder expectations, while NHI Bandung's strategic assessment is more formally connected with national tourism policy and industry stakeholders. These arrangements demonstrate that environmental awareness is present in both cases, although its analytical depth and systematic use in strategic decision-making remain uneven. Within the strategic management framework, environmental scanning provides the informational basis for identifying opportunities, threats, organisational strengths, and weaknesses before strategic decisions are formulated (Wheelen et al., 2018).

The proposed Agile Strategic Management feature addresses this limitation by positioning adaptability as an institutional capability operating across the strategic

management cycle. Agility does not refer simply to the speed of responding to external developments. It involves the capacity to recognise relevant changes, interpret their implications, mobilise organisational resources, coordinate decisions, and adjust strategies while maintaining alignment with long-term institutional objectives. This interpretation draws on Doz & Kosonen (2010) conceptualisation of strategic agility, particularly strategic sensitivity and coordinated organisational action. Subsequent research has associated strategic agility with responses to environmental uncertainty and organisational performance (Ahammad et al., 2021; AlTaweel & Al-Hawary, 2021). The cases illustrate the importance of moving from environmental awareness towards the systematic use of information in programme and institutional decisions.

This capacity is particularly important in hospitality education because technological developments, service expectations, and occupational competencies may change faster than conventional academic planning cycles. Martec's Law provides a useful explanation of the potential gap between the pace of technological development and organisational adaptation. The institutional challenge extends beyond introducing new technologies into teaching; it also involves adjusting curriculum priorities, staff competencies, resource allocation, and industry engagement. Research on digital transformation similarly emphasises the relationship between organisational leadership, digital strategy, and institutional agility (AlNuaimi et al., 2022). In higher education, dynamic capabilities provide a further explanation of how institutions identify environmental changes and reconfigure resources to sustain their relevance (Guerrero & Menter, 2024; Heaton et al., 2023). Strategic agility in the proposed model is consequently understood as a cross-cutting institutional capability rather than an additional stage in strategic management.

Integrated Systems and Strategic Alignment

The comparison reveals that strategic priorities do not always translate into coordinated institutional action. Both institutions have developed curriculum initiatives, industry partnerships, and competency development programmes, but their integration with human resource management, financial planning, technology investment, quality assurance, and programme-level implementation remains uneven. The specific expressions differ: Telkom University's approach includes institutional and faculty planning, curriculum benchmarking, and OBE-oriented programme activities, whereas NHI Bandung's planning is more directly connected with national tourism policy and advisory relationships. This condition illustrates the distinction between having strategic plans and possessing the organisational capacity to execute them.

The Integrated System feature addresses this problem by emphasising coordination among institutional levels, organisational functions, responsibilities, and strategic information. Integration does not simply mean combining administrative units or adopting a common information platform. It requires a connected management arrangement in which environmental information informs strategic priorities, institutional strategies are translated into programme-level plans, resources support implementation, and evaluation results guide subsequent decisions. Biondi & Russo (2022) demonstrate the importance of connecting strategic planning with performance management in universities. Kamilia et al. (2024) similarly identify execution capability as an important mechanism through which strategic alignment contributes to institutional performance. In this model, integration is principally organisational: it

defines who coordinates activities, how priorities are translated into action, and how resources are aligned with those priorities.

This integration is particularly relevant to vocational higher education because graduate preparation involves interdependent educational and organisational activities. Curriculum development, practical training, internships, professional certification, industry engagement, and interpersonal competency development cannot operate effectively as isolated initiatives. Their contribution depends on coordination between academic units, institutional management, quality assurance, and external stakeholders. Research on strategic management in higher education also highlights the complexity of coordinating institutional priorities and organisational responsibilities (Fumasoli & Hladchenko, 2023). From a dynamic capabilities perspective, integration further involves the mobilisation and reconfiguration of institutional resources to respond to changing demands (Heaton et al., 2023). The proposed feature therefore addresses fragmentation between strategic planning and programme implementation while strengthening institutional capacity to sustain educational relevance.

