

Editorial: Queueing Models and Service Management — Integrating Theory, Practice, and Innovation

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As a Co-Editor-in-Chief, I am pleased to introduce our esteemed contributors, authors, and readers to Queueing Models and Service Management (QMSM), a journal dedicated to publishing rigorous, relevant, and impactful research that advances both the theory and application of queueing models in modern service systems.

Queueing theory has long provided a fundamental analytical framework for understanding congestion, delay, and resource allocation in **service systems**. Since the early foundational work on stochastic service processes, queueing models have evolved into a rich body of theory encompassing single-server systems, multi-server and many-server models, networks, priority systems, and queueing systems under time-varying environments. Core results such as Little's Law and heavy-traffic approximations remain central to both theoretical research and practical performance evaluation.

Within the scholarly landscape, journals in operations research and applied probability have played a central role in advancing the theoretical foundations of queueing. Through their emphasis on probabilistic modeling, mathematical structure, and analytical rigor, this body of work has shaped the intellectual development of the field and continues to inspire new theoretical directions. This strong theoretical tradition has provided essential tools and insights for understanding stochastic service systems and remains a cornerstone of ongoing research in queueing.

At the same time, **service systems** have grown increasingly complex and diverse. Healthcare delivery, call centers, transportation systems, logistics platforms, cloud computing, and digital services all operate under uncertainty, variability, and congestion—conditions that naturally call for queueing-based analysis. In these settings, however, decision-makers are not only interested in theoretical properties of models but also in **how queueing insights can inform service design, staffing, capacity planning, and operational control**.

It is in this broader context that *Queueing Models and Service Management (QMSM)* defines its mission.

1. Complementing Theory with Application

While theory-focused journals such as *Queueing Systems* primarily publish articles centered on the development of queueing theory, **QMSM** is committed to publishing **both**

theoretical and practical contributions. The journal welcomes rigorous analytical work on queueing models, but it places equal emphasis on studies that demonstrate relevance to real service systems and managerial decision-making.

This dual emphasis reflects the belief that theory and practice are mutually reinforcing. Practical service problems motivate new models, approximations, and analytical techniques, while theoretical results provide structure and insight that improve the robustness and interpretability of managerial decisions. **QMSM** aims to serve as a forum where this interaction is explicitly encouraged and cultivated.

2. Evolving Service Systems and Methodological Innovation

Modern service systems increasingly operate in data-rich environments and are supported by advanced computational tools. As a result, queueing research is no longer limited to closed-form analysis of stylized models. Simulation, numerical methods, and empirical analysis now play an essential role in understanding system performance and evaluating operational policies.

Looking forward, **QMSM** seeks to encourage **innovative applications of queueing models** that reflect these developments. This includes work that:

- applies queueing models through **simulation-based analysis** for complex or large-scale systems;
- develops **model-based extensions** that capture realistic service features such as time variation, customer behavior, and heterogeneity; and
- integrates **data-driven and empirical approaches** to estimate, validate, and refine queueing models using real operational data.

Such contributions not only broaden the applicability of queueing theory but also strengthen its relevance to contemporary service management challenges.

3. Looking Ahead

The future of queueing research lies in the productive integration of analytical theory, computational methods, and empirical insight. By publishing work that spans this spectrum, *Queueing Models and Service Management* complements theory-oriented journals and contributes to a more comprehensive understanding of service systems.

As the service economy continues to expand and evolve, **QMSM** remains committed to fostering research that advances queueing methodology while demonstrating its practical value for the design and management of service systems.

Call for Papers

Special Issue on “Innovative Applications of Queueing Models in Service Management”

Queueing Models and Service Management (QMSM) invites submissions for a special issue devoted to **innovative applications of queueing models in service management**.

Service systems across industries are becoming increasingly complex, data-rich, and technology-driven. While queueing theory continues to provide a powerful analytical

foundation, there is a growing need for work that applies, extends, and integrates queueing models using modern methodological tools to address real-world service management problems.

This special issue seeks high-quality research that bridges analytical rigor and operational relevance. Both **theoretical and practical contributions** are welcome, particularly those that demonstrate how queueing models can inform decision-making in service systems.

Topics of interest include, but are not limited to:

- Simulation-based analysis of service systems;
- Model-based queueing frameworks motivated by realistic service environments;
- Data-driven and empirical queueing studies, including estimation and validation using operational data;
- Hybrid approaches combining queueing theory with simulation, optimization, analytics, or machine learning;
- Applications in healthcare, transportation, telecommunications, call centers, logistics, manufacturing support, and digital platforms;
- Queueing-based decision support for staffing, capacity planning, scheduling, and service design.

All submissions will undergo the journal's standard peer-review process and must meet QMSM's criteria for originality, rigor, and relevance.

➤ **Important Dates**

- ✧ **Submission deadline:** September 31, 2026
- ✧ **First decision:** November–December 2026
- ✧ **Revised submission:** February 2027
- ✧ **Final acceptance:** April–May 2027
- ✧ **Publication:** Late 2027 (online first earlier)

➤ **Editors**

- ✧ *TBA*