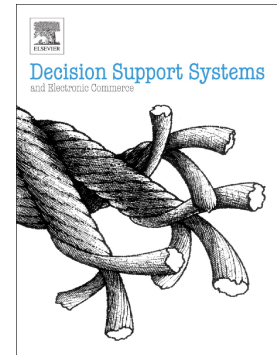


Accepted Manuscript

Improving website structure through reducing information overload

Min Chen

PII: S0167-9236(18)30057-5
DOI: [doi:10.1016/j.dss.2018.03.009](https://doi.org/10.1016/j.dss.2018.03.009)
Reference: DECSUP 12944
To appear in: *Decision Support Systems*
Received date: 1 November 2017
Revised date: 12 February 2018
Accepted date: 27 March 2018



Please cite this article as: Min Chen , Improving website structure through reducing information overload. The address for the corresponding author was captured as affiliation for all authors. Please check if appropriate. Decsup(2017), doi:[10.1016/j.dss.2018.03.009](https://doi.org/10.1016/j.dss.2018.03.009)

This is a PDF file of an unedited manuscript that has been accepted for publication. As a service to our customers we are providing this early version of the manuscript. The manuscript will undergo copyediting, typesetting, and review of the resulting proof before it is published in its final form. Please note that during the production process errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain.

Improving Website Structure through Reducing Information Overload

Min Chen

School of Business, George Mason University
4400 University Drive, MS5F4, Fairfax, VA 22030, mchen15@gmu.edu

Abstract

It is well known that website success relies heavily on its usability. Previous studies find that website usability depends greatly upon its visual complexity which has significant effects on users' psychological perception and cognitive load. In this study, we use a page's outdegree (the number of links in a page) as one measurement for its visual complexity. In general, outdegrees should be kept not too high in page design as large outdegrees are often signs of high page complexity which can adversely affect user navigation. This is particularly desirable and critical for maintaining website structures, because as a website evolves over time, the need for information also changes. Website structures must be updated periodically to align with users' information needs. In this process, obsolete links should be removed to avoid clustering of links that could cause information overload to users. However, the need to slim down website structures and reduce page complexity is understudied in the literature. In this paper, we propose a mathematical programming (MP) model that reduces information load by removing links from highly clustered pages while minimizing the impact to users. Results from extensive tests on a real dataset indicate that the model not only significantly reduces page complexity with little impact on user navigation, but also can be solved effectively. The model is also tested on large synthetic datasets to demonstrate its remarkable scalability.

Index Terms— website navigability, visual complexity, information overload, mathematical programming.

Download English Version:

<https://daneshyari.com/en/article/6948352>

Download Persian Version:

<https://daneshyari.com/article/6948352>

[Daneshyari.com](https://daneshyari.com)