

Capability-driven BPM: Transforming Enterprise Lifecycle Management Beyond Systems - Lessons from Sri Lanka Telecom

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Abstract

As organizations expand complex digital service environments, operational performance increasingly depends on coordinated capabilities spanning processes, governance, information, visibility, and accountability. However, many organizations continue to experience fragmented execution, limited lifecycle visibility, and weak cross-functional coordination despite substantial investments in enterprise systems and automation. This practitioner paper presents a case study from Sri Lanka Telecom that examines how a capability-driven BPM approach transformed Enterprise Customer Premises Equipment lifecycle management. Drawing on the TM Forum Capability Framework as an industry reference, SLT restructured Enterprise CPE management around six lifecycle capabilities: onboarding, distribution, provisioning, return, assurance, and visibility. The transformation improved provisioning responsiveness, asset recovery, lifecycle visibility, inventory forecasting, resource utilization, and enterprise service readiness. It established a foundation for future automation and operational intelligence. The case demonstrates how strategic value emerges through integrated capability development rather than isolated technology implementation and offers transferable lessons for organizations seeking to strengthen governance, visibility, and operational coordination through capability-driven BPM in complex asset-intensive service environments.

Keywords

Business Process Management (BPM), Capability-Driven Transformation, Digital Transformation, Enterprise Resource Lifecycle Management, Process Governance, Operational Agility

1. Introduction

Fixed telecommunications operators face increasing pressure to sustain growth in highly competitive markets while transitioning from traditional connectivity providers to integrated technology service providers. Business customers are accelerating digital transformation initiatives and increasingly demand end-to-end solutions that combine connectivity, security, digital services, managed platforms, and ecosystem-based capabilities. Delivering these solutions requires coordination across operational units, technology platforms, field operations, inventory networks, customer premises assets, and stakeholders, creating new challenges for service delivery and lifecycle management. As service ecosystems become more interconnected and operationally complex, organizational performance depends not only on technology investments but also on the ability to coordinate the capabilities required to deliver end-to-end business outcomes [1]. This reflects the evolving role of BPM from process optimization toward broader enterprise capability orchestration in increasingly digital and interconnected environments [2].

Proceedings of the Industry Forum (BPM 2026), Toronto, Canada, September 27th to October 2nd, 2026.

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Sri Lanka Telecom (SLT)¹, the national fixed telecommunications provider in Sri Lanka supports enterprise, SME, and government customers through a nationwide portfolio of connectivity, security and digital services. A critical enabler of these services is Enterprise Customer Premises Equipment² (Enterprise CPE), which comprises high-value, provider-managed assets supporting enterprise connectivity and digital services. Unlike many enterprise assets, Enterprise CPE remains under the service provider's operational responsibility throughout much of the customer lifecycle. Consequently, effective lifecycle management is essential for maintaining service readiness, operational responsiveness, resource utilization, and customer experience across geographically distributed service environments.

As enterprise service portfolios expanded and customer environments became increasingly distributed and technology-intensive, SLT experienced growing challenges in managing Enterprise CPE across its lifecycle. These challenges extended beyond inventory management to operational coordination, lifecycle visibility, governance, accountability, and decision-making, constraining operational efficiency, resource utilization, enterprise service delivery, and service scalability.

This paper presents a capability-driven BPM transformation undertaken by SLT to address these challenges. By adopting a business capability perspective, the organization strengthened Enterprise CPE lifecycle management through integrated organizational capabilities rather than isolated process or technology improvements. The case demonstrates how capability-driven BPM can support enterprise transformation in complex service environments [3, 4]. Beyond telecommunications, the lessons provide practical insights for asset-intensive and service-oriented organizations seeking to strengthen enterprise capabilities in similarly complex operational environments.

2. Problem Statement

As enterprise service portfolios expanded beyond traditional connectivity towards integrated digital and managed service offerings, service delivery environments became increasingly complex [5]. Enterprise customers increasingly require integrated connectivity, networking, security, cloud, and digital services, creating greater operational interdependencies across technology platforms, operational teams, and stakeholders. Consequently, maintaining service readiness, operational responsiveness, and efficient resource utilization became progressively more challenging.

