

cdc861fc5ceae2e0_Turnitin

By By Turnitin

WORD COUNT

3681

TIME SUBMITTED

25-MAY-2026 10:43AM

PAPER ID

121760243

Strategic Planning for Information Systems at CV. Fancy Using the Ward and Peppard Method

Nova Indrayana Yusman¹, Muhamad Furqon², Rasyaa Nabilah³

^{1,3} Sistem Informasi, Universitas Ma'soem
² Komputerisasi Akuntansi, Universitas Ma'soem

Article Info

Article history:

Received month dd, yyyy
Revised month dd, yyyy
Accepted month dd, yyyy

Keywords:

Information Systems Planning
Micro-distributor
Ward and Peppard
McFarlan Strategic Grid
Digital Transformation

ABSTRACT

Food distributors serving large retail chains face a dilemma that is easy to overlook: the reporting standards and system integration requirements imposed by corporate clients are essentially the same whether the supplier is a large logistics company or a two-person warehouse operation. CV. Fancy, a registered food distributor (NIB 0702250134384) based in Bandung, West Java, occupies exactly this position. The company supplies Alfamidi retail outlets and PT. Primafood manufacturing under long-standing contracts, yet its day-to-day operations remain entirely dependent on spreadsheets and mobile messaging. This paper reports a strategic information systems (IS) planning study carried out at CV. Fancy using the Ward and Peppard framework, with the aim of producing a practical IS/IT roadmap for the period 2026 to 2030. Data were gathered through in-depth interviews and direct observation during the first quarter of 2026. The analysis drew on Porter's Value Chain, SWOT, PEST, Porter's Five Forces, and the McFarlan Strategic Grid. The principal finding is that Cloud Warehouse Management System (WMS) and Order Management System (OMS) warrant immediate investment, as both fall in the Key Operational quadrant of the McFarlan Grid and directly address the operational gaps most likely to put existing contracts at risk. API integration with Alfamidi is identified as the medium-term priority that will determine the company's ability to retain and grow its enterprise client base. The phased roadmap developed from these findings offers a financially realistic path to digital capability for small distributors whose IT budgets are modest but whose clients expect enterprise-level performance.

1

This is an open access article under the [CC BY-SA](#) license.



Corresponding Author:

Muhamad Furqon
Universitas Ma'soem,
Jl. Raya Cipacing No.22 Jatinangor – Sumedang, Jawa Barat , Indonesia
Email: mfurqon.mkom@gmail.com

1. INTRODUCTION

Running a small distribution business that supplies a national retail chain is not straightforward. The moment a company like CV. Fancy signs a contract with Alfamidi, it steps into a world of delivery deadlines, stock reporting obligations, and data-sharing requirements that were designed with much larger suppliers in mind. CV. Fancy is a food distributor registered under NIB 0702250134384 (KBLI 46900), operating from Jl. Kacapiring No. 73/122 in Bandung, West Java. It distributes products sourced from PT. Primafood to Alfamidi retail outlets under contracts that have remained stable over several years. The challenge the company now faces is not commercial its client relationships are solid but operational. Its information infrastructure has not kept pace with what those clients now expect [1].

When the research team visited CV. Fancy in February 2026, it became clear that the entire operation ran on Microsoft Excel and WhatsApp. Inventory records were updated manually, delivery confirmations were sent as photographs of handwritten notes, and there was no mechanism for generating the kind of automated stock or sales reports that Alfamidi has begun requiring from its distribution partners. The situation is not unusual for micro-enterprises of this scale, but it carries real risk: a single unfulfilled delivery or a missed reporting deadline can trigger a contract review. Without a deliberate plan for building IS/IT capability, any technology spending the company undertakes will be reactive rather than strategic [2].

