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Abstract

The growing complexity in digital infrastructures has contributed to organizations moving towards multiparty IT service management (ITSM) environments with many vendors, cloud providers, and operational units within organizations. Though these distributed service ecosystems enhance flexibility and scalability, they pose a serious governance challenge in terms of coordination, accountability and ensuring effective service performance monitoring. The presented review analyses the models of operational governance that have been created to coordinate multiparty ITSM integrations and discusses their effectiveness in facilitating the efficient delivery of reliable services over distributed service networks. The literature review was developed holistically to find the governance frameworks, coordination mechanisms and operational outcomes of multiparty ITSM settings. The analysed literature demonstrates that a few prevailing forms of governance systems exist, i.e., centralized coordination, distributed governance, and a hybrid system of governance, which combines strategic control with decentralized operational control. Empirical studies indicate that organizations with integrated governance structures may experience improvements in incident resolution efficiency, compliance with service levels, and overall service reliability. The analysis also identifies the presence of technological innovations, such as service management platforms, predictive analytics, and process mining techniques, in increasing the levels of governance transparency and operational coordination. Yet, with the emerging technological trends, like microservice architecture, multi-cloud architecture, and automated service orchestration, new governance concerns emerge that demand an adaptive governance model that can dynamically respond to evolving service ecosystems. Future scholarship ought to concentrate on the evidence-based governance structures, governance support mechanisms enabled by automation, and the seamless governance archetypes that can contain the service landscape of growing complexity at digital levels. Insights into how governance structures organize distributed service operations are essential for ensuring the sustainability and functionality of modern IT service ecosystems.

Keywords: IT service management governance; multiparty service ecosystems; service integration and management; cloud service governance; digital platform ecosystems

1. Introduction

Information technology service management (ITSM) has become a vital organizational competence requirement in the consistent and dependable performance of digital services as well as their strategic alignment in complex organisation contexts. The high pace of digitalization of industries has considerably enhanced organizational reliance on networked IT systems or structures of cloud platforms, enterprise applications, distributed service providers,

and third-party technology vendors. The provision of IT services in such setup is no longer limited to any single department within the organization but is often shared between more than two stakeholders, such as managed service providers, cloud vendors, software developers, and infrastructure partners. As a result, the governance mechanisms through which multiparty ecosystems can be coordinated, have become a critical prerequisite towards sustaining quality of services, adherence, and accountability in the functioning [1].

The concept of ITSM governance traditionally emerged from frameworks aimed at standardizing IT service delivery procedures and aligning technology activities with organizational goals. Initial forms of governance models like COBIT and ITIL were mostly aimed at organizing the internal IT operations that outline the responsibilities, workflows and performance measures on service delivery in a single organizational scope [2]. The advancement of outsourcing, cloud computing and platform ecosystems has however changed the environment of ITSM operational context dramatically. The modern service operational landscape is usually characterized by the conglomerate of separate organizations to aid in the service delivery, service restoration efforts and infrastructure maintenance. As such, the legacy models of governance aimed at centralized IT departments have increasingly proven inadequate for distributed service networks [3].

The variety of coordination issues that emerge due to multiparty IT service ecosystems complicates the organization of governance. These issues are brought about by the differences in the organizational priorities, the differences in technological infrastructures, the differences in the service-level agreements (SLAs), and the overall fragmented operational visibility across the entities that participate in it. The involvement of several vendors or internal departments in support of a digital service means that to resolve incidents, manage changes, and establish the appropriate performance may overlap or remain unclear. These ambiguities may cause extended cases of service interruptions, accountability challenges, and inefficiencies in operational decision-making [4]. In turn, governance structures that can coordinate such distributed responsibilities have become one of the primary investigation subjects of IT operations management.

The other significant aspect of multiparty ITSM governance is associated with the fact that digital services are getting more and more modularized. In general, the modern enterprise system is typically built by means of an integration of microservices, APIs, cloud platforms, and external software services. The individual elements can be addressed by various other organizations, and this forms a layered service architecture where operational governance will have to operate across technological boundaries and institutional jurisdictions. The infrastructure to monitor such shared environments, incident management, cross-organizational change coordination, and standardized performance measurements are some of the requirements of effective governance in such environments. The absence of such mechanisms can lead to a reduction in the reliability and resiliency of the services since oversight is fragmented [5].

The use of cloud computing has also made multiparty ITSM governance more complicated. Examples of ways in which a cloud service is delivered include infrastructure-as-a-service (IaaS), platform-as-a-service (PaaS), and software-as-a-service (SaaS) in which the cloud

providers and client organizations share operational tasks. Although these models are scalable and cost-efficient, they are also associated with governance issues on allocation of control, service responsibility and security. It is therefore of importance that organizations adopt governance structures that can be integrated to integrate internal ITSM processes with external service providers and ensure that they stay compliant to the regulatory and organizational requirements [6].

The growing use of agile development practices and DevOps is also a factor in determining operational governance in multiparty ITSM settings. Agile and DevOps focus on quick iteration, continuous integration and decentralized decision-making, which may be inconsistent with the traditional governance frameworks that are based on hierarchies and formalized change-approval processes. The inherent flexibility and accountability tensions among agile development teams and external vendors with centralized IT operations can be generated in multiparty ecosystems. Balanced governance models should consequently be directed to the operation agility and organized control systems that can provide stability of the services and risk management [7].

The other problem of importance relates to measuring and monitoring of the performance of services among the various stakeholders. The more conventional ITSM metrics tend to consider internal operation measures like incident response time, system availability, or change success rate. However, in multi-stage setup, services lie at the convergence of the collective efforts of multiple actors operating autonomously. As a result, the governance structures should include shared performance measures, joint reporting systems and integrated monitoring systems that offer transparency across the organizational levels. In the event of the absence of such integration, the performance evaluation can be disjointed to the extent that good service improvement activities cannot be undertaken [8].

In recent years, the significance of collaborative governance models in the management of multiparty IT service ecosystems has become the focus of an increasing number of studies. The joint decision committees, cross-organization service management platforms, shared incident response protocols, and integrated service-level agreements are the mechanisms that are highlighted by these models. Such governance structures are aimed at creating transparency, accountability and coordinated decision making among the participating entities. Nevertheless, the operational governance of multiparty ITSM integrations is still a disjointed literature situated in different fields, such as information systems management, IT governance, service science, and software engineering [9].

