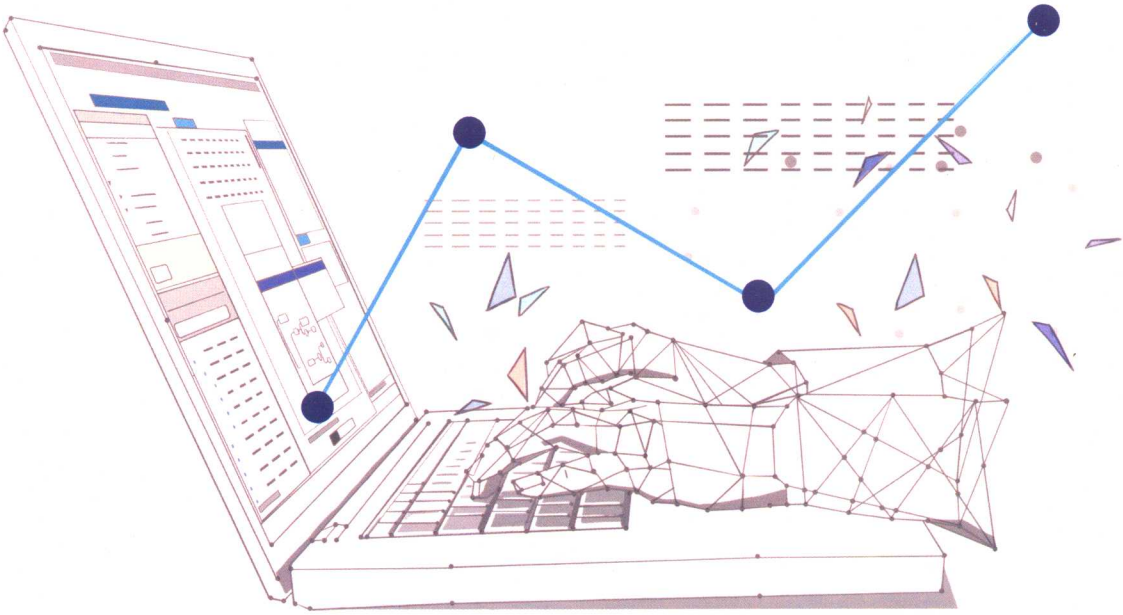
“十三五”江苏省高等学校重点教材



英文技术写作

Technical Writing

◎主编　陈美华

南京大学出版社

“十三五”江苏省高等学校重点教材(编号：2020-2-121)

英文技术写作

Technical Writing

主　编　陈美华
副主编　俞韫烨
编　者　金　晶　王学华
Baotong Gu　George Pullman
高志军

南京大学出版社

图书在版编目（CIP）数据

英文技术写作 / 陈美华主编 . -- 南京 : 南京大学出版社，2021.7

ISBN 978-7-305-24433-9

Ⅰ . ①英… Ⅱ . ①陈… Ⅲ . ①科学技术 - 英语 - 应用文 - 写作 - 高等学校 - 教材 Ⅳ . ① H319.36

中国版本图书馆 CIP 数据核字（2021）第 073976 号

出 版 者　南京大学出版社
社　　址　南京市汉口路22号　　邮　编　210093
出 版 人　金鑫荣
书　　名　英文技术写作
主　　编　陈美华
责任编辑　董　颖　　编辑热线　025-83596997

照　　排　南京新华丰制版有限公司
印　　刷　南京凯德印刷有限公司
开　　本　787 × 1092　1/16　　印张17.75　　字数315千
版　　次　2021年7月第1版　2021年7月第1次印刷
ISBN　978-7-305-24433-9
定　　价　69.00元

网　　址：http://www.njupco.com
官方微博：http://weibo.com/njupco
官方微信号：njupress
销售咨询热线：（025）83594756

---

* 版权所有，侵权必究
* 凡购买南大版图书，如有印装质量问题，请与所购图书销售部门联系调换

Preface
前　言

随着我国经济和产业日益融入全球体系，进一步提升人才的外语水平和沟通能力成为迫切需求。《国家中长期教育改革和发展规划纲要（2010-2020）》提出，高校要培养一批“具有国际视野、通晓国际规则、能够参与国际事务和国际竞争的国际化人才”。然而，学生常有“学了英语会考但不会用”“写了文档别人看不懂”的困惑，在实际工作中无法自如地使用英语沟通，或者沟通效率较低。这一症结既影响了个人才能的发挥，也制约了用人单位工作效率的提高，甚至可能因为信息传达有误而引发事故，进而在国际竞争中失去应有的优势。为缓解这一“学”与“用”之间的矛盾，我们以英语修辞学理论、传播学理论为指导，依据写作研究最新成果和中国学习者英语习得研究的最新成果，结合编者的技术写作实践经验和英语教学经验，开发了“英文技术写作”相关课程和教材，旨在提升学生的技术写作和沟通能力。

技术写作是在职业环境下为传达专业信息而有针对性地选择文体、传达方式以满足特定读者或用户需求的一种写作和沟通模式。技术写作的核心理念是“以用户/读者为中心”，核心能力是准确、规范地使用语言。近代工业革命以来，技术写作在英国、美国、德国等工业发达国家逐渐成形并已经发展为一项专门职业。在信息化时代，技术写作在软件开发、产品制造、售后维修服务、法律合规等方面发挥着重要作用。此外，以技术写作能力为核心的沟通能力一直是工业发达国家工程师认证标准中的重要一环。而技术写作课程在美国、德国等国家的高等教育课程体系中占有重要地位，为各国的大型制造企业、高科技行业输送了大量专业文档开发管理人才，提升了各国专业人才的综合能力。

在我国，随着制造业、互联网等行业的快速发展，国家战略发展重点领域的

国际合作与竞争日趋显著，企业亟需熟练掌握技术写作技能和规范的专业文档人员，但常常是“求贤若渴”却“求而不得”；另一方面，随着我国“新工科”计划的推进，“沟通能力”已被列为未来工程师的核心素质之一，日益受到各类院校的重视。目前，国内多所高校已开设了技术写作相关课程。尽管如此，技术写作在国内高校的发展仍面临重重困难。据中国技术传播联盟 2018 年的调研，高校开设“英文技术写作”相关课程的最大困难是“没有合适的教材”。

为解决国内技术写作课程教材短缺的问题，进一步推进技术写作教学、提升专业沟通能力，我们组织编写了《英文技术写作》。

本教材的内容和模块

《英文技术写作》是一本综合性技术写作教材，涵盖本领域的基础理论、常用文体、研究方法和应用实例。本教材采用模块化的组织形式，分为“入门简介”“沟通与传播的基础”“技术写作常用文体文本”“技术文本的前期准备与后期评测”4 个模块。模块内部有连贯性，模块间有相对的独立性，便于各校师生根据具体需求灵活选择使用。

本教材的目标学习者

- 英语专业高年级本科生；
- 语言翻译类硕士研究生；
- 非英语专业高年级本科生与研究生；
- 有志于或正在从事文档开发、技术写作工作的专业人士；
- 有志于提升英语交际能力、实用能力的英语学习者。

本教材的目标

完成本教材的学习后，学习者可以：

- 区分并深入理解不同技术文档和专业文书的核心特点，能够以专业标准完成技术文档。本教材涉及的技术和专业文档类型有：备忘录（memorandum）、信函（letter）、电子邮件（email）、简历（resume）、信息图（info graphic）、企划书 / 申请书（proposal）、报告（reports）。

- 能分析不同写作场景中的各种制约因素并选择合适的写作和沟通策略。场景中的因素包括读者 / 用户、文档目的用途、合作者、沟通的时机选择、计算机辅助技术的使用等。
- 以“读者”为中心架构文档和文书，保证文档可读懂、易读懂。
- 掌握技术写作语言风格——清晰、简明、连贯，具体。
- 合理规划、设计文档页面，能够为文档选择合适的图标、图文。
- 选择合适的用户研究方法，理解并能开展常见的可用性测试和用户体验研究。