Within this environment, Enterprise CPE became a critical enabler of enterprise service delivery. CPE supported service activation, connectivity, monitoring, assurance, and ongoing operations across geographically distributed customer environments. Effective lifecycle management therefore, required coordinated execution across planning, provisioning, deployment, support, recovery, and asset management activities involving multiple systems and organizational units.

Despite investments in Enterprise Resource Planning (ERP) and Operation Support System (OSS) platforms supporting inventory, operational, and service management activities, SLT experienced increasing challenges in coordinating enterprise CPE across its lifecycle. Provisioning, asset recovery, inventory planning, lifecycle visibility, and operational decision-making frequently depended on manual coordination, fragmented information, and localized practices. As a result, lifecycle execution became increasingly difficult to manage consistently across distributed operational environments.

These challenges extended beyond operational inefficiencies and increasingly constrained enterprise service delivery. Service performance depended on the timely availability, accurate tracking, recovery, redeployment, and support of CPE assets distributed across customer locations nationwide. Consequently, limitations in lifecycle coordination affected provisioning responsiveness, resource utilization, forecasting effectiveness, and operational agility.

These challenges extended beyond operational inefficiencies and increasingly constrained enterprise service delivery. Service performance depended on the timely availability, accurate tracking, recovery,

¹<https://www.sltmobitel.lk/about-us?firstTab=SriLanka-Telecom-PLC&secondTab=company-profile>

²These are telecommunications and network equipment deployed at enterprise customer locations to enable the delivery, operation, monitoring, and management of enterprise communication and digital services. Typical examples include network termination units, routers, switches, firewalls, and other specialized network devices.

redeployment, and support of CPE assets distributed across customer locations nationwide. Consequently, limitations in lifecycle coordination affected provisioning responsiveness, resource utilization, forecasting effectiveness, and operational agility [6, 7, 8, 9, 10].

Viewed through a BPM and capability perspective, the core challenge was therefore not the performance of individual systems or technologies, but the absence of an integrated enterprise capability for managing CPE throughout its lifecycle. Addressing this gap required a shift from system-centric improvement initiatives toward a capability-driven BPM transformation approach focused on strengthening the organizational capabilities required to support effective enterprise CPE lifecycle management.

3. Capability-driven transformation approach

The challenges described in Section 2 reflected broader capability deficiencies rather than isolated process or system issues. To address these constraints, SLT adopted a capability-driven transformation approach to strengthen enterprise CPE lifecycle management. Guided by BPM principles emphasizing alignment across processes, governance, information, and organizational responsibilities [2, 11], the capability model was developed through enterprise service domain knowledge, operational experience, and business requirements. The TM Forum Capability Framework³ was selected as an industry reference because it provides a telecommunications-specific capability model and a common vocabulary for business capabilities across communications service providers, making it well suited to the enterprise service domain addressed in this study. The capability architecture was refined through stakeholder engagement to reflect SLT's governance, operational practices, and lifecycle requirements. Table 1 summarizes the adapted enterprise CPE lifecycle capabilities and the capability gaps identified through the assessment.

The assessment revealed that weaknesses in governance, ownership, information management, operational coordination, and visibility affected multiple lifecycle stages. Consequently, the transformation focused on strengthening these cross-cutting capability areas rather than addressing individual operational issues in isolation, thereby creating a more integrated and scalable foundation for enterprise service delivery. This capability-oriented perspective is consistent with BPM research emphasizing the role of organizational capabilities in supporting sustainable performance and enterprise transformation [12].

Following the assessment, SLT implemented a coordinated set of capability development initiatives to strengthen lifecycle execution and establish a more integrated operating model:

- Governance and Policy Strengthening: Enterprise-wide policies, governance guidelines, escalation procedures, and operational standards were introduced to improve lifecycle control, exception management, asset recovery, and execution consistency [4, 13].
- Lifecycle Ownership and Accountability: A lifecycle accountability framework clarified responsibilities across planning, onboarding, deployment, operations, support, optimization, and retirement activities, strengthening ownership and lifecycle continuity [9].
- Process Integration and Operational Coordination: End-to-end workflows across provisioning, return handling, repair management, redistribution, and inventory coordination were redesigned to improve lifecycle execution and operational responsiveness.
- Information Management and Data Standardization: Lifecycle attributes, identifiers, and status definitions were standardized across ERP, OSS, and operational environments, improving information consistency and reducing manual reconciliation [14].
- Lifecycle Visibility and Operational Intelligence: Consolidated reporting, dashboards, and cross-system visibility mechanisms were introduced to improve lifecycle transparency and decision support while establishing a foundation for future operational intelligence capabilities [15].