The Ward and Peppard strategic IS planning framework [3] offers a structured way to move from this reactive posture to a planned one. Rather than starting with technology and working backwards, the approach begins with the business environment what the company does, where it competes, and what pressures it faces and derives IS/IT requirements from that analysis. The output is a portfolio of prioritised applications and a roadmap for implementation, grounded in a clear understanding of which investments support current operations and which are intended to create future competitive advantage. This alignment between business strategy and IS/IT investment is precisely what CV. Fancy currently lacks

Ward and Peppard is not a new framework, and it has been applied in quite varied settings. Yusman et al. [1] used it at PT. Niasa, a food processing company, and found that working through the Value Chain stage-by-stage was the most effective way to expose where the real operational bottlenecks lay. Oktaviana and Widhiarso [2] applied the method to a Palembang-based distributor and noted that the Five Forces analysis produced sharper competitive insight than SWOT alone. Asterina and Maharani [4] used it more recently in the printing sector, where the focus shifted to identifying which digital initiatives could meaningfully reduce production overhead. What is missing from this body of work is a study of distributors that are small in size but embedded in enterprise supply chains a configuration that generates a specific set of IS/IT challenges that neither standard MSME research nor large-firm IS planning literature adequately addresses.

This paper attempts to fill that gap. Two aspects of the study are worth flagging at the outset. The first is the inclusion of OSS-RBA (Online Single Submission, Risk-Based Approach) regulatory compliance in the PEST analysis, which is often omitted from IS planning studies but is materially relevant for formally registered Indonesian businesses. The second is a deliberate preference for SaaS delivery models throughout the IS/IT strategy, which reflects the capital expenditure constraints that define investment decisions at this scale [5]. The central research question is: what IS/IT strategic plan, developed through the Ward and Peppard method, would allow CV. Fancy to address its operational vulnerabilities and strengthen its position as a supplier to enterprise retail clients?

2. METHOD

The study used a descriptive qualitative design. Fieldwork was conducted at CV. Fancy between February and April 2026. The primary data came from semi-structured interviews with the owner and three operational staff covering warehouse operations, order fulfilment, and supplier relations, alongside extended observation of the daily workflows in each of those areas. Company documents delivery records, inventory logs, and supplier correspondence were reviewed to corroborate what emerged from the interviews. Secondary data were drawn from the IS planning literature and from Indonesian regulatory and statistical sources.

Analysis was structured around the three layers of the Ward and Peppard framework [3]. The first layer, the input stage, encompasses the internal and external business environment as well as the existing IS/IT landscape. The second layer translates findings from the first into three interlocking strategies: an IS business strategy (what the business needs from IS/IT), an IT strategy (what technology is required to deliver it), and an IS/IT management strategy (how those investments will be governed and sustained). The third layer produces the outputs: a future application portfolio and an implementation roadmap. Table 1 sets out the analytical instruments used at each stage.

Table 1. Analytical Stages and Instruments — Ward and Peppard Framework

Stage	Analytical Tool(s)	Purpose
Internal Business Input	Value Chain Analysis; SWOT	Identify internal strengths, weaknesses, and value-adding activities
External Business Input	PEST Analysis; Porter's Five Forces	Identify macro-environmental factors and competitive dynamics
IS/IT Environment Input	Current systems audit; technology benchmarking	Map existing IS/IT capability against available and emerging technology options
Strategy Formulation	Synthesis of input findings	Derive IS business, IT, and IS/IT management strategies
Output	McFarlan Strategic Grid; Implementation Roadmap	Produce a prioritised application portfolio and five-year implementation plan

Interview data were coded thematically and mapped onto the Ward and Peppard input categories before being taken through each analytical instrument in sequence. Portfolio classification followed the

McFarlan Strategic Grid [6], which locates applications along two dimensions their current operational importance and their potential future strategic value generating four categories: Strategic, Key Operational, High Potential, and Support. Classifications were validated against the combined body of interview data and observational notes rather than based on any single data point

3. RESULTS AND DISCUSSION

3.1. Internal Business Environment Analysis

3.1.1. Value Chain Analysis

Porter's Value Chain [7] divides organisational activities into those that directly create and deliver a product or service (primary activities) and those that support that delivery (support activities). Figure 1 presents the completed chain for CV. Fancy. The picture that emerges is of a company that manages its primary activities reliably enough to keep its clients reasonably satisfied, but whose supporting infrastructure is too thin to sustain that performance as client expectations grow.