本教材的创新点

- 本教材围绕“以读者为中心”的编写理念，强调对读者 / 用户需求的理解、对使用情境的分析、对技术手段的合理选择，最终目的是高效、准确地传达信息、方便读者。
- 本教材紧扣行业写作需求与规范，强调写作情境设计与案例分析，实用性强，将“写作”视为一项综合能力、一个过程，以提高学生的写作规范意识与英语写作能力，注重培养学生在不同的写作情境和需求下，选取写作策略、综合运用写作技术的能力。
- 本教材内容丰富，结构模块化，并配套立体化资源库。本教材采用模块化的组织形式，按“基本概念—沟通基础—文本类型—后期测评”的编写思路设计了 4 个模块，模块之间层层递进、相互连贯。同时各个模块间又相对独立，广大师生可根据实际情况选择对应的模块进行学习。

本教材的特色

- 教材牢牢把握课程思政概念，以立德树人为根本任务，将育人理念有机融入教学内容。
- 教材定位贴合新形势下的国家发展与行业发展的人才需求，应用范围广泛。
- 教材框架设计层次清晰，内容取材兼顾思想性与实用性。
- 教材建设模式立体化，配套资源库丰富全面（包括配套课件、在线开放课程等），便于师生使用。
- 编者团队国际化、多元化。既有长期工作在一线的英语教师，也有技术写作

行业专家和国外一流学者。既保证了教材内容反映行业和研究领域的新成果，也保证了教材能满足中国学习者的需求。

本教材的使用

本教材设有 4 个模块，共 12 章。建议全书的课堂教学时长为 64 学时，并可结合本教材配套的在线开放课程，进行翻转教学或供学生课后自主学习。教师亦可根据所在学校的教学安排、学生学习需求与实际英语能力，选取合适的章节进行安排。

本教材是《英文技术写作》教学团队集体智慧的结晶。在编写过程中，我们参考了国外相关书籍，并得到了国内外同行的启示。在此谨向相关作者和出版社表示衷心感谢。南京大学出版社对本书的出版提供了大力支持，特此一并致谢。书中如有错漏之处，恳请各位专家、同行和学习者指正。

编者

2021 年 6 月于南京

Table of Contents

Module 1 An Introduction to Technical Writing 1

Chapter 1 A Brief Introduction to Technical Writing 1

Module 2 Basics in Technical Writing and Professional Communication 17

Chapter 2 Principles of Document Design 17

Chapter 3 Communication Basics: Understanding Your Communication Situation 41

Chapter 4 Technical Writing Style: Brevity and Clarity 57

Chapter 5 Communicating through Visual Elements 69

Module 3 Technical Writing and Professional Communication at Workplace 105

Chapter 6 Workplace Correspondence (1) Letters, Emails, and Memos 105

Chapter 7 Workplace Correspondence (2): Job Application Materials and Reports 135

Chapter 8 Workplace Correspondence (3): Proposals 169

Chapter 9 Workplace Correspondence (4): Instructions..... 191

Chapter 10 Structured Writing 211

Module 4 Preparing and Evaluating Technical Documents 229

Chapter 11 Methods in Technical Document Development and Assessment 1: User Research 229

Chapter 12 Methods in Technical Document Development and Assessment 2: User Personas and User Profiling..... 259

Chapter 1

A Brief Introduction to Technical Writing

Contents

GLOSSARY 2

TASKS 3

What is technical writing? 3

Who does technical writing? 9

Who needs technical writing? 15

Why do we need to learn technical writing? 16

manual /ˈmænjuəl/ an informational or instructional guide for users 用户手册

recipe /ˈrɛsəpi/ a set of instructions that teaches users how to prepare or make something, especially food 菜谱

tutorial /tuˈtɔriəl/ a set of step-by-step instructions that teaches users to perform a task or a set of tasks 指南、教程

persuasive /pərˈsweɪsɪv/ able or intended to convince somebody of something 有说服力的

audience /ˈɑdiəns/ the listener, reader, or receiver of information 听众、读者或信息的接收者

rhetorical context /rɪˈtɔrɪkəl/ /ˈkɑntɛkst/ the communication environment and all the factors thereof that affect the outcome of a communication act, including purposes, audiences, constraints, etc. 语境，即沟通交流发生的环境，影响因素包括交流的目的、受众、限制条件等等

user /ˈjuzər/ a person that uses a particular product （产品的）用户

genre /ˈʒɑnrə/ a class or category of documents having a particular form, style, conventions, etc.（某一种）文体，一般具备特定形式、文风、写作传统

memo /ˈmɛˌmoʊ/ a short message or document that's often used for internal communication within a business or organization 备忘录，工作场所用于记录、传递信息的文体，一般用于机构内部沟通

letter /ˈlɛtər/ a written document addressed to a specific person or organization, often transmitted by mail or email 信函，一种写给特定人员或机构的文体，通常通过信件或电子邮件形式传递

proposal /prəˈpoʊzəl/ a document/statement that often recommends, suggests, or offers something for acceptance or adoption 企划书，一种用于提出建议、提案的文体

report /rɪˈpɔrt/ a document/statement that summarizes and describes in detail an event, a situation, an issue, etc., often based on careful research 报告，一种用于描述、总结事件或项目推进情况的文体，通常需要以细致深入的研究为基础

instructional guide /ɪnˈstrʌkʃənəl/ /gaɪd/ similar to tutorial, a document that provides instructions on performing a task or a set of tasks 说明性指南，一种类似于指南的文体，主要用于提供完成某项（些）任务的必要说明和指导

press release /prɛs/ /riˈlis/ a statement prepared for and distributed to the press by a business, an organization, a government agency, etc. 新闻通稿，公司、机构或政府单位等发布给新闻媒体的稿件

white paper /waɪt/ /ˈpeɪpər/ a report, often authoritative, prepared and released by an organization or government agency; in technical writing, it often refers to an informative report on a particular issue or phenomenon 白皮书，报告的一种形式，由政府单位或行业权威机构发布的具备一定权威性的文体；在技术写作领域，一般指针对某一问题或现象发布的内容信息翔实的报告

jack of all trades /dʒæk/ /əv/ /ɔl/ /treɪdz/ someone who is good at many things 杂而不精的人，万金油

indexer /ˈɪnˌdɛksər/ someone who prepares indexes 制作索引的人

information architect /ˌɪnfərˈmeɪʃən/ /ˈɑrkəˌtɛkt/ someone who designs the information architecture for an organization and whose scope of work often encompasses the creation, implementation, and delivery of information 信息架构师

instructional designer /ɪnˈstrʌkʃənəl/ /dɪˈzaɪnər/ someone who designs, develops, delivers, and assesses content for learners 教学（内容的）设计师

technical illustrator /ˈtɛknɪkəl/ /ˈɪləˌstreɪtər/ a person who does illustrations for technical writing （技术文档的）插画师

globalization and localization specialist /ˌgloʊbəlɪˈzeɪʃən/ /ənd/ /ˌloʊkələˈzeɪʃən/ /ˈspɛʃələsts/ someone who is specialized in adapting information products to users of target cultures 全球化与本地化专员

usability /ˌjuzəˈbɪlɪti/ the extent to which a product can be used by target users within specific contexts to achieve their goals with ease, efficiency, and satisfaction （产品的）可用性

human factors professional /ˈhjumən/ /ˈfæktərz/ /prəˈfɛʃənəl/ a specialist who studies psychological and physiological factors that affect people's performance and how to incorporate these factors into the design of products, processes, and systems 人因工程专员

visual designer /ˈvɪʒəwəl/ /dɪˈzaɪnər/ someone who specializes in designing visual elements in technical documents 视觉设计师

web designer /wɛb/ /dɪˈzaɪnər/ someone who designs web pages 网页设计师

content strategist /ˈkɑntɛnt/ /ˈstrætɪdʒɪst/ often used interchangeably with "content architect" 内容战略师

What is technical writing?