³This is a standardized business capability model developed by TM Forum for telecommunications service providers. It defines the business capabilities required to deliver products and services independently of organizational structures, business processes, applications, and technologies, providing a common industry vocabulary for business architecture and transformation.

Table 1
Business Capabilities, Purposes, and Identified Key Gaps

Business Capability	Capability Purpose	Key Capability Gaps Identified
CPE Onboarding & Lifecycle Readiness	Manage onboarding and lifecycle readiness of new CPE models and platforms.	Weak onboarding governance, delayed readiness validation, fragmented stakeholder coordination, and unclear lifecycle ownership.
CPE Inventory & Distribution Management	Manage distribution, allocation, movement, and availability of CPE assets.	Fragmented inventory visibility, inefficient distribution practices, inconsistent stock positioning, and limited coordination across operational locations.
CPE Service Provisioning Management	Associate CPE with customer services through deployment and activation.	Provisioning delays caused by limited lifecycle visibility, asset availability uncertainty, and dependencies across multiple operational teams.
CPE Asset Recovery Management	Recover, validate, and reintegrate disconnected, replaced, or reusable assets into operational circulation.	Weak recovery controls, delayed returns, limited accountability, and prolonged retention of reusable assets outside operational circulation.
CPE Asset Assurance Management	Manage repair, refurbishment, and replacement decisions across the asset lifecycle.	Fragmented repair coordination, limited repair visibility, inconsistent handling practices, and delayed redeployment of repairable assets.
CPE Lifecycle Visibility & Intelligence	Provide visibility of asset status, ownership, location, utilization, and lifecycle progress.	Disconnected information sources, manual reconciliation, limited lifecycle transparency, and insufficient decision-support capabilities.

The transformation was supported through cross-functional governance involving planning, inventory management, procurement, service delivery, operations, platform management, cybersecurity, repair centers, and regional teams. Through iterative workshops, operational reviews, and capability assessments, lifecycle activities, governance, information, stakeholder responsibilities, and operational dependencies were assessed against the capability model to identify capability gaps. Improvement initiatives were prioritized through stakeholder consensus based on business impact, implementation feasibility, operational dependencies, and opportunities to achieve early operational improvements before coordinated cross-functional implementation. Central coordination and active stakeholder participation strengthened alignment, ownership, adoption, and sustained execution throughout the transformation journey [11, 16].

4. Outcomes and business impact

The transformation strengthened enterprise CPE lifecycle management through coordinated capability development across governance, ownership, information management, operational coordination, and visibility. The resulting benefits included improved operational efficiency, resource utilization, decision-making, organizational alignment, and future capability development. The reported outcomes are based on a combination of operational records, management reports, cross-functional reviews, and stakeholder validation conducted throughout the transformation. Where precise operational measurements were unavailable, improvements are presented as organization-validated estimates.

Operational efficiency and service responsiveness. Prior to the initiative, provisioning, return handling, repair coordination, and redistribution activities relied heavily on manual coordination across multiple teams and locations. For certain high-value Enterprise CPE models maintained at central stores, fulfillment and field teams sometimes required several days and occasionally nearly a week, to obtain and deploy equipment for customer provisioning. In geographically distant regions,

customer provisioning could be delayed by approximately 5–7 days due to transport and coordination dependencies. Following the transformation, lifecycle workflows were standardized, responsibilities clarified, and coordination strengthened across provisioning, distribution, return, and assurance. Service delivery, inventory, and fulfillment teams reported an organization-validated estimate of a 40–60% reduction in manual follow-ups and escalation-driven coordination. Improved visibility, centralized coordination, and courier-based distribution enabled many devices previously requiring several days of coordination to be delivered the same day, significantly improving enterprise service responsiveness. These outcomes demonstrate the value of managing lifecycle activities as an integrated enterprise capability rather than as disconnected functional processes [7, 17].

