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Digital Transformation Disclosure, Marketing Intensity, and Financial Performance: Evidence from Indonesian State-Owned Pharmaceutical Cases

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Abstract: Corporate reports increasingly connect digital transformation with commercial and financial improvement, although disclosed initiatives do not establish their economic contribution. This study examines digital transformation disclosure, selling expense intensity and financial performance in two nested Indonesian state owned pharmaceutical cases. A longitudinal documentary comparison uses public reports covering 2021–2025, with financial comparisons concentrated on the latest comparable figures for 2023–2025. In 2025, Kimia Farma’s selling expense ratio fell from 22.80 to 19.67 percent and its net loss margin narrowed from 12.16 to 4.81 percent despite declining revenue. Phapros’ ratio fell from 49.83 to 30.74 percent, while revenue recovered and its net margin became positive. Both reports describe digital initiatives, but neither provides attribution sufficient to link those initiatives to the financial changes. An exact decomposition shows that lower expenditure and changing revenue denominators contributed differently to the two expense ratios. The contribution is a reproducible distinction between disclosed transformation, selling cost intensity and realised financial outcomes. The findings support a cautious interpretation of annual report based digital measures rather than a causal performance claim.

Keywords: Digital Transformation Disclosure, Selling Expense Intensity, Financial Performance, Pharmaceutical Companies, Documentary Analysis.

INTRODUCTION

The financial meaning of digital transformation is difficult to establish when a company’s annual report describes new systems more precisely than the outcomes those systems produce. This problem is especially visible in pharmaceutical groups, where manufacturing, distribution and retail activities are combined and where a change in selling expenditure can reflect logistics, salaries, property costs or promotional activity. This article asks how disclosed digital transformation and selling expense intensity should be interpreted alongside financial performance when the reporting perimeter and financial statement comparatives require care.

Its contribution is a measurement sensitive comparison of Kimia Farma and its subsidiary Phapros rather than an industry wide estimate of a digital transformation effect.

Digital transformation involves changes in organisational arrangements and value creation as well as the adoption of technology. Reviews distinguish this process from the narrower conversion of information into digital form and show why its consequences depend on strategy, organisational design and the environment (Vial, 2019; Verhoef et al., 2021; Hanelt et al., 2021; Gong & Ribiere, 2021; Nadkarni & Prügl, 2021; Kraus et al., 2021; Kraus et al., 2022). The distinction matters for corporate reporting: describing an application is evidence of disclosure, but it does not establish the application's use, quality or financial contribution.

The resource based view explains why a purchased system does not automatically generate an advantage. Complementary skills, routines and organisational assets shape the use of technological resources (Barney, 1991; Bharadwaj, 2000; Wade & Hulland, 2004; Melville et al., 2004). Dynamic capabilities provide a related account of how firms identify opportunities and reconfigure resources (Teece et al., 1997; Teece, 2007). Information systems research also distinguishes system quality and information quality from organisational learning and strategic integration (DeLone & McLean, 2003; Tippins & Sohi, 2003; Bharadwaj et al., 2013). These distinctions require a reporting measure to be narrower than the capability it is intended to represent.

Marketing research connects market orientation and marketing capabilities to performance, while financial approaches examine how market based assets and advertising expenditure may enter shareholder value (Morgan et al., 2009; Morgan, 2012; Srivastava et al., 1998; Joshi & Hanssens, 2010). In digital settings, social media strategy, content, analytics and customer value creation provide different pathways rather than a single marketing expenditure mechanism (Dwivedi et al., 2021; Li et al., 2021; Hollebeek & Macky, 2019; Saura, 2021; Matarazzo et al., 2021; Ritter & Pedersen, 2020). Selling expenses therefore cannot be treated as a direct measure of digital marketing capability.

Evidence on analytics and artificial intelligence reinforces the need to measure resources and their organisational deployment separately. Reviews and capability studies address the processes through which information is converted into operational choices (Collins et al., 2021; Mikalef & Gupta, 2021; Mikalef et al., 2020; Wamba et al., 2017). A pharmaceutical firm can describe a digital infrastructure while leaving the extent of data integration, managerial adoption and customer conversion unreported. Pharmaceutical innovation also carries development costs and long lead times, making a contemporaneous revenue comparison a limited representation of the innovation process (DiMasi et al., 2016).

