

# **A Performance Evaluation Model for the Cable TV Industry Using Quality Loss Function and Gamma Distribution**

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## **Abstract**

Cable television was immensely popular at the end of the last century due to its ability to quickly transmit large amounts of video data. In Taiwan, a densely populated region with limited space, cable TV was almost a household necessity for entertainment. However, with advancements in hardware and significant improvements in internet transmission speeds, coupled with content providers offering a wider variety of program choices, many high-definition videos no longer rely on coaxial cable transmission. As a result, younger generations have lost enthusiasm for installing cable TV, turning instead to online streaming platforms. This shift has made the operation of cable TV businesses quite challenging. To evaluate the operational performance of cable TV, a method is proposed that applies the concept of a quality loss function along with probability models based on exponential and gamma distributions. By analyzing the time intervals of existing customer cancellations, this approach allows for a rapid assessment of whether operational performance falls below a predetermined standard, enabling timely operational adjustments to avoid falling into a predicament of poor performance.

## **Keywords**

Cable television, Internet, Network transmission, Quality loss function, Exponential distribution, Gamma distribution

## **Biographies**

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