Service-Level Agreement Ticketing as Marketing Intelligence for Managing Public Broadband Utilization: Evidence from Palapa Ring, Indonesia

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Abstract. Public broadband infrastructure creates value only when users can depend on stable connectivity, timely recovery, and transparent service assurance. This study examines whether service-level agreement (SLA) ticketing records can be used as marketing-intelligence evidence for managing Palapa Ring, Indonesia's national broadband backbone. Monthly secondary data from SLA and disruption-ticketing reports for May 2024–April 2025 were analysed using descriptive statistics and regression diagnostics. Because independent indicators of real utilization, including traffic load, bandwidth use, uptime, latency, active users, and node-level capacity, were not consistently available, the dependent variable is treated as an operational proxy rather than a direct measure of demand. The results show that disruption volume alone provides a limited indication of service effectiveness, whereas the SLA Resolution Rate moves directly with the constructed proxy. The simultaneous model therefore indicates algebraic dependence created by the proxy formula, not causal evidence that ticket resolution determines actual utilization. The study contributes by linking marketing intelligence, service quality, public value, resource capability, and sustainability marketing in public broadband governance. It concludes that SLA ticketing can support accountability-oriented service intelligence, but future assessment must combine incident records with independent network telemetry and user-perception evidence.

Keywords: Palapa Ring, SLA Ticketing, Public Broadband Infrastructure, Marketing Intelligence, Service-Level Agreement, Digital Government

3 Introduction

Digital government depends on the reliability of the infrastructure through which public services are delivered. In Indonesia, Palapa Ring was established as a national broadband backbone to strengthen fibreoptic connectivity and reduce regional gaps in access to high-speed communication infrastructure [1] The strategic logic is that broadband can support education, health, administration, economic participation, and inclusion when connectivity is not only available but also dependable. International evidence similarly associates broadband and digital government with wider economic

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and institutional benefits, although those benefits depend on deployment quality, public value creation, and sustained use [2].

Availability, however, is not the same as utilization. A backbone network may be physically present while institutions and downstream users remain reluctant to depend on it if disruptions are frequent, recovery is slow, or performance reporting is unclear. Digital-government research therefore emphasizes service quality, administrative capability, trust, and accountability rather than technology provision alone [2-6]. For public broadband, these concerns appear in operational form through service continuity, incident handling, responsiveness, and transparent SLA reporting.

This article interprets SLA ticketing as marketing intelligence for public infrastructure. Market-orientation theory defines intelligence generation, dissemination, and organizational responsiveness as central capabilities for understanding stakeholders and improving performance [7]. Although developed largely in business contexts, this logic applies to public broadband because infrastructure managers must detect service failures, diagnose service gaps, and communicate recovery to public institutions and communities. Digital-transformation and marketing literature also shows that operational data can be converted into knowledge about processes, users, and value creation [8]. A ticketing system records disruptions, clear alarms, unresolved cases, and recovery performance; these records therefore become managerial evidence rather than merely technical logs.

The conceptual foundation combines service-quality, public-value, resource-based, and sustainability perspectives. SERVQUAL places reliability and responsiveness at the centre of perceived service quality [9], and later service-quality research links service quality to continued use and favourable evaluation [10]. Information-systems success research further connects system quality, information quality, service quality, use, satisfaction, and net benefits [11]. E-government studies extend this logic by showing that digital public services create value through trust, accessibility, service experience, perceived value, satisfaction, and continuance intention [5, 12]. The Resource-Based View explains why infrastructure must be managed as a capability rather than treated as a passive asset [13], while sustainability marketing stresses long-term value delivery, trust, and responsible continuity [8, 10, 11].

Two gaps motivate this study. First, existing e-government and service-quality studies mostly examine perception, satisfaction, loyalty, or design characteristics, while the operational records behind public broadband services are less often analysed as strategic intelligence [5, 4, 14, 15]. Second, infrastructure evaluation commonly prioritizes uptime, latency, traffic, throughput, and capacity utilization, whereas disruption-response records are usually treated as administrative artefacts. This article asks whether monthly disruption cases and the SLA Resolution Rate can be used to interpret a proxy measure of Palapa Ring service-effectiveness utilization. The objective is to clarify both the managerial value and the methodological boundary of SLA-based intelligence.