Indonesian studies help locate the analysis in its commercial and accounting setting. Research on over the counter medicines examines consumer responses to halal labels, brands and prices; it does not estimate the financial return to digital transformation (Ismail et al., 2022). Work on impairment allowances in state owned pharmaceutical firms highlights a separate financial reporting issue (Sova et al., 2023). A recent study of online reviews, website quality and trust provides consumer level evidence about purchasing mechanisms, rather than a transferable firm level coefficient (Ismail et al., 2026). These three studies motivate attention to trust, product signals and reporting quality without supplying observations for the present cases.

METHODS

The study is an exploratory longitudinal documentary comparison, conducted from publicly accessible reports retrieved on 2 October 2026. Kimia Farma and Phapros are purposively selected because their reports contain financial statements, technology narratives, product information and share trading summaries. Phapros is consolidated within Kimia Farma; the cases are analytically nested and are never pooled as independent firms. Bio Farma and Indofarma are outside the analysed corpus. The design follows document analysis and case

based theory development, with literature used as an interpretive framework rather than presented as a systematic review (Bowen, 2009; Eisenhardt, 1989; Eisenhardt & Graebner, 2007).

The archive includes Kimia Farma's 2021, 2022, 2023 and 2025 annual reports, its reissued 2023 financial statements, and Phapros' 2021, 2022, 2024 and 2025 reports (PT Kimia Farma Tbk, 2022; PT Kimia Farma Tbk, 2023; PT Kimia Farma Tbk, 2024a; PT Kimia Farma Tbk, 2024b; PT Kimia Farma (Persero) Tbk, 2026; PT Phapros Tbk, 2022; PT Phapros Tbk, 2023; PT Phapros Tbk, 2025; PT Phapros Tbk, 2026). Revenue context covers 2021–2025. Main financial comparisons use the latest accessible 2023–2025 comparative figures; the detailed expense, cash flow and valuation comparisons use 2024–2025. Earlier figures are not combined indiscriminately with later restatements. Amounts are converted to billions of Indonesian rupiah; ratios are recalculated from the underlying amounts.

Narrative evidence is read in context and classified as an organisational responsibility, an implemented activity or a quantified outcome. Searches in extracted report text locate candidate passages; inspection of the surrounding section determines eligibility. Training for community partners is excluded from company capability evidence. A missing disclosed amount remains missing, and the study does not invent a technology budget, customer conversion rate or innovation outcome. Coding is a single analytical reading; no independent second coder or interrater statistic is claimed.

The analysis uses transparent ratios and within case changes, with no regression coefficients or significance tests. A few nested corporate cases do not provide a basis for conventional cluster robust inference (Colin Cameron & Miller, 2015). Nor can contemporaneous annual comparisons identify a causal indirect effect, which requires stronger assumptions and a defensible temporal structure (VanderWeele, 2016). Corporate disclosure and earnings quality literature inform the separation of reported narratives, measurement choices and financial outcomes (Healy & Palepu, 2001; Dechow et al., 2010). The literature synthesis is purposive and its scope is disclosed explicitly (Snyder, 2019).

Selling expense intensity equals total selling expenses divided by revenue and multiplied by 100. Net margin equals consolidated profit for the year divided by revenue. Return on assets uses year end assets and is labelled accordingly. The change in selling intensity is decomposed sequentially: first substitute 2025 expense at 2024 revenue, then substitute 2025 revenue. The two components sum exactly to the observed percentage point change.

RESULTS AND DISCUSSION

Table 1. Measurement scope and evidential status

Measure	Observed evidence	Interpretation
Digital capability	Systems, governance and channel narratives	Disclosure evidence; direct capability unmeasured
Financial outcomes	Latest comparable statements for 2023–2025	Descriptive outcomes within each reporting perimeter
Expense and valuation detail	Comparable 2024–2025 notes and share summaries	Observed ratios; no identified treatment effect
Reporting context	Revenue and archive for 2021–2025	Statement vintages retained; no interpolation

Source: Authors' measurement audit of the public reports (PT Kimia Farma (Persero) Tbk, 2026; PT Phapros Tbk, 2026; PT Kimia Farma Tbk, 2024b; PT Phapros Tbk, 2025).