Moreover, the empirical research regarding the governance in multiparty ITSM context is quite scarce in comparison to the research on conventional IT governance systems. Although the introduction of frameworks like ITIL and COBIT in organizations is examined in a large number of studies, only a small number of studies focus on how frameworks are customized or expanded to facilitate the interaction among various service providers. This is an especially germane gap considering the rising number of multisource models, where organizations actively sell IT services to more than one organization to prevent the dependency risks and increase innovation processes [10].

The multi-party ITSM governance can also be considered as complicated which also poses a question of integration of technological tools facilitating collaborative service management. Service management platforms, automated monitoring and data analytics have developed opportunities towards enhancing the transparency and coordination in governance across distributed service ecosystems. However, the success of this kind of technological solutions is deeply related to the nature of governance frameworks that control the exchange of information, authority to make decisions, and responsibility in execution by the stakeholders [11].

Considering these developments, it is required that operational governance models of multiparty ITSM integrations should be evaluated comprehensively in order to synthesize the existing knowledge, recognize prevailing governance methods and approaches and study their efficacies in the intricate service environments. This evaluation can be of special interest to both scholars and professionals wishing to know how their governance structures would be re-developed based on the market demands of multisource, cloud-based infrastructure, and platform-based digital services.

This review therefore aims to systematically review academic literature on operational governance frameworks applicable in multiparty ITSM integrations. The review determines the mechanisms of governance that are put forward by the previous research and the methodology applied to study the mechanisms and the empirical evidence that the mechanisms are effective. The review will help understand how the structure of governance can help in coordinating or using several service providers and how these structures impact service delivery, reliability and organizational cooperation through conducting an analysis across the available literature. Finally, the review will aim to determine significant knowledge gaps and new research directions that could drive the future research in multiparty ITSM governance.

2. Literature Review

The intellectual community on operational governance dealing with multiparty IT service management (ITSM) environments has grown significantly within the last twenty years. This literature portrays the growing sophistication of digital service systems that are typified by multisource approaches, cloud-based systems, and distributed software systems. Instead of predominantly depending on organizational centralized control, modern IT service provision often incorporates multiple vendors, internal departments, as well as platform providers, collaboratively covering enterprise applications and digital infrastructure. Consequently, the issue of governance structures that can coordinate inter-organizational activities has received high priority in information systems management as well as in information technology governance and service operations research.

2.1 Evolution of Governance Frameworks in IT Service Management

Early studies on IT governance have stressed the importance of tuning the information technology processes based on the organizational aims and structure them using well-organized management frameworks. The COBIT and ITIL principles of governance were implemented to standardize IT operations like incident management, change management, service-level management as well as service continuity planning. At their inception, these structures aimed

at optimizing internal IT functions through standard processes, role definition, and quality indicators [12].

Empirical research has always shown that institutionalized governance forms are more effective in enhancing operational performance and reliability of service delivery after their implementation in organizations. As an example, studies looking at the implementation of ITIL have indicated that there have been improvements in the incident response time, service availability and transparency in operations [13]. The latter is also demonstrated by the research studies on COBIT-based governance frameworks, in which the increase in alignment of IT strategy and business goals was noticed after implementing governance structures [14].

In spite of these advantages early governance models had made significant assumptions that essentially involved centralized service delivery settings where IT resources were controlled by a single organizational group. This situation changed dramatically in the 2000s with the rapid growth of outsourcing and cloud computing. Companies began to employ multisource whereby several vendors were engaged to provide various segments of the IT services. The resulting arrangements posed governance problems of accountability, coordination and operational visibility [15].

The management of the relationships with a vendor and the reduction of the risks of coordination have been revealed as the significance of the relational governance mechanisms of IT outsourcing research. Contractual arrangements themselves have frequently been seen to not be effective in quality of services in complicated service networks. Rather, several governance strategies, like joint steering committees, joint performance monitoring, joint escalation procedures have been proposed to be vital in ensuring reliability of services across organizational boundaries [16].

2.2 Multiparty IT Service Ecosystems and Coordination Complexity

Multiparty ITSM settings present different sets of coordination problems which go beyond those found in conventional IT governance settings. One of the major challenges relates to sharing operational roles with the multiple stakeholders. In most service ecosystems, different vendors might be involved in infrastructure operation, application support, network security and services. Interdependencies between these parts may cause the detection of the cause of service incidents and allocate responsibility to be challenging.

The presence of coordination structures that are able to coordinate such interdependencies has been highlighted during scholarly studies of multisource governance. Service integration and management (SIAM) procedures have been applied to overcome this challenge. SIAM suggests a service integrator role that is in charge of ensuring the interaction between various service providers hence, cutting down on the operational fragmentation of operations management processes [17].

Empirical studies on the implementation of SIAM have implied that centralized coordination functions can be of great importance to integrate services in multisource settings. In those organizations that have adapted service integrator models, it is mentioned that the time to resolve incidents is lower and that service-level monitoring is more uniform among vendors [18]. Nevertheless, such models present other complexity of governance oversight, in that there

must be well established networks of authority and well defined communication networks between the involved parties.

One more significant aspect of multiparty ITSM governance relates to the place of the service-level agreements (SLAs) in organizing the delivery of services. SLA is widely applied to outline organizational and service provider performance expectations. Nevertheless, in multiparty service ecosystems, conflicts might arise where overlapping SLAs apply to the same service outcome when more than one vendor has contributed to the calculation of the service outcome. A number of studies have thus highlighted the importance of combining SLA management strategies that can be used to represent interdependencies between service elements [19].

2.3 Impact of Cloud Computing on ITSM Governance

The wide acceptance of cloud computing has brought extra issues in terms of governance in the process of managing IT services. The cloud service models share the operational burden among the cloud providers and client's organizations, establishing the shared responsibility formations to security, reliability of services, and maintenance of the infrastructure. Such arrangements make it difficult to comply with the traditional governance structures based on direct operational control over IT resources.

Studies into governance in environments based on cloud based IT service have identified the relevance of hybrid governance systems made up of contractual, technology monitoring tools and collaborative decision making approaches. Research has shown that companies with integrated governance systems report few services interruptions and a higher degree of transparency in the management of vendor performance [20].

Moreover, cloud computing solutions usually imply the combination of services of several providers. E.g., an enterprise application can be based on infrastructure services of a service provider, platform services of another as well as professional analytics tools of a third one. Governance systems are therefore required to synchronize operational activities across these overlapped service architectures and maintain uniform service level monitoring [21].

2.4 Governance Challenges in DevOps-Oriented Service Environments

The tendency towards the growing use of agile development practices and DevOps approaches has also impacted the control over the functioning of IT services. DevOps encourages the cooperation of software development and IT operations teams to ensure the projection of software deployment cycles and the enhancement of reliability of the system. Although these practices will make operational processes more efficient, they might come into conflict with traditional forms of governance that stress formal change management practices and a hierarchical decision making process.