Technology-Based Feedback as an Infrastructure for Organisational Learning

The third feature, Techno-based Feedback Process, responds to limitations in monitoring, evaluation, information integration, and the use of stakeholder feedback. The findings show that both institutions have employed tracer studies, student evaluations, employer feedback, benchmarking, and internal quality assurance. These mechanisms provide information about educational performance and graduate preparation. However, the existence of multiple evaluation instruments does not necessarily establish an effective feedback process. Its strategic value depends on whether information is consolidated, interpreted against institutional objectives, and incorporated into subsequent decisions. Unlike the Integrated System, which concerns organisational coordination and responsibilities, the Techno-based Feedback Process concerns the information infrastructure and analytical process through which evidence becomes available for strategic learning.

This issue can be understood through the principles of continuous quality improvement. Deming (1986) emphasises systematic review and corrective action, while Feigenbaum (1991) places quality within an organisation-wide management responsibility. Both perspectives underline that quality improvement cannot depend solely on isolated inspection activities. Evaluation must be connected to the organisational processes that produce performance. In higher education, this requires information about graduate employment, employer assessments, learning outcomes, curriculum relevance, and educational services to inform institutional learning and strategic adjustment.

Technology can strengthen this process by providing infrastructure for collecting, integrating, analysing, and communicating institutional information. Its role should extend beyond digitising existing administrative procedures. Integrated information systems, data analytics, digital tracer studies, and performance dashboards may support the continuous monitoring of strategic indicators and comparison between institutional targets and implementation results. Research on higher education governance highlights the growing importance of performance data in institutional decision-making (Beerkens, 2022; Huisman & Stensaker, 2022). Digital transformation also requires the integration of technological resources with institutional strategy and

organisational processes (Hashim et al., 2022). Learning analytics and emerging assessment technologies provide further opportunities to use information for educational improvement (Kleimola & Leppisaari, 2022; Sembey et al., 2024; Syam et al., 2021).

The feedback mechanism in the proposed model is not a fifth stage added to the strategic management cycle. Rather, it connects evaluation and control with organisational learning and subsequent strategic adjustment. Information generated through monitoring and stakeholder feedback may lead to renewed environmental scanning, revised strategic priorities, changes in implementation, or adjustments to performance indicators. This arrangement preserves the four principal processes of Wheelen et al. (2018) while strengthening the institutional capacity to learn from internal performance and external developments. The model therefore treats technology as an enabling infrastructure for strategic learning, not as an independent solution to institutional management problems.

Implications for Graduate Quality and Competitiveness

The integration of strategic agility, institutional coordination, and technology-based feedback has implications for graduate quality because these characteristics connect institutional decision-making with the processes through which professional competencies are developed. The findings identify practical and technical competencies, foreign-language proficiency, communication, teamwork, service ethics, technological capabilities, and professional certification as relevant dimensions of hospitality graduate preparation. These are dimensions directly reflected in the comparative findings and should be distinguished from additional indicators that may be used in future evaluation. The proposed model does not measure changes in these competencies; rather, it provides an institutional configuration through which educational processes addressing them may be coordinated and reviewed. This perspective is consistent with research identifying transversal competencies as important elements of graduate employability (García-Álvarez et al., 2022). Studies on vocational education also emphasise the need to strengthen the relationship between educational provision and workplace requirements (Majid et al., 2024; Wibowo et al., 2022).

The proposed model positions qualified and competitive graduates as its intended educational output. Graduate quality concerns the competencies developed through educational processes, while graduate competitiveness concerns the relevance of those competencies to occupational standards and changing industry expectations. Technical skills, practical performance, communication, foreign-language proficiency, adaptability, professional certification, and service ethics are relevant dimensions in the hospitality context. Graduate employability concerns the capacity to obtain and sustain employment, whereas actual absorption by DUDI represents a longer-term labour-market outcome. Employment opportunities are also influenced by recruitment practices, economic developments, and industry demand. The model consequently addresses institutional processes that contribute to graduate preparation and industry relevance without attributing all employment variations to higher education institutions.

