



**ENGINEERING
PROGRAM IN TECHNICAL
COMMUNICATION**
UNIVERSITY OF MICHIGAN

Abstracts and Summaries

They're not the same

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Abstracts and Summaries

They're not the same

A report prepared in a journal-style format will need an abstract. An abstract is similar to a summary, but the two are not the same and are not interchangeable.

An abstract gives a very brief overview of the highlights of the report so that readers can decide whether they want to read further.

A summary is longer than an abstract and often contains more highlights, enough so that readers can make related decisions based on the summary without reading the details in the body of the report.

Important! Abstracts and summaries must be written **after** the body of the report has been written so that authors can then choose the best content from the report. Each item in an abstract or summary must be discussed in more detail in the body of the report.

Preparing an abstract

The figure below provides a general template for an abstract. Abstracts are usually between 150-250 words and have the following six parts: context, need, actions taken, purpose, findings, implications. A sentence or two can serve each of the six parts.

| | |
|----------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| context | On simple RISC architectures, post-link-time optimization of executable programs delivers significant performance improvements. However, the |
| need | applicability of this technique has not yet been evaluated for more complex CISC architectures such as the widely used Intel IA-32 processor family. |
| actions taken | We have developed PLTO, a link-time instrumentation and optimization tool |
| purpose | for IA-32. This paper describes how PLTO addresses the complexities of this processor architecture, and which analyses and optimizations contribute to the achieved performance improvements. Currently, PLTO achieves a |
| findings | moderate speedup of about 6% on average. We expect faster speedups once |
| implications | we solve a remaining problem involving significantly increased misses in the instruction cache. |

adapted from Jean-luc Doumont
Modern Myths: Shortcomings in Scientific Writing.
2007. web.

Preparing a summary

Summaries are often longer than abstracts and can sometimes be about 10% of the page length of the body of the report. For example, a report of 20 pages could have a summary of one to two pages; a report of 30 pages, up to three pages of a summary.

Many summaries are prefaced with “executive” (executive summary) because authors know that readers such as managers or other engineers may not be interested in the details of the report but only in the general recommendations and outcomes. The highlights as presented in the summary are the basis on which these readers will make decisions related to the content of the report. These readers often do not have the time to read the body of the report or do not have the technical background to understand the details.

Important! Summaries should be written **after** the body of the report is complete.

Four ways to format summaries to help readers

Summaries can be written in paragraph form, but writers should consider simple embellishments to help readers, as shown in the samples below.

1. For short summaries (1/2 page) that appear as a single paragraph, writers should consider using boldface to identify the beginnings of each highlight.

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The content of the summary should appear in the same order in which it appears in the body of the report.

If the report has several sections, writers should consider writing a highlight for each section.

2. For longer summaries (> 1/2 page), writers should consider a paragraph for each of the highlights that can correspond to sections and subsections of the body of the report. Boldfaced type at the beginnings of each paragraph, corresponding to section headings and subheadings, may help readers.

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3. Some writers include page numbers indicating where the detail to the reported highlight may be found.

page numbers
from the
body of
the report.

Lorem ipsum dolor sit amet, consectetur adipiscing elit. Phasellus tincidunt metus nec auctor blandit. Vivamus convallis, nisl ut dapibus consectetur, libero est pretium purus, at eleifend magna nulla et leo. Vivamus dapibus sagittis sem, sed rhoncus enim (p. 3). Donec eu augue viverra, mollis orci vitae, laoreet diam. Etiam blandit est vel sapien maximus, non interdum odio porta. ~~Donec commodo ornare neque~~ in porta. **Integer sit amet velit** rutrum, rutrum libero eu, maximus elit. Nullam eu sem ac lectus pretium facilisis ac et dolor (p. 6). Donec enim felis, placerat eget dapibus ut, consectetur vitae mauris. Donec dapibus dignissim ex in imperdiet. Nunc accumsan lacus neque, nec feugiat ipsum fermentum quis. Nunc pretium purus urna. **Nulla porta dignissim dui**. Maecenas vel nisi turpis. Suspendisse potenti. Praesent a mi lorem. Mauris ut mauris lobortis, consequat dui eget, lacinia orci (p. 10). Vestibulum vitae ante vitae est bibendum sagittis quis faucibus magna. **Donec convallis tempus** mauris. Nullam id luctus ipsum. Suspendisse ex lacus, vestibulum at venenatis id, dignissim et purus.

4. Some engineers may consider formatting a summary based in the style of the example shown below. This alternative format can contain the same content as a summary in conventional paragraph form, but its visual arrangement may appeal to some writers and readers.

Summary

Our redesign meets the quantity demand for the four work lines assembling the final drive and brake modules within the prescribed area. Each redesigned line will now produce five modules per hour.

Problems

Analysis of the current state of Caterpillar’s final drive and brake assembly lines revealed these eight facts:

| | page |
|------------------------------------------------------------------------------|------|
| 1. Final drive and brake assembly lines run 1.5 shifts to meet demand levels | 1 |
| 2. Product demand will increase by 15% over the next three years | 1 |
| 3. The current area has been allocated to a new manufacturing process | 3 |
| 4. Nearby furnaces contaminate a seal in the final drives | 3 |
| 5. The new area for the lines is 42,000 square feet. | 3 |
| 6. The brakes are stall-built. | 6 |
| 7. The UPM is used for the material handling of the final drives | 7 |
| 8. Kitting is used as the material handling system for the brakes | 10 |

Conclusions

| | problem # |
|-----------------------------------------------------------------------------------------------------------|-----------|
| 1. The final drive and brake assemblies must run faster to meet demand | 1, 2 |
| 2. The line must be moved to the new area. | 3, 5 |
| 3. Workers are spending extra time waiting for parts. | 7, 8 |
| 4. Quality problems occur and cause rework | 4 |
| 5. The flow of the brakes assembly lines cannot match the flow of the assembly line for the final drives. | 6 |

Recommendations

| | conclusion # | page |
|--------------------------------------------------------------|--------------|------|
| 1. Use a portion of the allotted area away from the furnaces | 2, 4 | 14 |
| 2. Regroup assembly stations into a straight-line layout. | 1, 5 | 16 |
| 3. Add new machines to final drive and brake assembly lines | 1 | 19 |
| 4. Implement the supermarket-pull material handling system | 3 | 22 |

This alternative format organizes the summary into highlights based on problems, conclusions, and recommendations. Conclusions correspond to solutions of the problems, and recommendations correspond to conclusions. Page numbers for the problems and recommendations are provided where each one is discussed in detail. This format can be varied to fit the content and audiences of reports.

source: Joseph Emanuel, “The Executive Summary: Key to Effective Communication” *Technical Communication* 43(1). 78-82. February 1996.