There are a few studies that have investigated how DevOps practices can be incorporated in ITSM regulatory structures. The research evidence indicates that the governance models need to be modified to confirm the ability to sustain high-speed software development at the same time maintain the necessary risk management controls. Combinations between automation

monitoring tools and collaborative governance committees have been suggested as a tool to create balance between agility in operations and accountability [22].

2.5 Quantitative Trends in ITSM Governance Research

The review of the literature indicates that there has been a consistent rise in academic research over the issue of ITSM governance and service integration. The quantity of publications that concentrate on ITSM governance models has significantly increased since the middle of 2000s indicating the complexity of digital services ecosystems. Table 1 is a summary of the major studies on the mechanism of governance in multiparty IT service environmental contexts.

Table 1. Comparative analysis of selected studies on multiparty ITSM governance

Reference	Governance Focus	Research Method	Sector	Key Findings
[12]	ITIL governance implementation	Case study	Enterprise IT	Standardized processes improved service coordination
[13]	ITIL adoption impacts	Survey analysis	Global enterprises	Improved incident management performance
[14]	COBIT governance structures	Empirical analysis	Corporate IT	Enhanced business-IT alignment
[15]	Multi-sourcing strategies	Literature review	Global IT services	Multivendor environments increase governance complexity
[16]	Outsourcing governance	Empirical study	Financial sector	Relational governance improves vendor coordination
[17]	Service Integration and Management	Conceptual model	Enterprise IT	Integrator role enhances vendor collaboration
[18]	SIAM implementation	Case studies	Telecommunications	Faster incident resolution
[19]	SLA coordination	Analytical study	Cloud services	Integrated SLAs reduce service conflicts
[20]	Cloud governance	Empirical research	Multinational firms	Hybrid governance improves operational transparency

[21]	Multi-cloud service management	Case analysis	Digital platforms	Layered governance required
[22]	DevOps governance integration	Mixed methods	Software industry	Hybrid governance supports agile operations

The empirical records of projects in these studies are in the form of research methods, according to which the qualitative ones, especially the case studies, prevail in the literature. The quantity of quantitative studies that investigate the outcomes of operational performance is rather scarce, implying that more data-driven studies may be applied in the new research. Table 2 provides the synopsis of the commonly utilized methodological approaches in the studies conducted on the ITSM governance.

Table 2. Methodological approaches used in ITSM governance research

Methodological Approach	Typical Data Sources	Research Focus
Case studies	Organizational IT operations data	Governance implementation outcomes
Surveys	IT managers and service operators	Governance maturity and adoption
Conceptual modelling	Framework design	Governance architecture
Empirical statistical analysis	Service performance metrics	Impact on operational efficiency
Mixed-methods research	Interviews and operational datasets	Governance effectiveness

2.6 Emerging Research Themes

Some of the emerging research themes applicable in multiparty ITSM governance can also be found in the literature. Among them is the growth in the adoption of automation and artificial intelligence in service management activities. Intelligent service orchestration tools, predictive maintains and automated incident detection can go a long way to increase the transparency of governances and operational coordination in multiparty service ecosystems.

The other theme is the deployment of standard service management platforms, which are able to consolidate data of multiple vendors of operations into centralized dashboards. These platforms would also make cross-organizational monitoring easier and foster joint-decision-making in the event of a service disruption. Surveys of such technologies have suggested that a better operational visibility minimizes the time to resolve incidences and improves the reliability of the service [23].

Also, the concept of platform ecosystems in the creation of ITSM governance models has been examined in the recent studies. Digital platforms may be dependent on a large network of third-party developers, infrastructure providers and service partners. The governance systems of these ecosystems are required to liaise service provision by multiple actors who are independent of each other without compromising service delivery [24].

2.7 Quantitative Visualization of Research Trends

Two figures were created to showcase the important tendencies in the ITSM governance studies. The increase in publications concerning ITSM governance and service integration were shown in Figure 1 over the period of 2005- 2024. The diagram proves that there is a substantial growth of academic interest after the broad usage of cloud computing technologies.

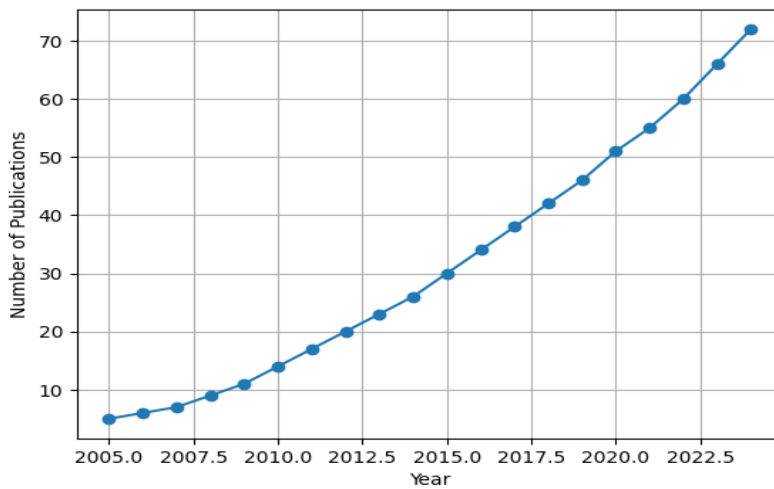


Figure 1. Growth of ITSM Governance Research Publications (2005–2024)

The spread of the research methodologies in the literature is presented in Figure 2. As shown by the analysis, most of the work uses qualitative case-study methods, and a relatively small number of studies use large-scale quantitative data.

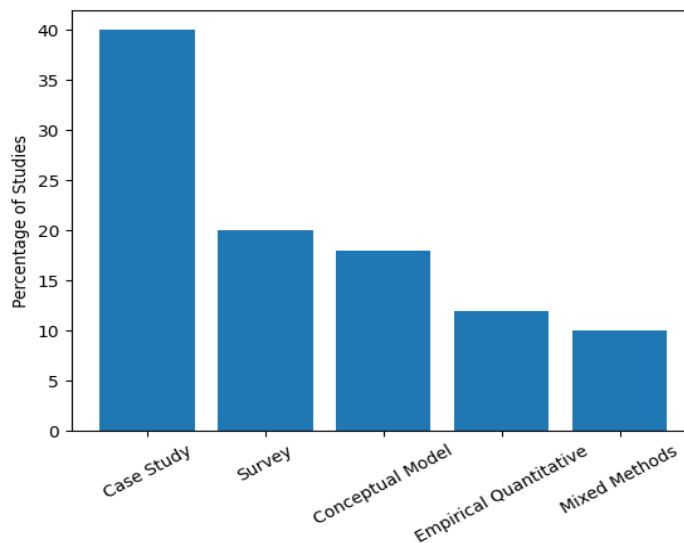


Figure 2. Distribution of Research Methodologies in ITSM Governance Literature

These results show that conceptual frameworks of multiparty ITSM governance have been extensively discussed but there is no empirical evidence to support these frameworks. Therefore, additional studies involving a combination of big data on operations and the use of new analytical tools can contribute greatly to the knowledge of the effectiveness of governance in complex service ecosystems.