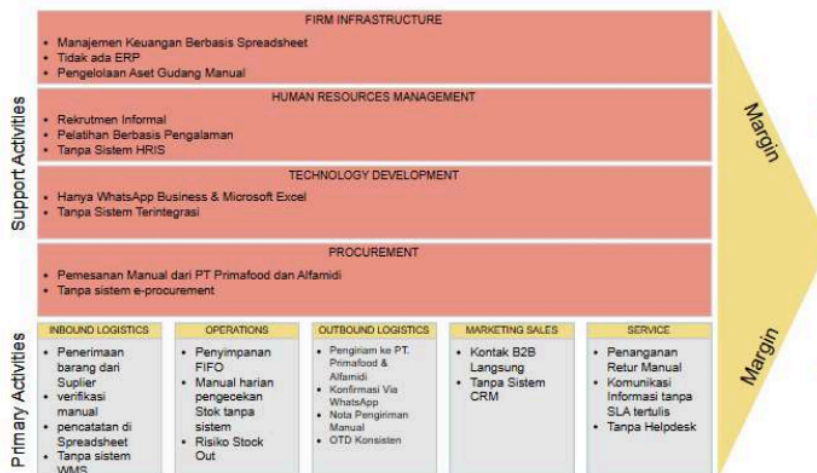


Figure 1. Value Chain Analysis of CV. Fancy [7]

The most exposed point in the primary activities is Warehouse Operations. Without a warehouse management system, stock levels are known only at the time of the most recent physical count. In practice, this means the data recorded in the Excel inventory file may already be hours or days out of date when a delivery order arrives. For a company supplying a retailer that operates on tight shelf-replenishment cycles, this is a material risk. Inbound Logistics from PT. Primafood compounds the problem: goods are received, checked, and recorded through a purely manual process, which means any counting error at the receiving stage propagates through the entire inventory record until the next physical count catches it. Outbound Logistics to Alfamidi is handled via WhatsApp and handwritten delivery notes functional for now, but incompatible with the electronic proof-of-delivery and automated reconciliation processes that modern retail procurement systems increasingly require [1].

In the support layer, the gaps are equally significant. The company has no dedicated IT staff and no IS budget line. Its procurement relationship with PT. Primafood is managed through periodic phone calls and ad hoc orders, with no system for generating automatic replenishment signals when stock falls below threshold. HR management is informal. None of these deficiencies is unusual for a company of this size, but each one limits what CV. Fancy can do operationally, and they tend to interact: the lack of accurate stock data makes it harder to time orders correctly, which in turn makes it harder to maintain the delivery reliability that keeps clients satisfied.

3.1.2. SWOT Analysis

Table 2 summarises the strengths, weaknesses, opportunities, and threats identified through the interviews and observation [8].

Table 2. SWOT Matrix

STRENGTHS	WEAKNESSES
S1. Established contracts with Alfamidi and PT. Primafood provide a stable revenue base S2. Location in Bandung gives proximity to major West Java distribution infrastructure S3. Small size is an operational asset - decisions are made quickly and adjusted without delay S4. On-time delivery has been consistently maintained, which is the most visible measure of reliability for retail clients	W1. Inventory is tracked in disconnected spreadsheets with no live visibility into stock levels W2. No IT staff and no structured IS capability - technology decisions are made on a case-by-case basis W3. Alfamidi receives no automated reporting; all data sharing is manual and reactive W4. Operationally critical coordination relies on WhatsApp - fast but unstructured and unauditible
OPPORTUNITIES	THREATS
O1. SaaS cloud WMS products now exist at price points accessible to small distributors, with no upfront hardware investment O2. Government MSME digitisation programmes and KUR credit at 6% p.a. provide financing options for IS investment O3. A proven delivery track record with Alfamidi could be leveraged to win contracts with other national retailers (Indomaret, Superindo) O4. Indonesian e-grocery platforms are building API connectivity, opening a channel for automated order processing	T1. Alfamidi is tightening its supplier data requirements; distributors that cannot provide electronic documentation risk being displaced T2. Larger regional distributors have invested in WMS and analytics, and can offer clients more transparent supply chain visibility T3. Food price inflation at 4.2% (BPS, 2025) squeezes margins and makes operational inefficiencies more costly T4. Without a proper FIFO system, products risk expiring before shipment, particularly during seasonal demand troughs