Theoretical Contribution and Further Model Development

The principal theoretical contribution of this study lies in configuring strategic agility, institutional integration, and technology-based feedback within the four-process strategic management framework of Wheelen et al. (2018). The proposed model does not replace environmental scanning, strategy formulation, strategy implementation, or evaluation and control. Instead, it specifies three interconnected characteristics that strengthen the relationships among these established processes. Strategic agility concerns the institutional capacity to sense and respond to environmental change; Integrated System concerns the organisational coordination through which strategic priorities are translated into programme activities and supported by resources; and Techno-based Feedback Process concerns the technological and analytical mechanisms through which monitoring and stakeholder information inform organisational learning. Their functions are distinct but interdependent: agility requires coordinated action, integration requires relevant information, and feedback becomes strategically meaningful when it informs decisions and subsequent adjustment.

The model brings together perspectives that are often examined separately. Strategic agility explains the capacity to respond to environmental change (Doz & Kosonen, 2010), while dynamic capabilities provide a basis for understanding how institutions mobilise and reconfigure resources in response to changing conditions (Guerrero & Menter, 2024; Heaton et al., 2023). Institutional integration addresses the relationship between strategic planning, organisational alignment, and execution (Biondi & Russo, 2022; Kamilia et al., 2024), while technology-based feedback connects performance information with organisational learning and continuous improvement (Beerkens, 2022; Hashim et al., 2022). The contribution is not to claim that these concepts are individually new, but to configure them as complementary institutional characteristics operating across the strategic management cycle in hospitality vocational higher education.

The expert assessment provides a basis for considering the conceptual relevance and practical plausibility of the proposed configuration. It does not establish operational effectiveness or demonstrate improvements in graduate quality, competitiveness, or employment outcomes. The model remains hypothetical and requires further examination through institutional implementation. Subsequent research should investigate its compatibility with existing governance arrangements, the organisational and technological capacities required for implementation, and the extent to which its application improves the consistency of strategic decision-making. Longitudinal evaluation will also be necessary to examine whether changes in institutional management processes are associated with developments in graduate competencies and employment outcomes.

CONCLUSION

This study identified strategic management practices in two hospitality vocational higher education institutions: Telkom University and NHI Bandung Tourism Polytechnic. The comparative findings indicate that both institutions have established initiatives in curriculum development, practical learning, industry collaboration, internships, professional certification, and quality assurance. However, their approaches differ in connecting institutional planning with environmental

assessment, national policy, industry stakeholders, and programme-level implementation. A common challenge is the integration of environmental information, strategic priorities, organisational resources, implementation, and evaluation into a continuous management process.

Based on these empirical findings and expert assessment, the study proposes the Agile, Integrated System, and Techno-based Feedback Process Model. The model synthesises three complementary institutional characteristics: strategic agility enables responsiveness to environmental change; Integrated System connects strategic priorities with organisational functions and programme implementation; and Techno-based Feedback Process supports monitoring, information consolidation, and organisational learning. Together, these characteristics are intended to strengthen institutional strategic management and support the development of qualified and competitive graduates. However, the model remains conceptual and has not been implemented or empirically tested; therefore, its effectiveness in improving graduate quality, competitiveness, or employment outcomes cannot yet be established.

This study is limited by its qualitative design, its focus on two institutions and three study programmes, and the absence of empirical testing through model implementation. Future research should undertake pilot implementation in hospitality vocational institutions with different organisational and resource conditions, develop and validate operational indicators for the three model characteristics, and examine the coordination and feedback mechanisms in practice. Longitudinal evaluation is also needed to investigate the relationship between changes in institutional strategic management, graduate competencies, industry relevance, employability, and employment outcomes.

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