Technical writing exists everywhere in our life: the user's guide for your new smart phone, the

owner's manual for your new car, the recipe for the favorite dish you want to cook, the online tutorial that teaches you how to use Photoshop… Nobody can escape technical information. It's ubiquitous and is immersed in every aspect of our life.

Have you done technical writing? If you answer no, think again. Have you ever texted instructions to a friend teaching him how to set up an app on his phone? Have you ever sent screen shots to someone to teach her how to set up a certain function in WeChat? Have you ever sent your recipe for your signature dish to a relative? These are all examples of technical writing.

Let's say you have a car for sale, and you want to write a classified ad to be published in the local newspaper. You're trying to decide between the following two versions of the ad:

A. My 2017 Mazda Miata is for sale. It is cheap. It is reliable. It is good as new.

B. My cheap, reliable, and good-as-new 2017 Mazda Miata is for sale.

Which version is better? So you ask. Well, that's often the wrong question to ask. The correct questions to start with in this case would be:

- In what way are these two different?
- What effect is each going to have on the reader?
- What are the different rhetorical principles that go behind these ad designs?

Your purpose is simple: to sell your 2017 Mazda Miata. In order to sell your car, you want to emphasize the three qualities that you think make your car appealing to the potential buyer: cheap, reliable, and good as new. Therefore, your focus is to "sell" these three qualities to your reader. Now, let's see how these two versions do the job of "selling".

Version A uses explicit, straightforward persuasion. By using three parallel structures in the last three sentences, "It is… It is… It is…", this ad is designed to have a direct visual (reading) as well as aural (hearing through reading) impact on the reader so that it becomes memorable. If you read the ad, you'll see that the three parallel sentences will indeed create some impression on you.

The rhetorical design in version B, however, is much more subtle. In this version, the three qualities that you most want to emphasize are now moved forward to the modifying position for the grammatical subject. Such an arrangement seemingly de-emphasizes the three important qualities of the car that you want to "sell" to the reader. So why? Well, such a rhetorical design actually employs the principle of the given-new contract to create subtle

persuasion. The given-new contract stipulates that in communicating information, if we start with given (old) information to lead to new information, which then becomes given information in the next sentence and leads to further new information, it will be much easier for the reader to follow you. For example,

I have a friend named John. He's going to marry Jane. Jane is an accountant.

Given New Given New Give New

How does this given-new contract apply to version B of the ad? Let's take a look:

My cheap, reliable, and good-as-new 2017 Mazda Miata is for sale.

Given New

By the sheer position of the three qualities, which is part of the grammatical subject and in the front position of the sentence, it implicitly implies that all this is given information, and we typically don't question the validity of given (old) information and subconsciously accept it as true. Therefore, this rhetorical arrangement of putting the three qualities in this given information position subtly hints to the reader that you don't have to question the truthfulness of the three qualities and therefore should believe that my Mazda Miata is "cheap, reliable, and good as new".

So, what does this example demonstrate about technical writing? A simple technical writing act as demonstrated by this classified ad involves many rhetorical aspects:

Technical writing is task driven.

It has definite purposes. You do technical writing to accomplish particular goals. You never simply present the information for the sake of presenting information. Writing without a purpose is not communication.

Technical writing is persuasive.

Technical writing is more than presenting factual information. It has the ultimate purpose of persuading the audience to take the action you want them to take. Technical writing is never purely objective and always has a persuasive side.

Technical writing has specific audiences.

When you do technical writing, you target specific audiences, large or small. Therefore,

audience demographics come into play in your design of technical writing. For example, how much knowledge does the audience have about this subject? Do I need to provide more detailed information to make it clear? Is this language too technical for my audience?

Technical writing has a rhetorical context.

A particular piece of technical writing may work within one particular rhetorical context but not another. For the classified car ad, the local newspaper is a good medium as it targets largely a middle-class readership who often read classified ads. Often, different organizational contexts will dictate different communication styles, mediums, format designs, and language conventions.

Technical writing is user centered.

Technical writing is different from creative fiction or poetry where the writer can often focus on expressing him/herself. In technical writing, the focus is on the reader/user. It aims to accommodate the needs of the users: what they want, what they like, how it will be easier for them to understand the information, what would be most helpful to users in accomplishing the tasks.

Technical writing design is deliberate.

In technical writing, every decision you make has a rhetorical purpose: your decision to include one content over another, your decision to use one layout over another, your decision to use one graphic over another, your decision to use one color over another… The very act of decision making means technical writing is a very deliberate act. That's why we call it rhetorical design.

Technical writing entails knowledge and skills in many areas.

To be an effective technical writer requires knowledge and skills in a multitude of areas:

- Language skills
- Subject matter knowledge
- Rhetorical theories
- Communication theories

- Document design
- Desktop publishing
- Digital writing and publishing
- Editing
- User research and usability assessment

You may not necessarily have to have all the skills, but what it takes often depends on your organizational context, the role you're required to play within your organization, and the type of technical writing needed. Whatever type of technical writing you do, however, most of these skills come into play. It's hard to imagine one can be an effective technical writer without, for example, any kind of knowledge of rhetorical theories.

Technical writing comes in different genres.

Technical writing encompasses a wide range of different types, including the following common genres:

- **Memos**—Memos are a common form of organizational communication. In most businesses and organizations, memos are used almost daily. Memos differ from official letters in that memos are often used internally. Memos often have the following memo heads: "To", "From", "Date", and "Subject". These provide a context about who's involved in the communication, when the communication occurs, and what the subject of communication is. There's a legal side to memos: because they're written communication and spell out the context of communication, they serve to provide archival functions so that if any issue arises in the future concerning this matter, this paper trail will become evidence as to who said what and who was responsible.
- **Letters**—There're two different types of letters: personal and business letters. Personal letters are very rare now due to the use of emails. Business letters, on the other hand, although many of them have also been replaced by emails, still serve an important function as official communication between businesses and organizations. They also serve as evidence for business contracts and agreements.
- **Proposals**—Proposals are documents that propose a certain initiative that often requires investment by the target audience in forms of monetary or other support in exchange for the realization of particular missions of both parties. Proposals come in various

forms: business proposals, grant proposals, research proposals, book proposals, etc. They can also be categorized into solicited proposals (conference proposals, government research and development proposals, foundation proposals, contract proposals, etc.) and unsolicited proposals (internal proposals, partnership proposals, contract proposals, etc.).