3.2. External Business Environment Analysis

The PEST analysis [9] picked up several environmental factors worth flagging. On the regulatory side, the OSS-RBA framework now requires formally registered businesses to maintain digital compliance records, which creates an administrative incentive for CV. Fancy to move away from paper-based documentation. Economic conditions are mixed: food price inflation of 4.2% (BPS, 2025) is squeezing distribution margins, but the availability of KUR credit at subsidised rates means that IS investment does not necessarily have to wait for retained earnings. Post-pandemic growth in packaged food consumption has kept volumes up, which is good for revenue but adds strain to a manual warehouse system already operating near capacity [5].

The Five Forces analysis [7] produced a clearer picture of where the real competitive pressure lies. Buyer power meaning Alfamidi's leverage over CV. Fancy is high and growing. Alfamidi is rolling out EDI-based procurement across its supplier base, and distributors that cannot connect electronically will find themselves at a contractual disadvantage regardless of their physical delivery performance. Supplier power from PT. Primafood is more contained; the relationship is longstanding and cooperative, though the company's dependence on a single main supplier is itself a latent vulnerability. New entrants are not an immediate threat the relationship capital CV. Fancy has built up with Alfamidi takes time to replicate but competitive rivalry among established distributors is intensifying, particularly as the larger players deploy analytics and demand forecasting tools that allow them to manage inventory far more efficiently than a spreadsheet-dependent operation ever could.

3.3. IS/IT Portfolio Mapping: McFarlan Strategic Grid

The McFarlan Strategic Grid [6] was used to classify the IS/IT applications identified through the analysis into four categories. Figure 2 present the resulting portfolio. The classification reflects both the operational situation observed in the field and the strategic direction indicated by the business environment analysis.

Table 3. McFarlan Strategic Grid CV. Fancy IS/IT Application Portfolio

Future Strategic Impact	High	HIGH POTENTIAL <ul style="list-style-type: none"> IoT temperature & Humidity Monitoring (Warehouse) Driver Mobile App with GPS B2B Ordering Chatboot 	STRETEGIC <ul style="list-style-type: none"> API/EDI integration with Alfamidi & PT. Primafood Deman Forecasting Analytics Palatform Suplier Integration Portal
	Low	SUPPORT <ul style="list-style-type: none"> Payroll & HR Management System Formal Internal Communication Platform Automated Cloud Backup System 	KEY OPERATIONAL <ul style="list-style-type: none"> Cloud WMS Order Managing System (OMS) Integrated Accounting System
		Low	High
Current Operational Impact			

Cloud WMS and OMS sit in Key Operational because they address problems that exist right now and are already creating operational risk. Without reliable stock data and a structured order management process, CV. Fancy is one bad week away from a delivery failure that could trigger a contract review. This finding is consistent with what Yusman et al. [1] observed at PT. Niasa: getting the inventory layer right is not optional, it is the precondition for everything else. API/EDI integration with Alfamidi is classified as Strategic rather than Key Operational because it is not yet causing immediate failures Alfamidi still tolerates manual communication for now but it will become a hard requirement over the medium term, and companies that have already built that integration will be better positioned when the deadline arrives [2].

The High Potential quadrant holds applications that are technically feasible today but whose business case depends on having the Key Operational foundations in place first. IoT temperature monitoring, for instance, makes sense once stock records are accurate enough to act on them; a GPS-enabled driver application adds value once order management is systematic enough to give drivers reliable instructions. The Support applications payroll, internal communication, automated backup are necessary but unremarkable, and should be implemented using commodity tools with minimal ongoing management overhead.