The reporting boundary

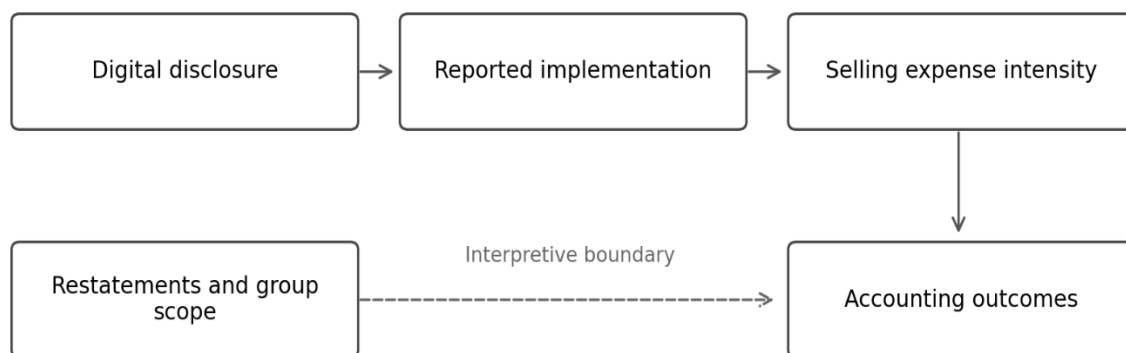
The first finding concerns the unit of analysis. Phapros' own financial statements describe its business, while Kimia Farma's consolidated statements include Phapros alongside other

activities. The two revenue series cannot be added to form an industry total. Treating them as independent observations would give a portion of the same operations two analytical weights. The useful comparison is between the broader group and a separately reporting subsidiary, each read within its own perimeter.

The archive also shows why the financial statement vintage must be recorded. Kimia Farma's original 2022 annual report reports net sales of 9,606.15 billion rupiah, whereas the reissued 2023 financial statements report 9,247.41 billion for the 2022 comparative. The difference is 358.73 billion, or 3.88 percent of the later figure.

Phapros' later report explicitly identifies 2022 and 2023 figures as restated. These observations make a mechanically assembled historical spreadsheet unsuitable for causal analysis without reconciliation (PT Kimia Farma Tbk, 2023; PT Kimia Farma Tbk, 2024b; PT Phapros Tbk, 2025; PT Phapros Tbk, 2026).

Digital disclosure is consequently assessed as a reporting phenomenon. A named responsibility, an implemented system and a measured outcome occupy different evidential levels. Aggregating all three into a word count would obscure that difference. A company can publish a longer report or repeat a strategic phrase more often without using a system more effectively. The capability literature gives a reason to retain the distinction rather than infer organisational performance from textual frequency (Bharadwaj, 2000; Melville et al., 2004; DeLone & McLean, 2003).



Source: Authors' conceptual synthesis. Arrows represent proposed links, not estimated effects.

Figure 1. Interpretive framework and its measurement boundary

Digital evidence and its limits

Kimia Farma's 2025 technology section describes a master plan covering 2022–2027, governance responsibilities, application management and cyber security arrangements. It also lists staff training in development and security. These passages support the presence of an articulated technology organisation. They do not disclose an independently verified financial return, an application usage rate or a comparable annual technology expenditure series (PT Kimia Farma (Persero) Tbk, 2026).

Phapros' 2025 report identifies information technology management, training that includes its enterprise system, and the use of electronic commerce and social media for market communication. These are specific commercial and organisational activities. The report separately includes digital marketing training for community partners; that passage is not coded as an internal marketing capability. Reading the context changes the interpretation that a keyword based count would produce (PT Phapros Tbk, 2026).

The comparison therefore supports a limited statement: both firms describe organisational and customer facing digital arrangements. It does not support a ranking of their actual digital capabilities. In particular, the broader group's more extensive narrative may follow from its larger reporting perimeter. Digital transformation theory predicts the importance of

organisational complements, but this corpus cannot observe their quality directly (Hanelt et al., 2021; Teece, 2007; Matarazzo et al., 2021).

Table 2. Reported revenue, selling intensity and profitability

Case and year	Revenue	Selling / revenue %	Net margin %	Profit / year end assets %
Kimia Farma 2023	9,871.84	22.21	-22.90	-13.59
Kimia Farma 2024	9,938.96	22.80	-12.16	-8.09
Kimia Farma 2025	9,223.33	19.67	-4.81	-3.13
Phapros 2023	1,003.57	NA	0.79	0.45
Phapros 2024	744.69	49.83	-39.03	-20.32
Phapros 2025	940.88	30.74	2.92	1.98

Source: Authors' calculations; revenue in billion rupiah. Phapros 2023 selling detail was not extracted on a comparable basis and is shown as NA (PT Kimia Farma (Persero) Tbk, 2026; PT Phapros Tbk, 2026; PT Phapros Tbk, 2025; PT Kimia Farma Tbk, 2024b).