Resource utilization and cost efficiency. The transformation improved enterprise CPE utilization while reducing recovery and redistribution overheads. Before the initiative, reusable and repairable assets frequently remained outside operational circulation due to delayed returns and fragmented coordination between regional offices, stores, and repair facilities. By strengthening return, assurance, and lifecycle coordination capabilities, operational records and inventory management reviews indicated an estimated 30–50% improvement in visibility and utilization of reusable enterprise CPE assets. Courier-based return coordination accelerated recovery and redistribution cycles, enabling assets that previously remained idle for several weeks to be returned to operational circulation within a few days. Transportation and handling costs for some return scenarios were estimated to reduce to nearly one-tenth of previous operational costs. These improvements strengthened utilization of existing assets and reduced dependence on additional procurement activities [18, 19].

Enhanced decision-making capability. Planning, inventory, procurement, and operations teams previously had limited visibility into asset availability, utilization, recovery progress, and stock movements. Decisions frequently depended on fragmented reports, manual reconciliation, and experience-based judgment. Standardized lifecycle data structures, common identifiers, consolidated reporting, and phased visibility mechanisms established a more reliable information foundation for enterprise CPE management. Improved asset tracking and life-cycle visibility contributed to approximately 15–20% improvement in forecast alignment and planned inventory allocation for selected CPE categories. Dashboard-based visibility reduced reconciliation effort and supported more proactive operational and investment decisions. These findings demonstrate how trust-ed information structures and lifecycle visibility improve decision quality across interconnected operational environments [7, 14].

Organizational alignment and future readiness. The introduction of a lifecycle accountability framework clarified responsibilities across planning, onboarding, deployment, support, replenishment, and retirement activities. Product management, planning, fulfillment, operations, platform management, and field teams gained clearer ownership of lifecycle activities and interdependencies. Product & planning teams reported approximately 15% improvement in new CPE onboarding timelines and nearly 60% reduction in duplicate coordination and rework activities. Beyond immediate operational benefits, standardized lifecycle data structures, integrated governance mechanisms, improved visibility, and clarified ownership models established a stronger foundation for future automation, operational intelligence, and AI-enabled lifecycle management initiatives. These outcomes reinforce BPM perspectives emphasizing integrated organizational capabilities as foundations for sustainable digital transformation and continuous adaptation [11, 12], while illustrating how governance, visibility, ownership, and coordination capabilities can translate into measurable operational and business benefits.

5. Discussion and transferrable lessons

This case illustrates a broader challenge faced by organizations operating in complex, asset-intensive, and digitally enabled environments. While operational issues often manifest as provisioning delays, fragmented ownership, limited visibility, forecasting challenges, and coordination difficulties, the underlying challenge frequently lies in the absence of integrated organizational capabilities spanning governance, information, accountability, and operational execution. From a BPM perspective, sustainable operational and strategic value is unlikely to be achieved through isolated process improvements,

automation initiatives, or technology deployments alone. Instead, meaningful transformation requires aligning organizational capabilities around the delivery of business outcomes [11, 17].

The findings both reinforce and extend existing BPM research. Consistent with BPM capability literature [11,12], the case confirms that sustainable transformation depends on integrated organizational capabilities rather than isolated process improvements or technology initiatives. However, the case extends this perspective by demonstrating how capability-driven BPM can be operationalized through coordinated enterprise capability development within a single transformation program. The findings also align with dynamic capabilities theory [18], highlighting that organizational agility depends on the ability to continuously coordinate and reconfigure enterprise capabilities in response to changing service requirements.

A key lesson is that business capability architecture provides a practical transformation lens for translating BPM capability concepts into operational improvements. Rather than focusing solely on process maturity, the capability perspective integrated previously fragmented organizational capabilities into a coordinated enterprise capability architecture. Using an industry capability framework as a reference, SLT shifted from optimizing individual systems and functions toward developing an integrated enterprise capability architecture aligned with business outcomes. This clarified how organizational capabilities collectively influence business performance. The case demonstrates how a capability perspective can support root-cause identification, transformation prioritization, and enterprise-wide coordination [11, 15, 17, 18].