3.4. IS/IT Implementation Roadmap 2026–2030

Table 4 presents the implementation roadmap across three phases. The phasing reflects a deliberate choice to tackle the most urgent operational problems first and build toward more sophisticated capabilities once the foundational systems are stable.

Table 4. IS/IT Implementation Roadmap

Phase	Period	Key Programs	KPI Target
Phase 1: Digital Foundation	2026 Q3–Q4	Cloud WMS and OMS deployment; online accounting system (Accurate/Mekari); IS/IT staff training; SOP documentation	Inventory accuracy 95%; order processing time reduced by 40%
Phase 2: Operational Integration	2027–2028	API/EDI integration with Alfamidi & Primafood; Supplier Portal B2B reporting dashboard Driver mobile application with GPS; End-to-end WMS–OMS Accounting integration; regulatory compliance audit	On-time delivery 98%; manual data entry reduced by 80%; real-time reporting operational
Phase 3: Strategic Advantage	2029–2030	IoT warehouse monitoring; B2B ordering chatbot; New enterprise retail partner expansion; COBIT 2019 governance review	Stock-out incidents reduced by 90%; two new enterprise partners onboarded; IS/IT ROI positive

Phase 1 is deliberately narrow. The only way to get a small company to actually implement a new system is to make the scope manageable, and the two systems in this phase WMS and OMS are the ones where the operational case is clearest and most urgent. Both are specified as SaaS deployments. Mell and Grance [5] characterise cloud computing's core advantage as on-demand access to scalable resources without significant upfront commitment, and that is exactly the right model for a company that cannot afford a large capital outlay on technology it has not yet learned to use. Entry-level SaaS subscriptions can be expanded as the business grows and as staff become more confident users.

Phase 2 is where the company stops managing its client relationships manually and starts operating as an integrated node in Alfamidi's supply chain. The API/EDI connection is the centrepiece of this phase: once it is in place, order data flows electronically, delivery confirmations are generated automatically, and Alfamidi's procurement system can see CV. Fancy's stock levels in something approaching real time. The Supplier Portal with PT. Primafood complements this by enabling replenishment orders to be triggered by stock data rather than by a phone call. Subiyakto et al. [10] make the point that IS implementation in resource-limited organisations works best when each phase is small enough to be absorbed before the next begins Phase 2 is designed on exactly that principle, building directly on the data infrastructure established in Phase 1.

Phase 3 is where the longer-term strategic investments become viable. Demand forecasting requires historical transaction data before it can generate useful predictions; that data will only exist once Phases 1 and 2 have been running for a year or two. IoT warehouse monitoring is most useful when the stock system is accurate enough to act on temperature alerts promptly. The expansion to Indomaret and Superindo becomes a realistic commercial target rather than an aspiration once CV. Fancy can demonstrate, through its Alfamidi integration, that it has the systems to meet enterprise reporting requirements. None of these Phase 3 investments makes sense before the foundations are in place, which is exactly why they are sequenced last.

4. CONCLUSION

CV. Fancy faces a problem that is common among small distributors embedded in large-retailer supply chains but rarely examined directly in the IS planning literature: the company must meet enterprise-level operational and data standards while working within micro-enterprise constraints. This study used the Ward and Peppard framework to analyse that situation systematically and produce a five-year IS/IT roadmap grounded in what the business actually needs rather than in what technology is currently fashionable.

Three findings stand out. First, the company's most pressing vulnerability is the combination of manual inventory management and the absence of any structured order management process. These are not just internal inefficiencies they are the exact weaknesses that Alfamidi's evolving supplier requirements will expose. Second, Cloud WMS and OMS are the highest-priority investments. The McFarlan analysis places both firmly in the Key Operational quadrant, meaning they need to be in place before any other IS initiative can realistically proceed. Third, the API integration with Alfamidi is the medium-term investment that will determine whether the company grows or stagnates. Winning new enterprise clients on the strength of a manual operation is possible in the short run; sustaining those relationships as client expectations rise is not.