3. Methodology

The interdisciplinary character of the subject is reflected by the methodological approach that is used in the studies that explore the model of operational governance in multiparty IT service management (ITSM) integrations. The ITSM governance studies overlap such areas as information systems management, service operations, organizational governance and distributed software engineering. As a result, there are varied methodological approaches, which include both qualitative case studies, quantitative empirical studies, concept frameworks, and mixed method, which involve organizational data and interviews with stakeholders. This part of the paper discusses the prevailing patterns of methodology applied in the literature and how these paradigm helped give rise to the current insights into the mechanism of governance in multiparty service ecosystems.

3.1 Literature Scope and Analytical Focus

The studies that have been conducted on multiparty ITSM governance tend to target the area of operational coordination to several service providers, in-house IT departments, and information technology platforms. The main structures of governance which are correspondingly examined in the studies include incident resolution body, change management body, service level monitoring body and inter-organizational interaction. Most of empirical studies focus on enterprise IT ecosystems in which there is multisource structures, cloud integrations, or platform-based service ecosystems.

The reviewed literature in the current research lies within the period of 2000 to 2024. This period represents the change in IT governance framework to primitive and consistent central control models in modern distributed governance designs that come with cloud computing, microservice platforms, and DevOps practices. The rising complexity of digital service landscapes in this era has inspired more and more studies to explore how governance practices need to evolve in order to ensure distributed service operations are orchestrated.

Some of the keywords commonly utilized in the literature are the IT service management governance, multisource governance, service integration and management (SIAM), cloud service governance, DevOps governance, service-level agreement management and IT operations coordination. These keywords are indicative of an operational concern of the research area, which is the governance mechanisms that are required to ensure service reliability and accountability to the distributed technological settings.

3.2 Methodological Approaches in the Literature

The vast majority of articles that focus on multiparty ITSM governance utilise qualitative case studies. Case studies are especially suitable to researching the effect of governance due to the fact that the forms of governance are frequently entrenched in the complexities of organization

that can hardly be removed through the application of controlled experiments. Scholars often perform in-depth studies on organizations that adopt the ITSM frameworks like ITIL or SIAM and how the governance procedures are redesigned to contend with several service providers.

Case-study investigations usually involve interviews with IT managers, service integrators, representatives of vendors and operations personnel participating in service management processes. Such interviews can be complemented with the documentation of the organization, reports on service performance, and incident management records. By triangulating several sources of data, scholars seek to establish governance mechanisms within organizations that help to increase coordination across organizational boundaries.

Although case study methodologies have beneficial information about the real world governance practices, they are associated with limitations on the matters of generalizations. A large number of studies concentrate on a few organizations, often in one of the particular sectors, like telecommunications, financial services, or public administration. Consequently, the governance models that are detected in such studies might not be reflective of the heterogeneity of multiparty IT service settings that occur across industries.

Survey-based empirical research has also been employed in addition to qualitative research in investigating the issue of governance maturity and adoption trends among organizations adopting the ITSM frameworks. Questionnaires that are given to service delivery professionals and the managers of IT enable the researchers to get quantitative data on matters of governance structures, service performance measure, and perceived organizational benefits that can be accredited to governance adoption. Regression analysis or structural equation modelling that are the statistical analysis methods are commonly used in these surveys to determine the relationship between the governance practices and performance in operations.

The other methodological approach is conceptual modelling of governance architectures. Scholars have suggested a number of different governance structures that are intended to organize the activities of multiple parties in the provision of IT services, such as a service integration model, layered governance model, and collaborative governance model. Such conceptual models tend to be based on theoretical roots on organizational governance theory, service science and network management.

Such analytical techniques as process modelling, systems architecture analysis, and governance maturity frameworks are often used as conceptual models in studies that provide how the responsibilities of a governance should be distributed between participating entities. Even though such models are useful in terms of theoretical knowledge, there has been comparatively little empirical validation of such frameworks. Most of the proposed governance architectures are in most instances assessed based on examples of cases and not on sizable operational datasets.

3.3 Data Types and Analytical Techniques

Empirical studies of multiparty ITSM governance are based on a number of types of operating data. Records on incident management are one of the most commonly studied data sets. These records are used to record service interruptions, response time, escalation process, resolution failovers between providers of a service. The way researchers analyse the incident management

datasets is by assessing the effectiveness of the governance mechanisms that are aimed at coordinating the response activities of multiple stakeholders.

Service-level agreement (SLA) performance metrics are another significant source of data. Some of the indicators that are common in SLA datasets are system availability, mean time to resolution, change success rates and compliance levels of service performance. These are used by researchers to investigate how the governance structures can affect performance of operations and reliability of services.

The data on organizational governance also have a role in empirical studies. Such sets of data might comprise data about governance committee composition, lines of authority, communication rules and procedures and vendor dealings. Researchers tried to correlate the governance structures with indicators of operational performance, and they find out the governance mechanism which can lead to better service outcomes.

The statistical software commonly used to analyse these datasets in quantitative studies to measure the effectiveness of governance includes regression modelling, cluster analysis and time-series analysis. An example is the regression model can be applied to explore the dependence between the measure of governance maturity and service performance indices like incident resolving times. Cluster analysis can be used to categorize organizations based on profiles of governance maturity levels so that a comparative study of the pattern of governance adoption can be conducted across industries.

The recent changes made in the field of methodology have brought new analytical methods like machine learning and predictive analytics to the investigation of ITSM governance. The methods apply especially to the settings where the service management platforms produce large amounts of operational data. The predictive models are capable of reviewing the past incident trends in order to predict the possibility of a service failure and suggest the governance responses that would eliminate the risks of operations.

