Abstracts and Summaries
They’re not the same
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*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.

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context
need
actions taken
purpose
findings
implications
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On simple RISC architectures, post-link-time optimization of executable programs delivers significant performance improvements. However, the applicability of this technique has not yet been evaluated for more complex CISC architectures such as the widely used Intel IA-32 processor family.

We have developed PLTO, a link-time instrumentation and optimization tool 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 moderate speedup of about 6% on average. We expect faster speedups once 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.

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.


   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.


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

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:

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

**Conclusions**

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

**Recommendations**

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