2. Methods

The study uses an explanatory quantitative design based on monthly secondary data from Palapa Ring SLA performance documents and disruption-ticketing reports for May 2024–April 2025. The unit of analysis is the reporting month, producing twelve observations. Each observation includes reported disruption cases and clear-alarm records, which are transformed into an SLA Resolution Rate and a proxy for service-effectiveness utilization.

The design is appropriate for SLA-based service assurance because SLA records define service expectations and document whether service events have been handled within the reporting structure [16, 13]. At the same time, the design is cautious: it does not measure real bandwidth demand, active users, node utilization, application adoption, or economic effects. Monthly aggregation can also hide regional concentration, within-month downtime, node criticality, and recurrence. The analysis is therefore treated as a diagnostic layer rather than a complete measure of network performance.

Table 1. Variables, Measurement Basis, And Interpretation Safeguards.

Variable	Code	Measurement basis	Interpretation safeguard
Reported disruption cases	X1	Total monthly service-incident tickets.	Indicates incident volume, not severity or downtime.
SLA Resolution Rate	X2	Clear alarms divided by total disruptions, multiplied by 100.	Indicates resolution share within the ticketing system.
Proxy utilization	Y	Share of resolved disruptions in total monthly disruptions.	Operational proxy; not direct traffic, bandwidth, or user demand.

Source: Author's Work

The formulas are: SLA Resolution Rate = (Clear Alarms / Total Disruptions) × 100; Proxy Utilization = [1 − ((Total Disruptions − Clear Alarms) / Total Disruptions)] × 100. Because both formulas are algebraically equivalent when expressed as percentages, the regression models test internal diagnostic relationships rather than independent causality. Three equations were estimated: Model 1 regresses Y on disruption cases; Model 2 regresses Y on the SLA Resolution Rate; and Model 3 includes both predictors simultaneously. Classical assumption checks are used only as supporting diagnostics because the dataset is small.

3. Results And Discussion

The ticketing data show uneven monthly service conditions. The observed records contain an average of 106 disruption cases and 60 clear alarms per month. Selected observations in Table 2 indicate that May 2024 had the lowest selected proxy value, while July 2024 had the highest selected proxy value. August 2024 recorded a high incident count but a lower proxy value than June and July because the cleared share was lower. This pattern shows that incident volume alone is not sufficient for evaluating service effectiveness; the conversion of reported disruptions into cleared cases is the more meaningful operational signal.

Table 2. Selected Monthly Observations From The SLA Ticketing Dataset.

Month	Disruption cases	Clear alarms	SLA rate (%)	Proxy value (%)
May 2024	96	16	16.67	16.67
June 2024	126	70	55.56	55.56
July 2024	118	75	63.56	63.56
August 2024	149	69	46.31	46.31
December 2024	128	71	55.47	55.47

Source: Author's Work

The descriptive findings also demonstrate that the proxy moves exactly with the SLA Resolution Rate. This is expected because both measures are derived from the clear-alarm ratio. The operational implication is still important: unresolved disruptions represent service risk, while a higher cleared share indicates better responsiveness within the ticketing system. The methodological implication is equally important: the proxy cannot be represented as an independent measure of actual network use.

Table 3. Regression Findings For The SLA-Based Proxy Model.

Model	Predictor(s)	Key result	Interpretation
Model 1	Disruption cases (X1)	Negative coefficient; limited substantive meaning.	Incident volume alone does not capture service effectiveness.
Model 2	SLA Resolution Rate (X2)	One-to-one positive association.	Reflects proxy construction from the same clear-alarm ratio.
Model 3	X1 and X2	Perfect fit in the simultaneous model.	Indicates algebraic dependence, not independent causal evidence.