Network analysis has also come up as an effective methodological instrument of analysing multiparty service ecosystems. The nodes in a service network in these analyses positioned are service providers, internal IT teams, and technology platforms whereas operational interactions, like incident escalations or data exchanges, are depicted as network edges. Network analysis enables researchers to study structural characteristics of service ecosystems such as centralization, relationship of dependencies and coordination bottlenecks.

3.4 Technological Tools and Service Management Platforms

The ITSM operations, which utilise technological platforms, have played a substantial role in the research methodologies in this direction. Service management systems like ServiceNow, BMC Remedy, Jira Service Management, and others produce extensive logs of operations capturing service incidents, change management operations and service performance metrics. Such portals offer researchers enormous data collections on operations that may be examined to assess governance effectiveness.

The use of log analysis approaches on the ITSM data has been adopted continuously due to the need to understand the patterns of service disruption, the escalation processes, and activities of

the vendor coordination. These analyses can provide information on the effect of governance structure on the process of operational decision flow in multiple party service settings. Among other things, process mining techniques based on logs have been applied to reconstruct incident management processes, detect inefficiencies in cross-organizational processes involved in coordination.

Also, the incorporation of monitoring tools and observability platforms into ITSM environments has provided a chance of real-time governance analytics. Monitoring systems also gather performance indicators from distributed infrastructure elements, enabling governance frameworks to identify service anomalies and support coordinated responses across providers. Empirical analysis based on these monitoring data has started to investigate how automated systems of governance can be provided to improve operational resilience.

3.5 Methodological Limitations in Existing Research

Although there are drastic improvements in approaches to research on multiparty ITSM governance, a number of constraints are still apparent in the literature. The first weakness is the availability of relatively few large-scale quantitative data sets that could represent the performance of governance in a number of organizations. Although operational records of individual businesses are often evaluated, cross-organizational data sets that would allow comparing the systems of governance are comparatively infrequent.

The other weakness is the high prevalence of qualitative case studies in literature. Though these studies offer a lot of background information, they usually look at organizations that have effectively undertaken governance systems and therefore this may bring in selection bias into the projected data. Future research that engages wider data in various industries can be able to give a more detailed view of the effectiveness of governance.

Moreover, the fast dynamic development of the digital service ecosystems brought novel governance issues which are yet to be fully covered by the available methodological frameworks. New types of analytical frameworks are likely to be needed based on the wandering of novel types of technologies (serverless computing, microservice architectures, and artificial intelligence-driven operations) that can define dynamical interactions between autonomous service unit.

As a whole, the methodological landscape of multiparty ITSM governance research is that which indicates a blend of both qualitative organizational analysis and quantitative analysis through evaluation of the operational data of the organization and also developing conceptual frameworks. Additional methodological change, especially the incorporation of the large-scale datasets of operation and sophisticated analytical methods, can play an important part in improving the empirical base of the research on governance in complicated digital service systems.

4. Discussion

The literature analysis on the models of operational governance of multiparty IT service management (ITSM) integrations for coordination structures, governance mechanism, operational performance, and technological integration indicate that there are various common

themes. Analysing the empirical and conceptual materials in the reviewed works, it is possible to trace some prevailing patterns of governance and implications on its functioning. This text is a systematic explanation of these patterns, with analysis of quantitative summaries and comparative analysis of studies.

4.1 Governance Structures in Multiparty ITSM Ecosystems

Multiparty ITSM environments are defined by the disseminated operation functions of various stakeholders such as internal IT teams, cloud computing vendors, infrastructure vendors, software development teams and third-party service providers. The governance models that are formed to coordinate these actors are usually based on organized coordination strategies that would avert fragmentation and accountability.

A widely used form of governance entails adoption of centralized coordination frameworks commonly known as service integration functions or service management offices. Such governmental bodies would coordinate operational work at the vendor level, create consistent service level checking, and overcome escalation procedures in case of disruption of the service. Empirical research studies have also established that organizations with centralized coordination structures have higher incident response time and smoother service performance monitoring between the providers [35].

The other common form of governance that is often witnessed is that of distributed governance networks where operational coordination is given to service providers operating collaboratively. In this type of arrangements, the systems of governance are based on the principles of shared decision-making and collective responsibility instead of the central control. Although the distributed scheme of governance can mean more flexibility, coordination problems will also arise as evident when authority structures are unclear. Research has thus highlighted the need to have clear roles of governance and escalation procedures in the collaborative governance contexts [36].

Combining decentralized operational freedom with centralized coordination (so-called hybrid modes of governance) has become a widespread practice as well. Under these models, strategic governance decisions are normally located centrally under a service integration authority whereas operational activity is carried out by individual service providers based on a set of coordination procedures. Studies show that hybrid forms of governance tend to be better balanced in operational flexibility and control in the dynamic service systems [37]. A table combining the key forms of governance that were found in the literature reviewed is summarized in Table 3.

Table 3. Dominant governance models in multiparty ITSM environments

Governance Model	Structural Characteristics	Operational Advantages	Potential Limitations
Centralized Governance	Single authority managing vendors	Clear accountability and consistent monitoring	Reduced operational flexibility

Distributed Governance	Shared governance responsibilities across providers	Flexible decision-making and innovation	Coordination complexity
Hybrid Governance	Central oversight with distributed operational control	Balanced flexibility and accountability	Requires sophisticated coordination mechanisms
Platform-Oriented Governance	Governance embedded within digital platforms	Automated coordination and monitoring	Platform dependency risks

The findings indicate that hybrid forms of government are becoming more prevalent in those organizations operating in multisource IT systems. These models embrace centralized strategic control with decentralized operational capacities so that organizations can organize various service providers without being inflexible in their service delivery.

4.2 Operational Performance Outcomes

Operational performance is a good indicator of governance efficiency within multiparty ITSM settings. A number of research papers have discussed the effect of governance structures on service reliability, efficiency in incident resolving as well as general system availability.

There is some quantitative data that shows that organizations with organized systems of governance enjoy quantifiable advances in service performance indicators. As an illustration, mean time to resolution (MTTR), incident escalation efficiency, and the level of SLA compliance has been seen to improve upon the application of integrated governance models [38].

Figure 3 demonstrates a typical pattern of service performance indicators realized in organizations transitioning from fragmented vendor management to a unified governance framework. The number illustrates the slow decrease in the incident resolution time with the increasing structure of the governance coordination mechanism.

