

IIE Transactions >
Volume 39, 2007 - Issue 8

1,654 158

Views

CrossRef citations to date

0

Altmetric

ORIGINAL ARTICLES

Optimal reliability, warranty and price for new products

Hong-Zhong Huang, Zhi-Jie Liu & D. N. P. Murthy

Pages 819-827 | Received 01 Dec 2005, Accepted 01 Sep 2006, Published online: 30 May 2007

Cite this article <https://doi.org/10.1080/07408170601091907>

Sample our
Engineering & Technology
Journals

>> [Sign in here](#) to start your access
to the latest two volumes for 14 days

Full Article

Figures & data

References

Citations

Metrics

Reprints & Permissions

Read this article

Abstract

The success of a new product depends on both engineering decisions (product reliability) and marketing decisions (price, warranty). A higher reliability results in a higher manufacturing cost and higher sale price. Consumers are willing to pay a higher price only if they can be assured about product reliability. Product warranty is one such tool to signal reliability with a longer warranty period indicating better reliability. Better warranty terms result in increased sales and also higher expected warranty servicing costs. Warranty costs affect the product price and the manufacturer's profit. The model assumes that the sale rate increases as the warranty period increases and

About Cookies On This Site

We and our partners use cookies to enhance your website experience, learn how our site is used, offer personalised features, measure the effectiveness of our services, and tailor content and ads to your interests while you navigate on the web or interact with us across devices. You can choose to accept all of these cookies or only essential cookies. To learn more or manage your preferences, click "Settings". For further information about the data we collect from you, please see our [Privacy Policy](#).

Accept All

Essential Only

Settings

decreases as the price increases. The maximum principle method is used to obtain optimal solutions for dynamic price and warranty situations. Finally, numerical examples are given to illustrate the proposed model.

Keywords:: [Warranty cost](#) [reliability](#) [cumulative sales](#) [warranty policy](#) [maximum principle](#)

Acknowledgements

The authors gratefully acknowledge the helpful comments of four anonymous referees. This research was partially supported by the National Natural Science Foundation of China under the contract 50175010.

Related research

People also read


Recommended articles

Cited by
158



About Cookies On This Site

We and our partners use cookies to enhance your website experience, learn how our site is used, offer personalised features, measure the effectiveness of our services, and tailor content and ads to your interests while you navigate on the web or interact with us across devices. You can choose to accept all of these cookies or only essential cookies. To learn more or manage your preferences, click “Settings”. For further information about the data we collect from you, please see our [Privacy Policy](#).

Accept All 

Essential Only

Settings

Information for

- Authors
- R&D professionals
- Editors
- Librarians
- Societies

Opportunities

- Reprints and e-prints
- Advertising solutions
- Accelerated publication
- Corporate access solutions

Open access

- Overview
- Open journals
- Open Select
- Dove Medical Press
- F1000Research

Help and information

- Help and contact
- Newsroom
- All journals
- Books

Keep up to date

Register to receive personalised research and resources by email

 Sign me up



About Cookies On This Site

We and our partners use cookies to enhance your website experience, learn how our site is used, offer personalised features, measure the effectiveness of our services, and tailor content and ads to your interests while you navigate on the web or interact with us across devices. You can choose to accept all of these cookies or only essential cookies. To learn more or manage your preferences, click “Settings”. For further information about the data we collect from you, please see our [Privacy Policy](#).

 Accept All

Essential Only

Settings