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## Optimal Quality of Service Control in Communication Systems

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In current practice, quality of composite services is usually controlled on an ad-hoc basis, while the consequences of failures in service chains are often not well understood. A main concern is that, although such an approach might work for small chains, it will become unfeasible for future complex global-scale service chains. This raises the need for mechanisms that enable efficient usage of available shared resources while preserving the desired Quality of Service (QoS) as perceived by the end user.

The main challenge that is faced in this dissertation is: *how to effectively use QoS mechanisms for large-scale complex ICT systems with shared resources.*

To this end, we develop, analyze, optimize, and evaluate quantitative models that capture the dynamics of QoS-control mechanisms and their implications on the user-perceived QoS. In doing so, our analyses ultimately lead to the development of scalable and robust algorithms, decision tables, and rules-of-thumb for the optimal use of QoS-control mechanisms.



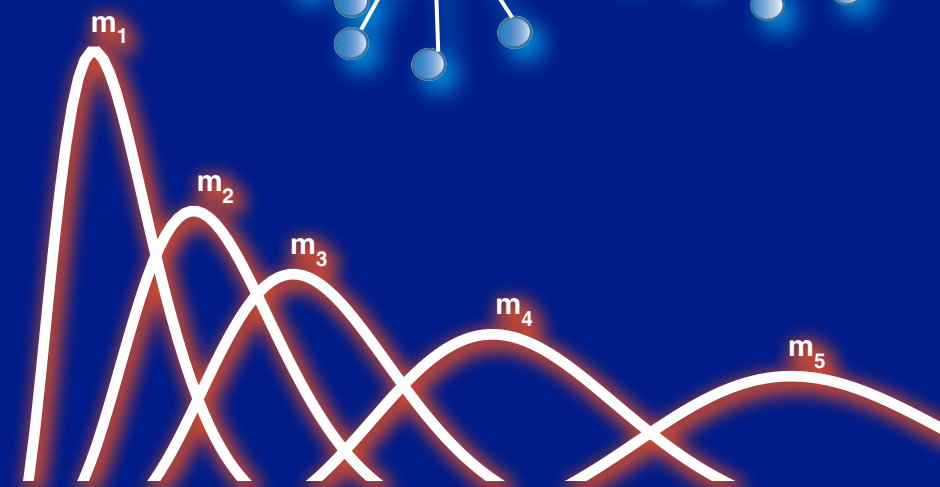
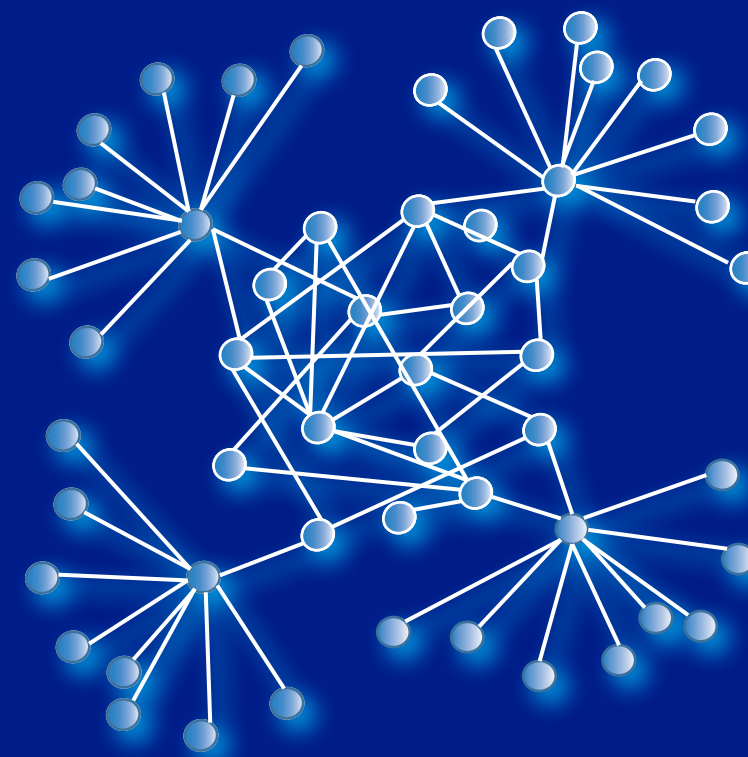
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Joost Bosman (1983) received his M.Sc. degree (cum laude) in Business Mathematics and Informatics in 2009 from the VU University Amsterdam. After his master thesis project at CWI on concurrent access in wireless networks he started as PhD student at CWI in 2009. His research interests include performance and QoS modeling of ICT systems, and queueing theory.



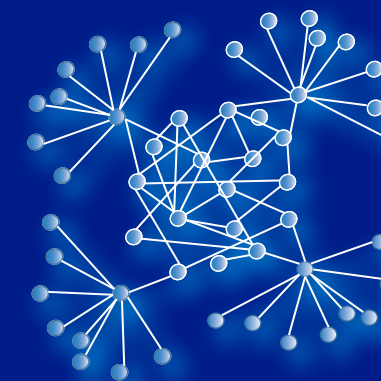
Optimal Quality of Service Control in Communication Systems – J.W. Bosman

# Optimal Quality of Service Control in Communication Systems



Joost Willem Bosman

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tot het bijwonen van de openbare verdediging van mijn proefschrift

## Optimal Quality of Service Control in Communication Systems

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