

## Continuous FAQ Updating for Service Incident Ticket Resolution

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**Abstract :** As enterprise computing becomes more and more complex, the costs and technical challenges of IT system maintenance and support are increasing rapidly. One popular approach to managing IT system maintenance is to prepare and use an FAQ (Frequently Asked Questions) system to manage and reuse systems knowledge. Such an FAQ system can help reduce the resolution time for each service incident ticket. However, there is a major problem where over time the knowledge in such FAQs tends to become outdated. Much of the knowledge captured in the FAQ requires periodic updates in response to new insights or new trends in the problems addressed in order to maintain its usefulness for problem resolution. These updates require a systematic approach to define the exact portion of the FAQ and its content. Therefore, we are working on a novel method to hierarchically structure the FAQ and automate the updates of its structure and content. We use structured information and the unstructured text information with the timelines of the information in the service incident tickets. We cluster the tickets by structured category information, by keywords, and by keyword modifiers for the unstructured text information. We also calculate an urgency score based on trends, resolution times, and priorities. We carefully studied the tickets of one of our projects over a 2.5-year time period. After the first 6 months, we started to create FAQs and confirmed they improved the resolution times. We continued observing over the next 2 years to assess the ongoing effectiveness of our method for the automatic FAQ updates. We improved the ratio of tickets covered by the FAQ from 32.3% to 68.9% during this time. Also, the average time reduction of ticket resolution was between 31.6% and 43.9%. Subjective analysis showed more than 75% reported that the FAQ system was useful in reducing ticket resolution times.

**Keywords :** FAQ system, resolution time, service incident tickets, IT system maintenance

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