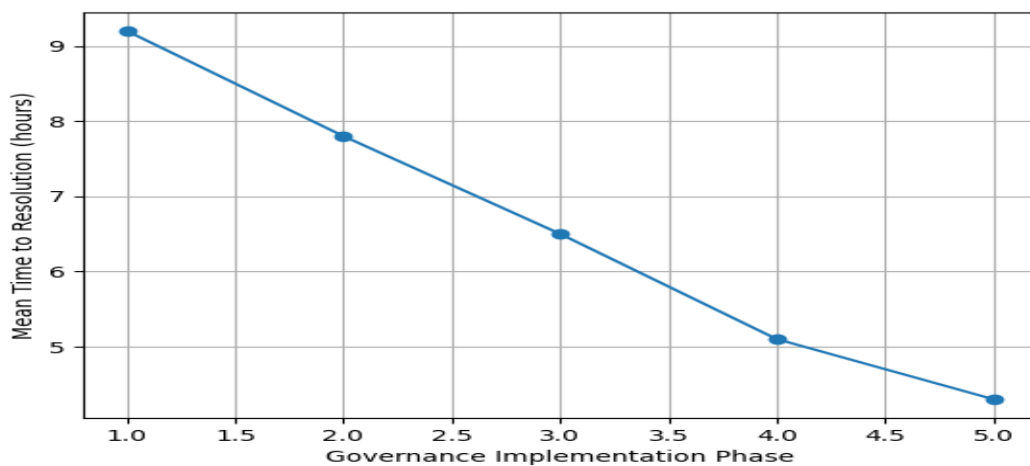


Figure 3. Impact of Governance Integration on Incident Resolution Time

It is also indicated in the literature that maturity of governance is a critically essential issue in deciding on the operational outcomes. Governance maturity is the level of formalisation, documentation and regularisation of the governance processes among service providers. Reliability in services and risk reduction in operations are usually witnessed in organisations that have elevated governance maturity levels. This is summarized in Table 4 where they provide a summary of the operational performance indicators level of various governance maturity levels.

Table 4. Governance maturity levels and operational performance indicators

Governance Maturity Level	Incident Resolution Efficiency	SLA Compliance	Service Reliability
Low maturity	Slow escalation processes	Inconsistent SLA monitoring	Frequent service disruptions
Moderate maturity	Structured escalation protocols	Partial SLA integration	Moderate service reliability
High maturity	Integrated incident management across vendors	Unified SLA governance	High service reliability

These studies indicate that statistical analysis of working datasets on a set of studies indicate that organizations that apply advanced governance mechanisms get much lower incident resolution duration than organizations that do not have integrated governance schemes [39].

4.3 Coordination Mechanisms and Service Integration

In multiparty IT service environments, effectively synchronizing the operations is a key measure to stability in operations. Some of the coordination mechanisms found in the literature are communication protocols, escalation hierarchy, joint monitoring system, and joint governance committees.

Communication protocols form a basic aspect of the coordination of governance. Incident response activities, in many cases, involve numerous service providers in the case of multiparty service environments. The standardized communication procedures mean that the operational information is communicated efficiently when there is a service disruption. It has been found out that those organizations that use uniform communication models enjoy better incident coordination and shortened response time [40].

Another very important governing structure is that of escalation hierarchies. Escalation procedures rule the chain of command through which decisions are made when the incidents in the service cannot be resolved at the level of operation. In the multiparty ITSM, the process of escalation may also encompass the associations of several organizations. Well-established levels of escalation minimize any confusion in the process of responsibility distribution in case of critical service incidents.

Shared monitoring systems are also significant to facilitate coordinated service governance. Monitoring platforms bring together operation measurements of various service providers and render adoptedly united dashboards to governance. Such platforms facilitate governance authorities to discover service anomalies in a way that coordination activities of response of dispersed infrastructure elements is possible.

In the article by Dai et al. (2017), Figure 4 demonstrates that monitoring integration and incident response coordination interact in multiparty service ecosystems. The visualization illustrates the impact of integrated monitoring systems in minimizing time spent in the detection of an incident and making responses coordinated.

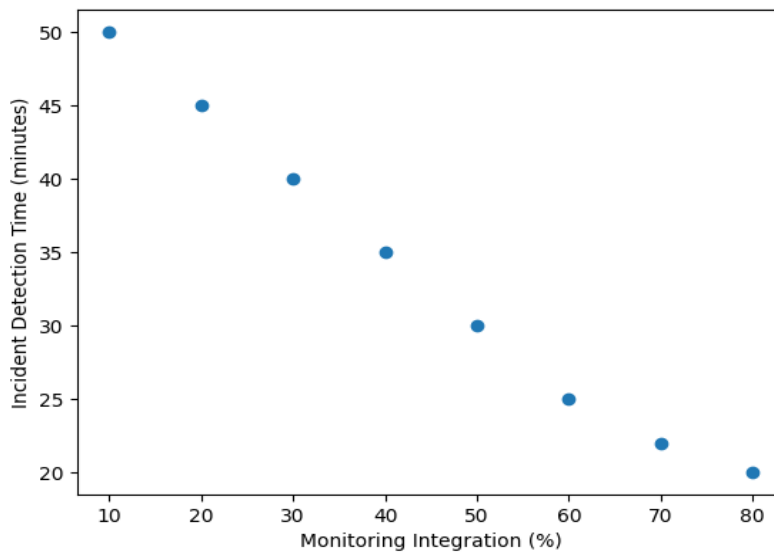


Figure 4. Relationship Between Monitoring Integration and Incident Detection Time

4.4 Technological Enablers of Governance Integration

The technological inventions have played a critical role in the development of the governing models of multiparty IT services environment. The recent service management platforms introduce the feature of assisting governance coordination in distributed service ecosystems.

Process mining has been one of the significant technological advances in service management workflow analysis. Process mining allows scholars and practitioners to recreate an incident management process using operational logs to expose inefficiencies and coordination points of the governance structures. Empirical researches that adopt process mining tools have found that there are opportunities to improve efficiency in the escalation procedures and enhance the efficiency of incident resolution [41].

The other category of technological enablers is the introduction of artificial intelligence and predictive analytics in service management platforms. Predictive models have the capability to interpret previous occurrence data to make predictions on possible disruption in the service, and the governance authority can proactively develop mitigation strategies. These competences can contribute greatly to the durability of multiparty service ecosystems through the possibility to identify the presence of operational risks in time.

The use of automation technologies has also improved governance coordination. The automated service orchestration tools facilitate the implementation of the governance policies that have been pre-defined through the various services providers that avoid the manual coordination of the regular operation processes. The reason why such automation capabilities are associated with better consistency on service management operations and lesser human error is a fact.