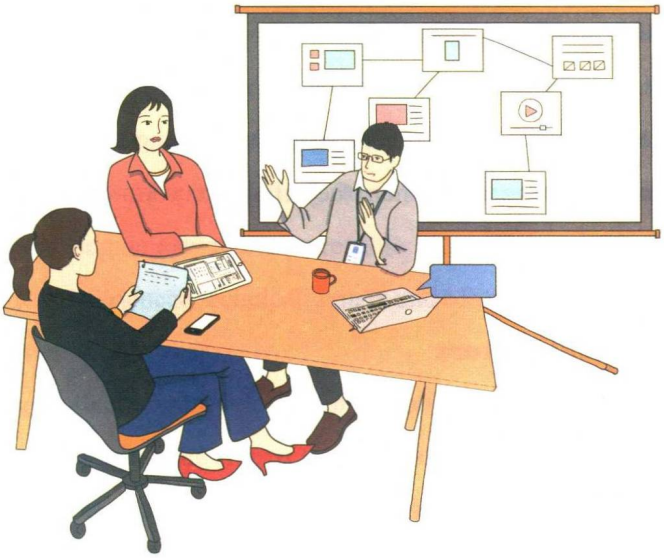
- **Reports**—Reports are a very common form of business document that are often based on research about a particular issue or problem. Some reports aim to be informative while others seek to be persuasive by recommending a solution.
- **Brochures and Pamphlets**—These are often used by businesses and organizations to promote their products, services, membership, mission, etc. They often target clients or external audiences. Brochures and pamphlets often feature the most prominent highlights of the business or organization. Brochures are often divided into panels, most of which range from 4 to 8 or even more. Pamphlets are often booklets that contain multiple pages. They are used in place of brochures to allow for more content.
- **Manuals, Tutorials, and Instructional Guides**—These are probably the most common genres with which people associate technical writing. Manuals, tutorials, and instructional guides are often task driven, concerned with teaching the user how to perform specific tasks. Good instructions are comprehensive, procedural, and easy to follow. Instructions can range from small, single-task tutorials to large, book-length guides on how to use a product or program.
- **Abstracts and Summaries**—Abstracts and summaries are used in nearly all kinds of technical writing genres, especially at the beginning of long technical reports. Often, these summaries aim at a non-technical audience and present the most important highlights from the report. Summaries can range from short, paragraph-length abstracts to medium-length descriptive and informative summaries, to full-blown executive summaries. The purposes of these summaries are often to help readers grasp the main points of the report before they decide whether to read the entire report.
- **Press Releases**—Businesses and organizations often use press releases to inform the general public or specific target audiences about a particular event, product, or service. Press releases are often an expedient way for businesses and organizations to reach a wide audience.
- **White Papers**—White papers are often reports that inform readers about a complex

issue. They are often based on extensive research about the various aspects of a particular issue and are meant to help readers to understand an issue, to solve a problem, or to make a decision. Some white papers, such as those issued by a government, often inform readers about the entity's position or philosophy on the issue. White papers can range from several to hundreds of pages.

- **Technical Descriptions**—Technical descriptions explain a technical product or process. Hence we have product descriptions and process descriptions. Product descriptions define a particular product or item, introduce background knowledge related to the product or item, and describe the different parts and their functions. Process descriptions define a technical process, provide background knowledge needed to understand the process, and describe different stages and steps of the process.

This is by no means an exhaustive list. Technical writing comes in all shapes and forms. As a technical writer, it is important to understand the different conventions associated with a particular genre.

Who does technical writing?



Technical writing has existed for many centuries and can be traced as early back as to Aristotle's period in the 4th century BC. It did not become a real profession until the mid 20th century. In the early part of the 20th century, technical writing was done mostly by engineers as

technical writing programs did not emerge in American universities until the mid-20th century. Nowadays, with most American universities offering technical writing programs, most technical writing positions are held by people who have been trained in technical writing.

However, people doing technical writing have very different job titles and capacities. If you have to name position titles related to technical writing, how many can you list?

Technical writing is a diverse field, and there're more position types than you may think. The Society for Technical Communication (STC) provides the following as only "a partial list of the different jobs within technical communication":

- Technical Writers and Editors
- Indexers
- Information Architects
- Instructional Designers
- Technical Illustrators
- Globalization and Localization Specialists
- Usability and Human Factors Professionals
- Visual Designers
- Web Designers and Developers
- Teachers and Researchers of Technical Communication
- Trainers and E-Learning Developers

(Source: STC website: https://www.stc.org/about-stc/defining-technical-communication/)

These jobs all have one thing in common: they all do some kind of technical writing, although their job scopes are different.

Technical Writers and Editors

These are the most common position titles for technical writing. Smaller businesses and organizations often have only one or two technical writers and thus often use the general position title of "technical writer" or "technical editor". The job scope and responsibilities for these technical writers/editors are all encompassing, and these positions require people who are more like Jack of all trades, handling all functions related to technical writing. Large businesses and organizations, on the other hand, tend to have a team of technical writers where everybody's division of duties might be more distinct and therefore have different job

titles for people in their technical writing department. Most technical writing entry positions require a bachelor's degree or a certificate in technical writing plus a few years' experience.

Indexers

Simply put, indexers are people who create indexes, which are alphabetical lists of important terms and concepts covered in the document. Indexes are different table of contents in that table of contents present an outline of the topics in the exact linear order as they are covered in the document while indexes are terms arranged alphabetically. Indexes are used in most book-length manuals. When you buy a new car, for example, it typically comes with an owner's manual that's several hundred pages thick. If you want to figure out how to connect your phone to your car through Bluetooth, how do you go about finding that information in the manual? Do you flip through the entire table of contents to find it? Or do you go to Index section in the back of the manual to look for the entry "Bluetooth"? Most likely, you'll do the latter since it's much easier and faster.

Indexes are a must for hardcopy manuals to help users quickly find the information they need. Now, with many manuals, tutorials, and user guides going online and having the search function, does it mean we no longer need indexes? No, we still very much need indexes. The reason is that many search functions for these online manuals are term sensitive and not very forgiving, meaning that your search term often has to exactly match the term embedded in the program for it to work. For example, in the software industry, it's a common consensus that we "close a dialog box" but "quit a program". So, if you want to quit a program and search for "close xyz", the search engine may return no results.

Indexers are often experienced technical writers and often need a bachelor's degree with some years of experience.

Information Architects

Information architects are technical writers who design an organization's overall information architecture. They deal with the big picture of information design, and their job responsibilities include but go beyond

- Researching and identifying user needs and behavior
- Designing overall information architecture

- Developing data flow structure
- Overseeing the implementation of data and information structure
- Ensuring smooth and effective information delivery

Skills required for information architects often include

- Consumer profiling
- Strategic planning
- Content management
- Data flow design
- Database management
- Data modeling
- Problem solving
- Critical thinking

Most information architects possess a graduate degree in technical writing, information design, communication, or a related field, or a bachelor's degree with substantial experience in technical writing. Often, they have held various positions in technical writing and have gained considerable experience in various facets of this field.

Instructional Designers

Instructions are a ubiquitous occurrence and include an array of different types: tutorials, guides, references, help files, manuals, etc. Instructional designers are people who design such information products that help people learn concepts and perform specific tasks. Their job responsibilities involve

- Understanding learner needs
- Designing interactive learning solutions
- Planning and developing instructional design projects
- Developing assessment instruments for learning effectiveness
- Developing strategies to cater to different learner needs
- Using technology in instructional design

Most instructional designers have a bachelor's degree in technical writing or a related field and a few years' experience.

Technical Illustrators

Technical writing often employs illustrations to help explain concepts and product parts. Technical illustrators need to be able to extract important information from data and create diagrams, graphics, and other illustrations to help users understand technical information. Most technical illustrator positions require a bachelor's degree in illustration or graphic design or equivalent experience.

Globalization and Localization Specialists

In the age of globalization today, many businesses need to disseminate their information to audiences in different cultures and countries. This has created the need for globalization and localization specialists. These specialists are often involved in the process of information and documentation development from the very start so that information developed can easily be localized.

Globalization and localization specialists

- Have knowledge of different cultures and other languages although they may not necessarily speak all those languages
- Analyze market and user needs of those target cultures
- Identify critical issues in localization
- Work with product developers, documentation specialists, language specialists, terminologists, etc. and develop localization plans
- Oversee the creation of multiple versions of documentation for different target markets
- Design effective channels for documentation product delivery
- Manage localization budgets
- Educate collaborators in product development, documentation, project management, etc. about the target culture and audiences

Globalization and localization specialists often possess at least a bachelor's degree in a language-related discipline and some years of experience in a related field.