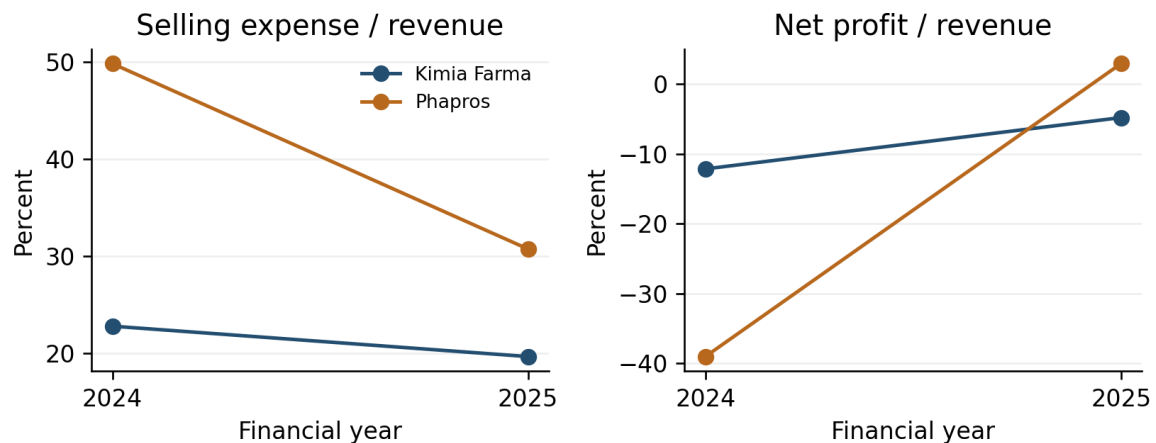
Expense intensity and financial recovery

The financial pattern is not uniform. Kimia Farma's revenue decreased by 7.20 percent in 2025, but selling expenditure fell by 19.94 percent. Its selling expense intensity therefore declined by 3.13 percentage points. The net profit margin remained negative at 4.81 percent, although it improved substantially from the previous year. This is a recovery in the size of the loss rather than a return to profitability.

Phapros' revenue increased by 26.34 percent while selling expenditure declined by 22.04 percent. Its selling expense intensity fell by 19.08 percentage points and the net margin moved from minus 39.03 to plus 2.92 percent. The subsidiary and the group thus shared a lower expense ratio but arrived there through different revenue movements. Calling both changes evidence of the same digital mechanism would discard the main contrast in the data.

An exact sequential decomposition clarifies the ratio. Holding 2024 revenue fixed, the change in Kimia Farma's selling expenditure reduces its ratio by 4.55 percentage points. Substituting 2025 revenue then adds 1.42 points because the denominator is smaller. For Phapros, expenditure reduction contributes minus 10.98 points and revenue expansion contributes another minus 8.10 points. The decomposition depends on the stated ordering, but the sum exactly equals each observed ratio change. It is an accounting identity rather than an estimate of treatment effects.

The composition of the expense numerator further limits a marketing interpretation. Kimia Farma's selling costs include employee remuneration, freight, right of use depreciation and other items, alongside promotion and commissions. Phapros' selling costs include marketing and distribution as a combined line and several employment and inventory related charges. These totals are comparable as selling cost burdens, but they do not measure the same narrowly defined marketing input. Capability theory and marketing finance research would require a more specific resource measure before interpreting an expense decrease as either stronger or weaker marketing (Morgan, 2012; Joshi & Hanssens, 2010; Srivastava et al., 1998).



Source: Authors' calculations from the identified public reports (PT Kimia Farma (Persero) Tbk, 2026; PT Phapros Tbk, 2026; PT Phapros Tbk, 2025).

Figure 2. Selling expense intensity and net margin move on different revenue paths

Table 3. Exact sequential decomposition of the 2024–2025 selling ratio change

Case	Expense component pp	Revenue component pp	Total change pp
Kimia Farma	–4.55	+1.42	–3.13
Phapros	–10.98	–8.10	–19.08

Source: Authors' calculations. Expense is changed first; the component allocation is order dependent, while the total is exact.