The transformation further highlights that sustainable capability performance depends on effective governance, clear ownership, reliable information, and lifecycle visibility. Organizational barriers, including functional silos, unclear ownership, and inconsistent data practices, were progressively addressed through stakeholder engagement and capability refinement, improving coordination, decision-making, and execution consistency. These findings reinforce BPM perspectives that position governance, information quality, visibility, and organizational alignment as critical enablers of scalability and long-term performance improvement [7, 8, 9, 14, 16, 19].

Beyond operational improvements, the case demonstrates how BPM can create strategic value through capability orchestration. Although the case focused on enterprise CPE lifecycle management within a telecommunications provider, similar challenges exist across many asset-intensive and service-oriented industries where operational performance depends on coordinated capabilities spanning assets, information, governance, and service delivery. Consequently, the lessons may be relevant to telecommunications operators, managed service providers, utilities, transportation and logistics organizations, data center operators, and other organizations operating in increasingly digital and interconnected environments.

The findings should be interpreted within the context of a single case study conducted within a national telecommunications provider. The capability priorities, governance structures, and implementation decisions reflected the organization's specific operating environment and may differ across industries and regulatory contexts. Nevertheless, the underlying capability-driven principles remain broadly relevant to organizations seeking to improve agility, scalability, resilience, and enterprise-wide coordination through BPM-enabled transformation [6, 11, 12, 15, 18].

6. Conclusion

This paper examined how SLT addressed enterprise CPE lifecycle management challenges within an evolving enterprise service environment. The case showed that fragmented execution, limited visibility, forecasting inaccuracies, and unclear ownership originated not from individual systems or technologies, but from broader organizational capability gaps. By reorganizing enterprise CPE management around integrated lifecycle capabilities, SLT improved provisioning responsiveness, asset utilization, forecasting, decision-making, and cross-functional execution while establishing a foundation for future automation and operational intelligence.

From a BPM perspective, the case demonstrates how capability-driven BPM can operationalize

enterprise transformation through the coordinated development and integration of organizational capabilities rather than technology deployment alone. The findings support an emerging view of BPM as a means of orchestrating enterprise capabilities across organizational boundaries, enabling organizations to align resources, information, governance, and stakeholders around shared business objectives [10, 11, 12, 15, 17, 18].

While the initiative focused on enterprise CPE management within a national telecommunications provider, the lessons extend beyond both the telecommunications sector and the specific operational domain examined. Organizations operating in asset-intensive and service-oriented environments frequently encounter similar challenges related to coordination, visibility, ownership, and decision-making. The experience presented in this paper suggests that a capability-oriented BPM approach can provide a practical pathway for addressing such challenges while improving organizational agility, scalability, and resilience.

As a single-organization industry case study, the findings reflect one telecommunications context and are supported by operational evidence and organization-validated estimates. Further empirical studies across different organizations and industries would strengthen the generalizability of the proposed capability-driven BPM approach.

Future work will extend the capability model through deeper lifecycle data integration, advanced automation, process mining, predictive analytics, and AI-enabled operational intelligence while evaluating its applicability across other enterprise resource domains. For practitioners, the case demonstrates how capability architectures provide a practical mechanism for identifying, prioritizing, and coordinating BPM transformation initiatives in complex operational environments.

Acknowledgments

The authors gratefully acknowledge the support and contributions of the management and staff of Sri Lanka Telecom who participated in and supported the transformation initiative described in this paper. We particularly thank the Business Process Management, Planning, Product Management, Service Fulfilment, Platform Operation, Operation Support, Inventory Management, Regional Operation, and Information Technology teams whose insights, domain expertise, and active engagement contributed to both the implementation of the transformation and the development of this case study.

Declaration on Generative AI

During the preparation of this work, the authors used OpenAI ChatGPT (GPT-5.5) and Microsoft Copilot (Enterprise) to support language refinement, grammar and spelling checks. After using these tools, the authors reviewed and edited the content as needed and take full responsibility for the publication's content.

Disclosure of Interests.

The authors have no competing interests to declare that are relevant to the content of this article.

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