Usability and Human Factors Professionals

With more and more emphasis on user-centered design, usability testing has increasingly

become an essential part of information design. Usability professionals focus on users' experience in their interaction with the product or documentation. Usability testing first started in the field of web design where usability specialists evaluate users' experience in interacting with the interface. It has now expanded to nearly all fields of product design. After developers design product prototypes, usability specialists design and conduct alpha and beta tests on sample target users. They carefully observe users' interaction with the product, carefully analyze and evaluate users' feedback, and make recommendations for improving the product.

Usability specialists often come from diverse backgrounds. Preferences are often given to people with degrees in human computer interaction, human factor psychology, marketing, business, technology, etc.

Visual Designers

Visual design has become an integral part of technical writing. Visual designers don't simply create artwork for branding projects, campaigns, apps, websites, and creative projects; they also handle layouts, typography, color use, and graphics, which are all integral parts of technical writing. Visual designers often hold degrees in graphic design, technical writing, marketing, etc.

Web Designers and Developers

Web design and development used to be the realm of computer science majors. Today, with increasing emphasis on the rhetorical effectiveness of both content and format design, web design has become very much an aspect of technical writing. Most technical writing programs now offer some course on web design, digital writing and publishing, or even web programming. Technical writing students in these courses often study not only the rhetorical aspects of web design but also programming languages, such as html, PHP, and cascading style sheets. Technical writing programs are increasingly recognizing that a combination of web programming skills and rhetorical competency is making technical writing students more marketable for positions related to web design and more competitive against their computer science counterparts.

Teachers and Researchers of Technical Communication

As educators of technical writing/communication, teachers and researchers in this field are very much practitioners as well. To be a technical writing teacher or researcher at the university level in the U.S. often requires a doctoral degree in technical writing, rhetoric and composition, or a related field.

Trainers and E-Learning Developers

Training programs, especially E-learning programs, are becoming a popular trend as they are in good demand. Training program developers are often hired by companies to provide training for their employees. Training program specialists are responsible for researching and understanding their clients' needs, designing the training curriculum, using effective pedagogy in delivering the program, and developing assessment tools to assess and evaluate the progress of trainees. Training program developers need to possess skills in marketing, curriculum development, presentations, content delivery, and assessment.

Content Strategists and Content Managers

Although content management is not on STC's partial list of technical writing positions, it has become an essential part of many technical writing teams and departments, especially in large businesses and organizations. In some aspects, content strategists perform very similar functions to those of information architects. They set the strategies for the entire process of content creation, management, and delivery. Content managers are often in charge of the execution of the strategies for content creation and delivery. Content strategists and managers often need advanced college degrees and substantial experience in the field of technical writing.

Who needs technical writing?

The answer is simple: every business or organization needs technical writing. In this information age, it's hard to imagine a business will be successful without effective technical writing. While technical writing is indispensable to large, established businesses, it is equally integral to the success of small startups as they will need well designed brochures, flyers,

websites, and press releases to promote their business and even business plans to attract potential investors. Technical writing students have promising career prospects.

Why do we need to learn technical writing?

The days when anybody with some technical knowledge could be a technical writer are long over. Today's technical writing profession demands graduates of technical writing programs well versed in at least some of the following areas:

- rhetorical theories
- document design
- content creation
- technical editing
- graphic design
- visual design
- technology use
- localization
- web design
- oral presentation

You may not necessarily have to have all these skills, but a combination of several of these is essential to anybody who wants to succeed in technical writing. If you aspire to be a technical writer, you should take advantage of the degree and certificate programs offered by universities, participate in academic and practitioner conferences, and keep yourself updated in the new developments of the field.

Chapter 2

Document Design Principles

Contents

CASE 18

GLOSSARY 18

TASKS 19

- Contrast 20
- Repetition 23
- Alignment 28
- Proximity 31
- Typography 35

LANGUAGE FOCUS 36

GUIDELINES OR CHECKLISTS 37

EXERCISES 38

CASE

Lisa is a copywriter at a non-profit organization that aims to promote *zero-waste* [1]. Day-to-day, Lisa is tasked with writing clear and concise copy for ads, marketing materials, educational materials, and websites, for audience across various areas and industries.

To keep her writing interesting and easy to read, Lisa has to carefully arrange the content and pages.

GLOSSARY

contrast /ˈkɑntræst/ a difference between two or more people of things that you can see clearly when they are compared or put close together 对比（原则）

repetition /ˌrɛpəˈtɪʃən/ the fact of doing or saying the same thing many times 重复

alignment /əˈlaɪnmənt/ arrangement in a straight line 排成直线，对齐（原则）

centered alignment /ˈsɛntərd/ /əˈlaɪnmənt/ 居中对齐

flush left/right /flʌʃ/ /lɛft///raɪt/ 左对齐 / 右对齐

1 Zero-waste is a set of principles focused on waste prevention that advocates the redesign of resource life circle so that all products can be reused. Unlike recycling, zero-waste movement puts emphasis on "precycling"—waste prevention.

proximity /prɑkˈsɪməti/ n. the state of being near sb/sth in distance or time 相近

font /fɑnt/ the particular size and style of a set of letters that are used in Printing, etc. （某个特定的）字体

typeface /ˈtaɪpˌfeɪs/ a set of letters, numbers, etc. of a particular design 字体

boldface /ˈboʊldˌfeɪs/ 黑体

white space /waɪt/ /speɪs/ in page layout, white space is often referred to the portion of a page left unmarked （页面上的）空白、留白

spacing /ˈspeɪsɪŋ/ the amount of space that is left between things, especially between the words or lines 行距、间距

hierarchy (of information) /ˈhaɪəˌrɑrki/ n. a system that ideas or beliefs can be arranged into 层次体系

legible /ˈlɛdʒəbəl/ (of written or printed words) clear enough to read （手写或印刷文字）清晰可读的；清楚的

legibility /ˌlɛdʒəˈbɪləti/ （手写体等的）清晰性、可辨认性

readable /ˈridəbəl/ (of a book, an article, etc.) that is easy, interesting and enjoyable to read (书、文章等) 可读性强；通俗易懂的

readability /ˌridəˈbɪlɪti/ （文章等的）可读性

display /dɪˈspleɪ/ the words, pictures, etc. shown on a computer screen （计算机屏幕上的）显示，显像

resolution /ˌrɛzəˈluʃən/ the power of a computer screen, printer, etc. to give a clear image, depending on the size of the dots that make up the image 清晰度；分辨率

For someone like Lisa who needs to design pages and content but have no background or formal training in design, this chapter will be of some help. You will learn basic design principles to make your pages look more appealing and attractive to readers.

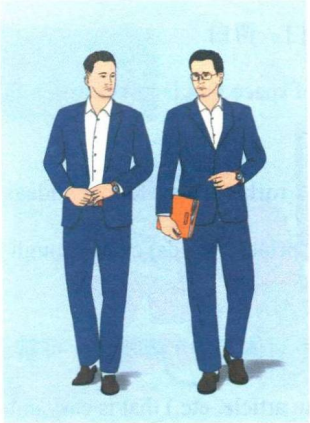
"C.R.A.P" principle: Contrast, Repetition, Alignment, Proximity

The term C.R.A.P. —coined by author Robin Williams— is the acronym of four basic principles in document design: **C**ontrast, **R**epetition, **A**lignment, and **P**roximity. C.R.A.P. appears in every well-designed document. Although we will discuss each of these principles

separately, please be aware that they are really interconnected. Rarely will we apply one single principle.