Interpretation and reporting contribution

The cases do not validate a simple positive association between more disclosed digitalisation, greater selling expenditure and improved financial performance. A reduction in cost intensity accompanies improvement, but the observations do not establish which decisions caused it. Changes in product demand, credit, restructuring and expense recognition remain competing explanations. The impairment literature is relevant precisely because accounting adjustments can change reported outcomes without a corresponding change in customer facing capability (Sova et al., 2023; Dechow et al., 2010).

For managers, the practical reporting improvement is to connect a named initiative to an operational indicator before connecting it to profit. Examples include the share of orders received through a channel, order processing time, collection time and contribution margin after fulfilment costs. A report that records the baseline, the scope of deployment and the subsequent indicator is more informative than one that repeats transformation language. This recommendation follows the separation of system success, customer value and financial performance in the literature (DeLone & McLean, 2003; Li et al., 2021; Saura, 2021).

For researchers, the expense decomposition is a useful preliminary audit of a proposed regression variable. If a ratio changes mainly because revenue changes, placing it beside revenue growth in an explanatory model may create a mechanical relationship. The present analysis makes this issue visible before estimation.

Its distinctive contribution is the combination of reporting perimeter checks, statement vintage reconciliation and an exact ratio decomposition, which together place annual report based digital performance claims on a narrower and more reproducible evidential footing.

CONCLUSIONS AND RECOMMENDATIONS

Conclusion

In the two cases, lower selling expense intensity accompanied improved reported margins in 2025, but the revenue and expenditure components differed. Digital narratives document

organisational activity and customer access without identifying a financial contribution. The appropriate conclusion is a contrast in reported adjustment paths, with the interpretation of digital disclosure bounded by accounting comparability and group consolidation.

This study examined the relationship between digital transformation disclosure, marketing intensity, and financial performance in Indonesian state-owned pharmaceutical cases. The findings indicate that both companies disclose digital transformation initiatives and demonstrate changes in selling expense intensity and financial performance indicators. However, the available evidence does not establish that disclosed digital initiatives directly caused financial improvements.

The analysis shows that changes in selling expense intensity may result from different combinations of cost adjustments and revenue movements. Kimia Farma and Phapros demonstrate different financial trajectories, indicating that similar digital transformation narratives may coexist with different business outcomes. Therefore, financial performance should be interpreted within the broader context of operational conditions, market dynamics, organizational decisions, and reporting boundaries.

The main contribution of this study is the separation between three dimensions that are often combined in corporate discussions: digital transformation disclosure, marketing intensity, and realized financial performance. By distinguishing reported initiatives from measurable outcomes, this study provides a more careful approach to evaluating digital transformation in pharmaceutical companies.

The findings suggest that annual reports provide valuable evidence of strategic direction but remain limited in measuring actual digital capability and business impact. Future research should integrate disclosure analysis with operational data, digital performance indicators, and longitudinal empirical models to develop a deeper understanding of how digital transformation contributes to sustainable financial performance.

Limitations

This study has several limitations. First, the analysis focuses on two pharmaceutical cases within the Indonesian state-owned pharmaceutical sector. Therefore, the findings provide contextual insights and should not be generalized beyond the examined cases. Second, digital transformation is analyzed through corporate disclosure, while marketing intensity is measured using reported financial information. These measures provide evidence of reported practices and outcomes but do not fully capture actual digital capability, marketing effectiveness, or internal organizational processes. Third, the study uses descriptive financial comparisons rather than causal estimation.

Changes in financial performance may reflect multiple factors, including operational restructuring, market conditions, cost adjustments, and other strategic decisions. The findings should therefore be interpreted as an evidence-based analysis of reported relationships rather than a direct measurement of digital transformation impact.

Recommendations

Future work should collect a larger set of independent pharmaceutical firms, reconcile statement vintages and obtain deployment and channel performance measures. Companies should report digital project scope, operational outcomes and comparable expenditure separately. Any later causal model should follow the measurement audit rather than substitute textual disclosure for realised capability.

Author Contributions

All authors contributed to the research conceptualization, literature review, methodology development, data collection, analysis, interpretation, manuscript preparation, revision, and final approval of the manuscript.

AI Disclosure Statement

AI-assisted tools were used during manuscript preparation for language refinement and research organization support. The authors reviewed all content and take full responsibility for the accuracy, originality, and integrity of the published work.

Data Availability

The source documents are public and their direct locations are listed in the references. The accompanying evidence package records the extracted data, calculation script and source inventory. No interviews, proprietary data or invented field observations are used. Narrative interpretations are limited to the identified reports.

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