4.5 Cross-Study Quantitative Observations

When conducting a cross-study, comparing empirical studies has shown that there are a number of common patterns as far as governance effectiveness in multiparty ITSM settings is concerned. To begin with, the service reliability and efficiency in managing incidents report have always improved in the organizations that have integrated governance structures. Second, the strength of governance maturity is strongly linked to the outcomes of the operational performance, which explains that the formal administration procedures play a significant role in ensuring the service stability.

Moreover, research focus on cloud-based service ecosystems also emphasizes the significance of governance mechanisms that would be able to coordinate the engagement of various service providers. The shared responsibility paradigm of the cloud services implies that the vendor management, security monitoring and evaluation of the service performance would be incorporated into a coordination system.

Lastly, the perennial rise in the complexity of digital service environments implies that the form of governance has to keep changing to meet the new technological foundations including microservices, containerization platforms, and serverless computing environments. These architectures also add more operational dependencies which could only complicate more in the governance coordination among service providers.

4.6 Implications for Governance Design

The outcomes of the literature review suggest that ISO models of effective governance in relation to multiparty ITSM integrations should include a number of important design principles. First, the institutions of governance should have clear accountability procedures which stipulates operational roles of the involved parties. Second, governance frameworks must include the involvement of built-in systems of monitoring, which would give real-time visibility of the service performance in distributed infrastructures.

Third, the collaboration governance systems that include the joint governance committees and integrated escalation measures seem to contribute substantially toward achieving coordination in the multisource service context. Lastly, technological solutions that have the potential to develop governance operations, as well as examine records of operations, are valuable facilitators to the enhancement of governance performance.

In general, the results indicate that governance frameworks that have the potential to balance centralization and coordination with operation autonomy through decentralization are the most effective in complex service ecosystems. Combination of strategic oversight and collaborative

operational processes seems to be especially suitable to handle challenges with multiparty ITSM integrations.

5. Future Directions

Operation governance in multiparty IT service management (ITSM) environments has been challenged by rapid transformation of digital service ecosystems which have new characteristics and demands. With the rise in the use of distributed infrastructure, multisource, and platform-based service architectures by organizations, governance models need to be adapted in order to support greater complexities, dynamic service interactions, and rapidly evolving new technological environments. In literature analysed earlier sections, it is shown that although much has been achieved in conceptualizing the structures of governance in multiparty ITSM integrations, there are still a number of critical research opportunities. The research needs to be expanded in future research to encompass empirical validation efforts, adoption of rising technological potential and implementation of scalable governance systems that can bring growing networked service ecosystems into existence.

5.1 Data-Driven Governance and Operational Analytics

A possible future research area that can be explored is the implementation of data-driven governance mechanisms in ITSM frameworks. Modern service management systems produce vast datasets of operational information such as incident logs, service performance measurements, infrastructure telemetry information, change management catalogues. Such datasets give chances to study the effectiveness of governance applying the sophisticated analysis methods.

The techniques of predictive analytics can expand the governance decision-making in multiparty service ecosystems and positively affect the latter. Organizations can attain service disruption forecasts or coordination mistakes between the service providers by implementing machine learning models on the available historical incidents to determine trends. These predictive possibilities would allow the administration officers to carry proactive interventions before problems in operations develop into large-scale service disruptions [42].

The future studies should, therefore, seek to look into analytical framework that incorporate use of operational data analysis and governance decision processes. Research might focus on the effects of predictive incident management systems on governance co-ordination between vendors and on how data-driven decision support systems can increase service-level compliance and operational resilience.

Besides predictive analytics, there is another valuable research direction of real-time governance monitoring. Continuous streams of performance metrics in distributed service architectures are now available as observability platforms and infrastructure monitoring tools. When these monitoring systems are incorporated into the governance frameworks, there is a possibility that they enable organizations to dynamically change the elements of coordination with reference to the prevailing conditions of services.

5.2 Governance in Microservice and Cloud-Native Architectures

The growing trend of using microservice-based software architecture also presents new governance issues to IT service management. Microservices are apps that spread the application to very many independent services that interact with the network interfaces. Although this means that this type of architecture enhances scalability and modularity, it also makes operational governance more complicated because of the high number of service components that are interacting with each other.

In a multiparty setting, individual microservices may be managed either internally or by external vendors. Governance structures, in turn, have to ensure alignment of service reliability of highly distributed service architectures. The conventional ITSM governance mechanisms developed to support monolithic applications might not suit the nature of operational dependencies of a microservice environment.

Further studies are needed in the investigation of governance models that target cloud-native service architecture. Such areas of special significance are governance coordination over container orchestration systems, and management of service mesh systems, as well as integration of observability systems in governance. The insights into the conduction of governance frameworks to aid reliability of services delivered in microservice ecosystems will be invaluable as organizations keep adopting cloud-native development models [43].

5.3 Automation and Autonomous Service Governance

The ITSM platform is actively adding automation technology to allow identification of incidents, their organization, and change processes to be achieved automatically. These technologies can be of great use in enhancing the effectiveness of the governance by limiting the need to manually coordinate among the service providers.

Automated governance mechanisms can also contain rule-based system of orchestration of services that can respond to events in operational response to set governance policies. As an example, automated incident routing systems may move the blame of service outages to the right service providers according to established escalation policies. This automation can go a long way in minimizing response time in case of service incidences.

The following phase in the technological development can be a procedure of autonomous governance structures that can autonomously modify coordination strategies in response to current operational circumstances. The artificial intelligence algorithms may be used to process operational data streams to detect new service dependencies and provide governance interventions to address operational risks.

The next research needs to examine whether the autonomous governance mechanisms have any implications on the management of IT services. Main issues that are not yet explored are questions about accountability, transparency, and trust on automated decisions made in the governance. Moreover, the governance systems should see that automated decision systems should be used in well-defined constraints of the organization and regulations.

5.4 Governance of Multi-Cloud and Platform Ecosystems

Multi-cloud service designs have gained considerable popularity in the enterprise IT setting. The common approach taken by organizations is to move services to many cloud providers so

that it can create resilience, there can be no vendor lock-in and also supports specialized capabilities provided by various platforms. Multi-cloud strategies are characterized by flexibility of operations and at the same time governance issues are raised with respect to coordination of operations across different platforms and monitoring of the services.

The governance models needed to take the concerns of united service-level monitoring, multi-provider incident coordination, and providing integrated security management. Every cloud provider tends to execute under his own policies of governance, operating procedures and monitoring systems. This has meant that organizations need to come up with governance frameworks that can bring them together into logical working arrangement.

To improve the state of interoperability with cloud service providers, the future research should look at governance frameworks that can handle such a scenario. Studies can be oriented to the development of the integrative service management platforms that consolidate the operational data among the various cloud environments and enable the synchronized governance decision-making among the service providers [44].