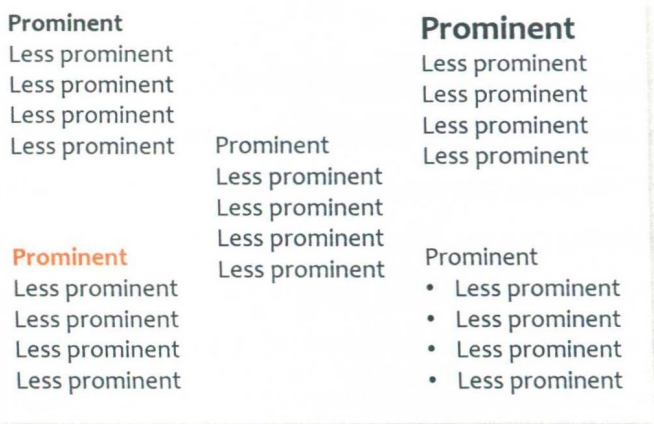
Contrast

Please take a quick look at these two pictures. Which picture seems more noticeable to you? You probably will say that the second one catches your eyes. And why is that? Well, the two figures in the second picture are quite distinctive—meaning they are in great contrast.



Contrast is one of the most effective methods to add visual interest to the page. By doing so, you are luring your readers to look at the page as well as to create an organizational hierarchy among various elements. A very important rule to remember is that in order to make the contrast effective, do it with strength and make it strong.

Contrast can be created in many ways. In this slide, the author uses a few strategies to create contrast. How many methods can you identify?



You can contrast the large type with the small type; the cool color with the warm color; the boldface with the regular one, as is shown in this slide. You can also contrast the thin line with the thick line; the smooth texture with the rough texture; the horizontal element (such as a long line of textual content) with the vertical content (such as a narrow column of text); the widely spaced lines with the closely spaced line; the small graphic with the large graphic.

Purposes	Methods
To create interest	Typeface (font, weight, size, style, etc)
To aid in organization	Color
	Spacing

Sean MAYER

s.mayer05@student.xyz.edu □1) 412-626-0809

EDUCATION

XYZ INSTITUTE OF TECHNOLOGY — Atlanta, GA
Bachelor of Science in Electrical and Computer Engineering GPA 3.74/4.00 — May 2020
Revlavanet coursework: power and control systems, communications and digital signal processing, computer engineering, networking, and robotics
Minor: Chinese Studies

COMPUTER SKILLS

Programming Languages: C/C++, Java, Python, System Verilog, MATLAB
Software: Git, MS Office, SolidWorks, Auto-CAD, Revit, AGi32, Cadence
Operating Systems: Aolle Macintosh OSX, MS Windows OS, Linux Ubuntu
Foerign Lanugages: Mandarin Chinese □fluent); Spanish □conversational)

WORK EXPERIENCE

XYZ INSTITUTE OF TECHNOLOGY CYLAB, Atlanta, GA
Summer Research Software Intern, May—July,2019
Accomplished autonomous flight using GPS Waypoints for A.R. Drone 2.0
Assisted in human detection algorithms using thermal camera
Contributed to long-range radio drone-to-drone communications

M.C. DEAN, Dulles, VA
Design Engineer Intern, June—July, 2018
Designed lighting circuits in 2 current projects using AutoDesk AutoCAD and Revit; performed lighting ca lculations and analysis using AGi32
Conducted over 20 pages of takeoffs for cost analysis
Corrected over 30 pages of lighting diagrams and circuiting

GENERAL DYNAMICS INFORMATION TECHNOLOGY, Fairfax, VA
Technical Summer Intern, May—July 2017
Developed desktop virtualization solutions for 2 government contracts
Involved in pitching Email as a Service □EaaS) to 3 U.S. government agencies
Performed a market analysis in the Federal Space for Cloud technology and desktop virtualization

XYZ INSTITUTE OF TECHNOLOGY, Atlanta, GA
Computing Skills Course Instructor, Computer Education, Aug 2017–May 2018
Instructed required computer skills course for incoming freshmen
Worked with and evaluated students to promote maximum computing utilization

PROJECTS

Road Sign Recognition, Digital Communication & Signal Processing System Design,Atlanta, GA
Designed and implemented a road sign recognition algorithm on a TI C67 DSP, Jan–May 2019
Presented project at the Carnegie Mellon Undergraduate Research Symposium
Analog Circuit Design and Analysis, Electronic Devices and Analog Circuits, Atlanta, GA
Participated in a series of hands-on labs to build and operate analog circuits, Aug–Dec 2019
Gained experience in circuit and component modeling, amplifiers, filters and signal detection and processing

LEADERSHIP

Office of the Dean of Student Affairs — Atlanta, GA
Planning Committee, Take Our Children to Work Day: — Aug 2017 – present
Volunteer, Niteline Information Resource/ Crisis Control Phone Line — Aug 2018 – present
XYZ MARATHON CHALLENGE — Atlanta, GA
Training Program Director — Jan - May 2018
Developed training program for 25 charity runners.
Raised over $25,000 to support Phillips House Association and The Decatur Food Project.

HORNORS & SCHOLARSHIPS

Dean's List, College of Engineering: Fall 2019
Sony Scholarship, 2018

This is a typical résumé. The information is all there on the page, and if your readers—very likely potential employers—want to read it, they surely will, but it certainly doesn't grab their attention in the first place. A very noticeable flaw on this page is the job titles blending in with the body text, which makes it hard for the readers to capture.

Sean MAYER

s.mayer05@student.xyz.edu □1) 412-626-0809

EDUCATION

XYZ INSTITUTE OF TECHNOLOGY Atlanta, GA
Bachelor of Science in Electrical and Computer Engineering GPA 3.74/4.00 May 2020
Revlavanet coursework: power and control systems, communications and digital signal processing, computer engineering, networking, and robotics
Minor: Chinese Studies

COMPUTER SKILLS

Programming Languages: C/C++, Java, Python, System Verilog, MATLAB
Software: Git, MS Office, SolidWorks, Auto-CAD, Revit, AGi32, Cadence
Operating Systems: Aolle Macintosh OSX, MS Windows OS, Linux Ubuntu
Foerign Lanugages: Mandarin Chinese □fluent); Spanish □conversational)

WORK EXPERIENCE

XYZ INSTITUTE OF TECHNOLOGY CYLAB Atlanta, GA
Summer Research Software Intern May—July,2019
- Accomplished autonomous flight using GPS Waypoints for A.R. Drone 2.0
- Assisted in human detection algorithms using thermal camera
- Contributed to long-range radio drone-to-drone communications

M.C. DEAN Dulles, VA
Design Engineer Intern June—July, 2018
- Designed lighting circuits in 2 current projects using AutoDesk AutoCAD and Revit; performed lighting calculations and analysis using AGi32
- Conducted over 20 pages of takeoffs for cost analysis
- Corrected over 30 pages of lighting diagrams and circuiting

GENERAL DYNAMICS INFORMATION TECHNOLOGY Fairfax, VA
Technical Summer Intern May—July 2017
- Developed desktop virtualization solutions for 2 government contracts
- Involved in pitching Email as a Service □EaaS) to 3 U.S. government agencies
- Performed a market analysis in the Federal Space for Cloud technology and desktop virtualization

XYZ INSTITUTE OF TECHNOLOGY Atlanta, GA
Computing Skills Course Instructor, Computer Education Aug 2017–May 2018
- Instructed required computer skills course for incoming freshmen
- Worked with and evaluated students to promote maximum computing utilization

PROJECTS

Road Sign Recognition, Digital Communication & Signal Processing System Design Atlanta, GA
- Designed and implemented a road sign recognition algorithm on a TI C67 DSP Jan–May 2019
- Presented project at the Carnegie Mellon Undergraduate Research Symposium

Analog Circuit Design and Analysis, Electronic Devices and Analog Circuits Atlanta, GA
- Participated in a series of hands-on labs to build and operate analog circuits Aug–Dec 2019
- Gained experience in circuit and component modeling, amplifiers, filters and signal detection and processing

LEADERSHIP

Office of the Dean of Student Affairs Atlanta, GA
- Planning Committee, Take Our Children to Work Day: Aug 2017 – present
- Volunteer, Niteline Information Resource/ Crisis Control Phone Line Aug 2018 – present

XYZ MARATHON CHALLENGE Atlanta, GA
Training Program Director Jan - May 2018
- Developed training program for 25 charity runners.
- Raised over $25,000 to support Phillips House Association and The Decatur Food Project.