Source: Author's Work

The regression findings should therefore be read as diagnostics rather than causal proof. Model 1 is directionally consistent with the expectation that disruption may weaken service effectiveness, but the substantive effect of incident volume is limited. Model 2 shows a direct association between the SLA Resolution Rate and the proxy because both are constructed from the same ratio. Model 3 confirms this relationship through perfect model fit; however, in this setting a perfect fit signals algebraic dependence, not superior empirical explanation. This interpretation is central to the article because it prevents statistical overclaiming.

Despite this limitation, SLA ticketing remains valuable as marketing intelligence. Ticketing records identify where service promises are at risk, clear alarms show where recovery has occurred, and unresolved tickets reveal gaps that may affect user confidence. This interpretation extends market orientation to public infrastructure: managers generate intelligence from operational conditions, disseminate it through reporting systems, and respond through repair, escalation, and communication [7] [17].

It also aligns with digital-transformation research because operational data are transformed into knowledge about process performance and stakeholder value [8].

The findings also connect directly with service-quality theory. Reliability is reflected in the ability to minimize repeated and unresolved disruptions, while responsiveness is reflected in the ability to clear incidents and communicate recovery. These dimensions are core to SERVQUAL [9], and service-quality research suggests that reliable and responsive services influence continued use and favourable evaluation [10]. In public broadband, these perceptions are shaped by infrastructure that users often do not see directly. Citizens may interact with a school platform, health application, or government portal without knowing which backbone segment carries the traffic, but infrastructure failure appears as poor public-service experience.

From a public-value perspective, SLA ticketing links hidden network operations to visible digital-government outcomes. E-government studies show that trust, satisfaction, perceived value, accessibility, service experience, and continuance intention are central to the value of public digital services[4, 5, 18]. Palapa Ring's contribution to public value therefore depends not only on coverage but also on assurance mechanisms that make the infrastructure dependable. Transparent ticketing and resolution reporting can help public institutions understand whether the service can be relied upon for education, health, administration, and local economic activity.

The Resource-Based View strengthens this interpretation because a broadband backbone creates value only when it is supported by capabilities for monitoring, response, escalation, repair coordination, and data governance [15]. The SLA Resolution Rate is therefore not merely a technical percentage; it is an indicator of operational capability. Sustainability marketing adds that long-term infrastructure value requires trust, continuity, and responsible service delivery [19]. If recovery performance is weak or opaque, users may reduce dependence on digital public services. If SLA reporting is credible, it can support trust and continuity.

The main policy implication is that SLA ticketing should become a strategic accountability dashboard rather than a passive administrative archive. The dashboard should integrate incident volume, unresolved tickets, resolution share, time to resolution, recurrence, regional distribution, affected nodes, and critical service categories. It should also be connected with independent technical telemetry such as uptime, latency, throughput, downtime duration, packet loss, bandwidth use, and capacity utilization. Finally, user-perception evidence should be added to test whether operational improvements are reflected in satisfaction, trust, and continued reliance. This three-layer architecture incident intelligence, network telemetry, and user evidence would provide a stronger basis for evaluating Palapa Ring utilization and public value creation[11,3]

4. Conclusion

This study concludes that SLA ticketing records can support marketing-intelligence practice in the management of Palapa Ring as public broadband infrastructure. The central managerial finding is that disruption handling is more informative than incident

volume alone because service dependability depends on whether reported problems are resolved and communicated within the service-assurance structure.

The study also clarifies an important methodological boundary. The utilization measure used here is an operational proxy based on ticket resolution, not a direct measure of traffic, bandwidth demand, active users, or real network adoption. The relationship between the SLA Resolution Rate and the proxy therefore demonstrates internal consistency within the ticketing data rather than independent causal evidence of actual utilization.

The theoretical contribution lies in integrating marketing intelligence, service quality, public value, resource capability, and sustainability marketing in a public broadband context. The practical contribution is the recommendation to develop SLA ticketing into a transparent accountability system that supports dashboard-based monitoring, prioritization, and service communication. Future research should combine incident records, technical telemetry, and user-perception data so that public broadband evaluation can move from proxy-based administrative measurement toward stronger evidence of reliability, trust, and sustained use.

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