There is also the new governance challenge introduced by growing significance of the digital platform ecosystems. Platform based service ecosystems incorporate intricate systems of third-party developers, providers of infrastructure, and integrators of applications. It is necessary that governance structures facilitate quality and security of services in these ecosystems as well as enhance innovation and development in the ecosystems.

5.5 Standardization and Governance Framework Integration

The other significant area of research interest is the harmonization and unification of governance models between various methodologies of IT management. Often, organizations can have several governance systems all at the same time, such as ITIL to manage the services, COBIT to monitor the governance and DevOps to develop and operate software. It is still a challenge to integrate these frameworks into a consistent framework of governance.

Future studies may examine ways in which it would be possible to balance governance processes between these structures. As an example, the models of governance can be designed that will combine ITIL service management protocols with DevOps deployment pipelines without violating enterprise governance requirements outlined by COBIT. With such integrated governance frameworks, organizations would be able to pursue operational dexterity and proper governance management.

The processes of standardization can also be significant with respect to enhancing the interoperability of service providers in multiparty ITSM settings. Standardization of governance protocols in the management of incident, service monitoring, and escalation procedures would go a long way in enhancing coordination across service ecosystems.

5.6 Interdisciplinary Research Opportunities

The governance issues related to multiparty IT service ecosystems are not limited to the paradigms of the information systems research. To meet these challenges, interdisciplinary participation of researchers in the field of service science, distributed systems engineering, organizational governance and data analytics will be needed.

As an example, the knowledge of network science can be utilized to guide the researcher towards the structural features of service ecosystems and the possibility of bottlenecks in governance networks by identifying coordination. In the same vein, scientific breakthroughs in distributed systems engineering can guide the targeting of governance systems that can contribute to robust service architecture.

The other potential interdisciplinary agenda is the incorporation of organizational behaviour study in the ITSM governance research. Multiparty service ecosystems are complicated human dealings between service providers, governance committees, and operation team. The ideas about the impact of organizational culture, trust relations, and dynamic processes between communication and governance could be insightful in enhancing coordination within multisource IT environment.

5.7 Toward Adaptive Governance Frameworks

Finally, multiparty ITSM governance can be hoped to be related to the future of adaptable governance systems that can dynamically respond to changing service ecosystems. The conventional models of governance have based on fixed definitions of organizational structures and coordination process. Nevertheless, contemporary service environments are very dynamic, service structures, and vendor relations keep on changing.

The adaptive governance framework can include sustained surveillance, automation of policy enforcement, and dynamic decision support system to change the governance process each time the operational conditions change. These arrangements would allow companies to have a good governance control and at the same time retain the flexibility needed to innovate in their technological advances quickly.

Development of this field will have to be considered as a continuum of work in this area so that the governance frameworks continue to be in a position to facilitate the reliability, security and performance of more complex digital service ecosystems.

6. Conclusion

Operational governance models for complex multiparty IT service management (ITSM) integrations have grown in significance, the digital infrastructures develop towards dispersed, multisource, and platform-based designs. Organizations hardly use one single internal IT department to provide services, moreover, service ecosystems currently involve a range of vendors, cloud providers, application developers, and infrastructure operators who collaborate to ensure the maintenance of enterprise systems. Such a change has ushered a lot of complexity in coordinating operations responsibilities, monitoring of service execution as well as accountability of organizational operations across boundaries.

As was identified in the analysis provided in this review, the governance structures that were originally developed to apply in centralized IT settings are inadequate when trying to govern modern service ecosystems. More traditional forms of governance, including those related to the initial ITIL and COBIT applications, were created to organize the internal IT activity in one field of organization. Conversely, multiparty ITSM environments necessitate the provision of governance framework that are able to facilitate operation interactions between various

autonomous stakeholders. Such governance structures should enable cooperation, have transparency at service level monitoring, and provide stern accountability policy within the distributed service networks.

The literature sources examined in the study show that, some forms of governance models have developed to overcome these issues. Concentrated models of governance where one authority oversees operation activities between service providers offer high accountability and uniform monitoring but have minimal flexibility of operation. Models of distributed governance whereby responsibilities are distributed across entities that participative in it are more permissive but could cause problems in coordination when roles and responsibilities are not clearly set out. Hybrid modes involving centralized control and decentralized sectional carrying out of activities seem to offer the most moderate style of overarching multiparty frameworks of IT service.

There are empirical findings that organizations where the structured governance structures have been implemented show significant improvement in operational performance indicators like efficiency in resolving incidences, compliance in service level agreements, and general reliability of services. The complexity of coordinating incident management across vendors is made easier through integrated governance structures, and it decreases delays in escalation and enhances visibility of the operational performance metrics. The level of governance maturity has also been reported as one of the major determinants concerning the operational results whereby the more mature level of governance structures has been associated with greater rates of services stability and resiliency.

The technological development has also contributed to the change of the models of governance in the multiparty ITSM settings. Service management platforms today also offer a huge amount of operational data that could be processed to determine the effectiveness of governance and enhance the decision-making process. Process mining, predictive analytics, and automated monitoring systems are the types of analytical methods employed by companies to detect the lack of efficiency in service coordination and involve proactive governance interventions. These technologies are used to build data-driven governance models that can be used to increase the level of operational transparency and resilience.

Although these developments have been made, there are still a number of challenges when it comes to the governance of multiparty IT service ecosystems. The growing usage of cloud computing, microservice systems and multi-cloud systems has added new layers of operational complexity to current governance designs that may not be completely covered by current governance designs. The models of governance should keep on changing to enable highly distributed service environments, the relationships of vendors that change quickly and dynamic technological landscape.

Adaptive capabilities that allow dynamic coordination between service providers are likely to be added to the future governance frameworks. The frameworks can be based on combined monitoring systems, automatic governance policy and anticipatory analytics to identify unusual operations and to synchronise efforts of service networks. Also, interdisciplinary studies based on the results obtained by information systems management, network science, organization

governance, and distributed systems engineering could assist in creating more resistant governance structures.

Overall, to ensure the reliability, performance, and resilience of the contemporary digital infrastructures, it is imperative to conduct the multiparty IT service management integrations under appropriate governance. With the ever increasing complexity of service ecosystems, there is a need to adapt the governance structures that would enable the ability to develop coordinated decision making, transparency in the operations and collaborative management of services across distributed technological systems. Ongoing governance system design studies will be instrumental in helping organizations deal with the operational issues that include organizations dealing with ever-interconnected IT service ecosystems.

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