The three-phase roadmap Digital Foundation (2026), Operational Integration (2027–2028), and Strategic Advantage (2029–2030) is built around the constraints that actually govern IS investment at this scale. Phase 1 keeps scope tight and relies on SaaS to avoid capital expenditure. Phase 2 builds integration capability on top of a functioning operational foundation. Phase 3 pursues strategic applications that only become viable once the data they depend on has been generated and validated over time. For practitioners, the roadmap offers a model that other small distributors in similar positions could adapt. For researchers, the study contributes a detailed case of IS planning in the under-examined micro-distributor / enterprise-client context. Future work should include a post-implementation assessment of the Phase 1 deployments and a longitudinal study of whether the API integration materially affects CV. Fancy's competitive standing within its client network.

ACKNOWLEDGEMENTS

This research was funded by Universitas Ma'soem under Rector Decree No. 137/SK-MU/XII/2025, Research Funding for Permanent Lecturers, PDP-MU Scheme, Even Semester 2026. The authors thank the owner and staff of CV. Fancy for their time and candour throughout the data collection process.

REFERENCES

- [1] N. I. Y. Yusman, M. Furqon, and D. Fauzul Hakim, "Penerapan Kerangka Ward dan Peppard untuk Perencanaan Strategi Sistem Informasi Terintegrasi," *INTERNAL (Information System Journal)*, vol. 8, no. 2, pp. 158–167, Dec. 2025, doi: 10.32627/INTERNAL.V8I2.1743.

- [2] V. Oktaviana and W. Widhiarso, "Perencanaan Strategis SI Menggunakan Metode Ward and Peppard pada Perusahaan Distribusi Palembang," *MDP Student Conference*, vol. 2, no. 1, pp. 624–629, Apr. 2023, doi: 10.35957/MDP-SC.V2I1.4489.
- [3] J. Ward and J. Peppard, *Strategic Planning for Information Systems (3rd Edition)*. 2002.
- [4] E. M. Asterina and A. N. K. Maharani, "Perencanaan Strategis Sistem Informasi Menggunakan Metode Ward & Peppard: (Studi Kasus: CV Prima Puspasari)," *Saturnus: Jurnal Teknologi dan Sistem Informasi*, vol. 4, no. 1, pp. 46–54, Jan. 2026, doi: 10.61132/SATURNUS.V4I1.1380.
- [5] P. Mell and T. Grance, "The NIST Definition of Cloud Computing," 2011, doi: 10.6028/NIST.SP.800-145.
- [6] F. W. Mcfarlan, "Information technology changes the way you compete." Accessed: May 25, 2026. [Online]. Available: https://openlibrary.org/books/OL19262316M/Information_technology_changes_the_way_you_comp_ete
- [7] M. E. Porter, "Competitive Advantage: Creating and Sustaining Superior Performance," 1985. [Online]. Available: <https://api.semanticscholar.org/CorpusID:102339835>
- [8] T. L. Wheelen and J. D. Hunger, *Strategic Management and Business Policy: Toward Global Sustainability*, 13th ed. Pearson Education, 2011.
- [9] F. J. Anguilar, *Scanning the Business Environment*. Macmillan, 1967.
- [10] A. Subiyakto, A. R. Ahlan, M. Kartiwi, and H. T. Sukmana, "Measurement of Information System Project Success Based on Perceptions of the Internal Stakeholders," *International Journal of Electrical and Computer Engineering (IJECE)*, vol. 5, no. 2, pp. 271–279, Apr. 2015, doi: 10.11591/ijece.v5i2.pp271-279.

3%

SIMILARITY INDEX

PRIMARY SOURCES

- | | | |
|----------|---|----------------------|
| 1 | journal.genintelektual.id
Internet | 74 words — 2% |
| 2 | Fajar Praya, Tanti Utami, Aji Mulyana.
"Implementation of Government Regulation in
Granting Risk-Based Business Licensing at Private Job Training
Institutions", Indonesian Journal of Public Administration
Review, 2025
Crossref | 19 words — 1% |
-

EXCLUDE QUOTES ON

EXCLUDE SOURCES < 1%

EXCLUDE BIBLIOGRAPHY ON

EXCLUDE MATCHES OFF