HORNORS & SCHOLARSHIPS

Dean's List, College of Engineering: Fall 2019
Sony Scholarship, 2018

By comparison, the revised version here shows a much clearer design. Besides noticeable improvements such as the consistency in alignment and repetition, the "Accomplished" part is much effective as it has both degree and job titles in boldface—a strong contrast that enables readers to skim the important points.

How to get it?

• You can add contrast through typeface choices, line thicknesses, colors, shapes, sizes, space, etc. This is probably the easiest and most satisfying way to add visual interest to your page.

What to avoid?

• If you are going to contrast, do it with strength.

• Avoid contrasting the kind-of-heavy line with the kind-of-heavier line. Avoid contrasting dark gray text with black headlines. Avoid applying multiple typefaces that are similar.

A quick wrap-up of contrast

- Contrast on a page draws your readers' eyes to it; human eyes like contrast.
- The first purpose is to create an interest on the page–if a page is interesting to look at, it is more likely to be read.
- The second purpose is to improve the organization of information. Your reader should be able to instantly understand the way the information is organized and the logical flow from one item to another.

Repetition

Here we have two pictures, each of which contains a unified group of students and a few random passersby. Can you identify the group at a glance?

Well, very likely you can easily tell that those in orange vest or with orange hat in the second picture belong to the same group, but it is not easy to distinguish the group from the random passersby in the first picture. The reason? Well, once you have a group of people wearing the same uniform, you automatically assume that

they somewhat are bound together.

The principle of repetition states that repeat the same element of design throughout the entire piece. The repetitive elements could be a gold font, a thick line, a bullet point, color, font size, visual format, a spatial relationship, etc. In short, it can be anything that your readers can visually recognize.

Actually you have already used repetition in your work. For example, making headlines in a brochure all the same size and weight, adding a line a half-inch from the top of each page, using the same bullet point in each slide throughout your PowerPoint presentation. These are all examples of repetition, meaning you are using the same design over and over again in one document to stress certain information.

Repetition can be associated with "consistency". As you read through a fifteen-page technical report, it is the repetition of certain elements such as a center-aligned title in 12 point, Times New Roman, that helps you locate different levels of information.

Purposes	Methods
To add visual interest	Repeating font, size, shape, etc.
To unify content	Through spatial relationships

Let's read an example of repetition.

This is a syllabus of *Engineering Probability and Statistics*. Whoever the author is, he/she arranges the information quite effectively in terms of consistency.

TEXAS A&M UNIVERSITY COMMERCE

IE 211.001 Engineering Probability and Statistics
Course Syllabus: Spring 2013
MW 3:00-4:15PM AG/IT 253 and 211

Instructor: Wen-Hsing Liu, Ph.D.
Ad-Interim Assistant Professor
Department of Engineering & Technology

Office Location: Charles J. Austin Industrial Engineering & Technology Building, Room 216 (AG/IT 216)

Office Hours: MW 4:15-5:00PM, TR 1:00-2:45PM or by appointment

Office Phone: 903-886-5471

Email Address: WenHsing.Liu@tamuc.edu

COURSE INFORMATION

Class Meeting Time and Room:
MW 3:00-4:15PM AG/IT 253 and 211

Course Text:
Montgomery, Douglas C. and Runger, George C. (2011). *Applied Statistics and Probability for Engineers*, Fifth Edition. John Wiley and Sons, Inc. (ISBN: 978-0-470-05304-1)

Course Description:
This course covers the role of statistics in engineering, probability, discrete random variables and probability distributions, continuous random variables and probability distributions, joint probability distributions, random sampling and data description, point estimation of parameters, statistical intervals for a single sample, and tests of hypotheses for a single sample.
Prerequisite: Math 192-Calculus II (Undergraduate Catalog 2012-2013)

Student Learning Outcomes:
After successfully completing the course, students should be able to do the following:

1. Use statistical methodology and tools in the engineering problem-solving process.
2. Compute and interpret descriptive statistics using numerical and graphical techniques.
3. Understand the basic concepts of probability, random variables, probability distribution, and joint probability distribution.
4. Compute point estimation of parameters, explain sampling distributions, and understand the central limit theorem.
5. Construct confidence intervals on parameters for a single sample.

Course Website: Class handouts, homework problems, and other relevant course materials will be posted on the eCollege course website. Students are expected to check the course website before every class for new information. To access the course website, login in to "myLEO", select "eCollege", and select "My courses".

COURSE REQUIREMENTS

This course will be presented by using lectures, in-class exercises, and discussions. Student learning outcomes will be evaluated based on quizzes and exams.

1. There will be three mid-term exams and one final exam (see course schedule). All exams are open book and closed notes. Using any other resources during exams is not allowed. Students are allowed to bring a calculator during exams. There will be no make-up exams except in the cases noted below (see fourth bullet point).
2. There will be 10 quizzes (see course schedule). You are allowed to drop one of 10 quiz scores. Therefore, the quiz portion of your grade will be 35% of your course grade and will be calculated using the average of your best nine quiz scores (each quiz is equally weighted). There will be no make-up quizzes except in the cases noted below (see fourth bullet point).
3. Homework problems for each chapter will be assigned but will not be collected or graded. Therefore, students are encouraged to discuss and work together on the homework problems. Completing the homework problems is definitely an excellent way to prepare for the quizzes and exams.
4. No make-up exams and quizzes will be permitted unless official documentation for absences is provided. All documented absences due to religious observances and officially approved trips will be guaranteed as a make-up opportunity. Absences due to other unavoidable reasons (e.g., death in the family, illness) will be considered on a case-by-case basis, with appropriate documentation required. Except in the case of an emergency, the student must always seek instructor consent prior to the absence. Typically, make-up exams and quizzes might occur before the scheduled absence and as close to the original assignment date as possible. Generally, students who miss quizzes for officially documented absences may either elect to take a make-up quiz or use grade replacement with the next quiz.

Grading:

The final course grade will be calculated based on the following:

Quizzes	35%
Exam 1	15%
Exam 2	15%
Exam 3	15%
Final Exam	20%

The grading scale is as follows:

90 - 100	A
80 - 89	B
70 - 79	C
60 - 69	D
Below 60	F

TECHNOLOGY REQUIREMENTS

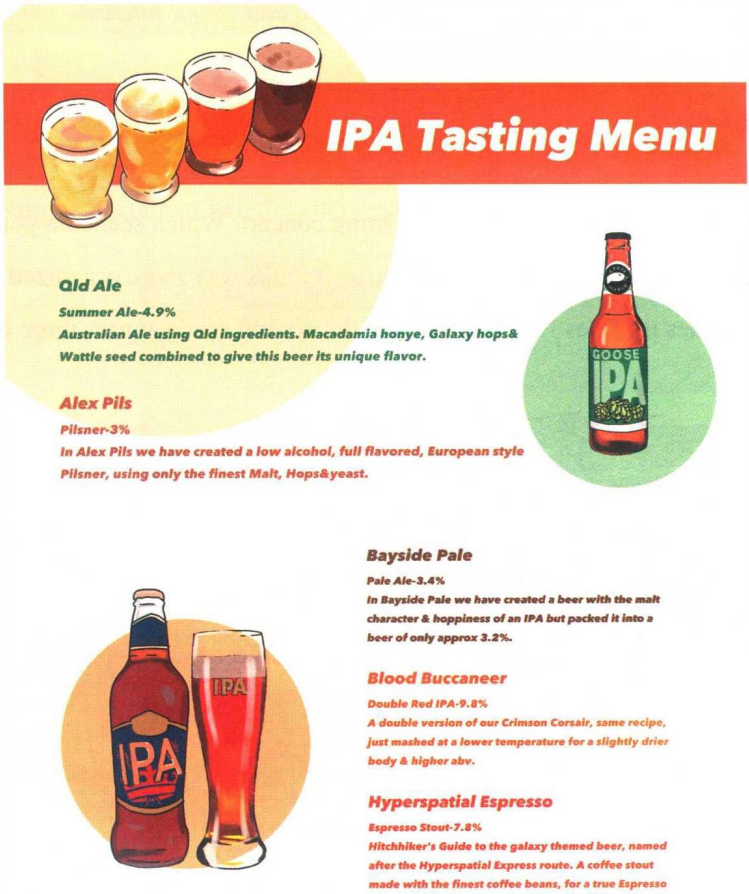
The following technologies will be required for this course.

