

# News Website Front Page: Dynamic Content Layout Optimization

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## ABSTRACT

The news website has already become the most common media mode in delivering news content. This is also referred to as Internet newspaper in comparison to the traditional print newspaper. For the success of a news website, home page design is regarded as a key factor to determine its attractiveness to readers, as it is most likely to be the first access point for visitors. Compared to print newspaper, the news website has the advantage of the ability to update its contents in real time by removing out-of-date news and replacing them with the latest ones. News website also has the advantage to interact with readers by pushing more popular news contents to the front. Therefore, an approach is required to handle the frequent adjustment of the dynamic layout of news contents on the website home page in a real-time environment, in order to increase its attractiveness to readers. The area generated on the home page to display the most popular news is called dynamic content area, whose layout adjustment is conducted periodically and leads to webpage update. By setting the attractiveness of dynamic content area as the objective to be maximized, this layout design problem becomes an optimization problem depending on the information of news contents that changes within a multiple-period planning horizon. This research presents a general framework to optimize the dynamic content area layout by considering it as a dynamic facility layout problem (DFLP), in which the news contents are treated as departments in the facility so that the problem can be formulated with classic DFLP model. Various standard global optimization algorithms are applied to compare their performances and suitability for news content layout design problem. A hybrid genetic algorithm-based approach integrated with local search heuristic methods is also proposed to improve the solution [1]. The experimental results show that the proposed approach can generate favorable layout of news content efficiently for real applications of the Internet newspaper, and the utilization of DFLP techniques is also adaptive for solving webpage layout problem.

**Key words:** dynamic facility layout problem (DFLP), global optimization algorithms, metaheuristic search, internet newspaper, website layout design

## REFERENCES

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