- A scientific calculator
- Internet access to the course website
- Minitab (available to students in the computer lab)

(Source: http://www.tamuc.edu/academics/cvSyllabi/syllabi/201320/20545.pdf)

Headings such as "COURSE INFORMATION," "COURSE REQUIREMENTS," and "TECHNOLOGY REQUIREMENTS" are all capitalized, in boldface, and placed in a rectangle box, indicating that these headings are of the same level. Other headings such as "Course Text," "Course Description," "Student Learning Outcomes," "Course Website," and "Grading" are using the same design— first letter in upper case, same typeface, and same size—to indicate they are the second level headings, or sometime can be called *subheadings*.

Repetition doesn't mean you have to repeat exactly the same thing, which is especially the case in designing marketing materials. In this poster, the author applies the same typeface on the name of each drink (the heading) but applies a different color respectively. By doing so, the author adds more fun to the page, which should be more appealing to its readers.



How to get it?

- Firstly, find the elements that require a consistent presentation throughout the document.
- Secondly, identify the *existing* repetitions.
- Thirdly, try to *create* or *strengthen* the repetition to enhance the design and the clarity of the information.

What to avoid?

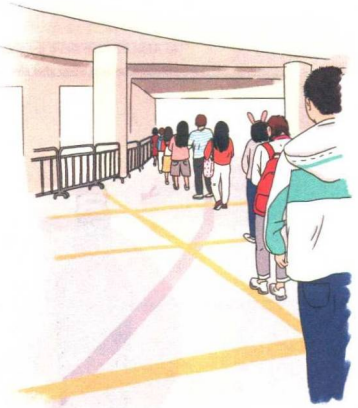
- Avoid repeating the elements so much that it becomes annoying or overwhelming.

A quick wrap-up of repetition

- A repetition of visual elements throughout the design unifies and strengthens a piece by tying together otherwise separate parts.
- Repetition is very useful on one-page pieces and is critical in multi-page documents (where we often just call it being consistent).
- The basic purpose of repetition is to *unify* and to *add visual interest*.

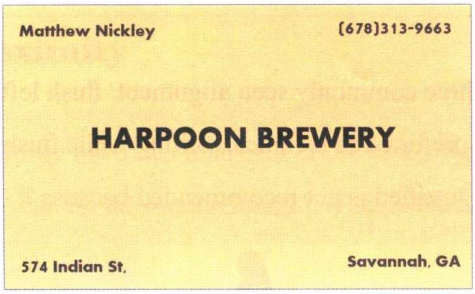
Alignment

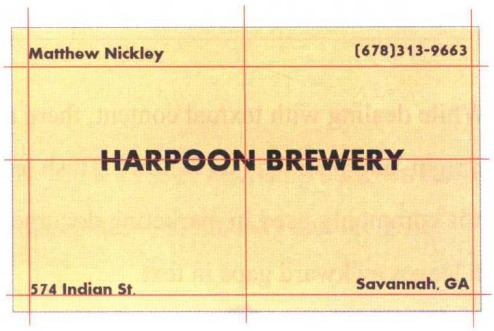
Suppose we are at the box office of an upcoming concert. Which scene do you expect to see? I bet all of us want to see the second one as it looks way more organized than the first one. So here comes the question. What makes the second scene appear more organized?



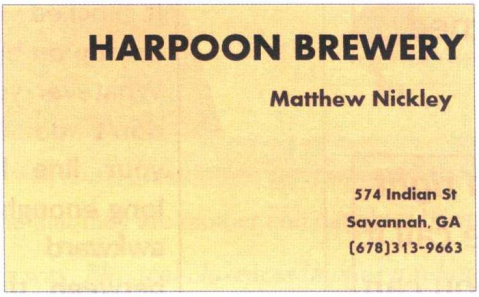
The principle of *alignment* states, "nothing should be placed on the page arbitrarily. Every item should have a visual connection with something else." The principle of alignment forces you to be mindful of the placement of elements on the page—no longer can you just randomly throw things on the page.

When items are aligned on the page, a stronger unit emerges. Sometimes even though items are physically distant, there is an invisible line that connects items together, both in your eye and in your mind.

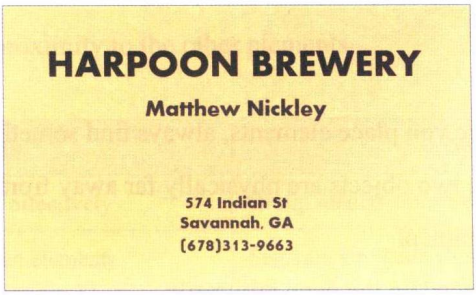




The elements on this business card seem like they were randomly thrown on. There are too many lines on one page. None of the elements has any connection with another element on the card. While reading a document like this, the readers' eyes are constantly moving.



By moving the elements to the right and giving them one single alignment, the information on the card looks much organized right away. It's easier for our eyes to catch.



This design aligns content down the center. A centered alignment, unlike the left or right alignment that has a strong vertical edge to follow, usually shows a softer edge and the strength of the line is weakened.

Purposes	Methods
To unify multiple elements on a page	Draw invisible lines on your page
To organize elements	Make every element have some visual connection with another element

While dealing with textual content, there are three commonly seen alignment: flush left, flush right, and justified (see below). Flush left is preferred in technical writing while flush right is commonly used in marketing documents. Justified is not recommended because it often leaves awkward gaps in text.

The text is ***flush left***. Some people call it quad left, or you can say it is left aligned.	This text is ***justified***. Some people call it quad left and right, and some people call it blocked – the text line up on both sides. Whatever you call it, don't do it unless your line length is long enough to avoid awkward gaps between the words because the gaps are really annoying, don't you think?
The text is ***flush right***. Some people call it quad left, or you can say it is right aligned.	

How to get it?

- Be conscious of where you place elements, always find something else on the page to align with, even if the two objects are physically far away from each other.

A quick wrap-up of alignment

- Nothing should be placed on the page arbitrarily.

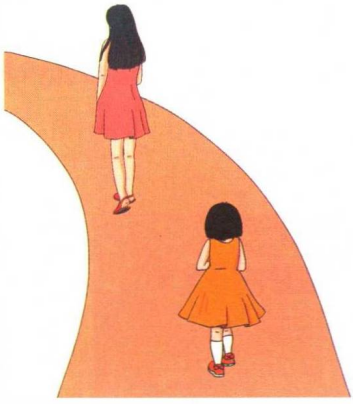
- Every item should have a visual connection with something else on the page.

What to avoid?

- Avoid using more than one text alignment on the page. For example, centering some text and right-aligning other text. Having multiple alignments on one page makes the visual presentation busy, messy, and hard to follow.
- Try to avoid using centered alignment in technical documents unless you are consciously trying to create a more formal, sedate presentation.

Proximity

Here we have two images. For the first image, can you tell the relationship between them? How about the second image? What is the relationship between the lady and the girl?

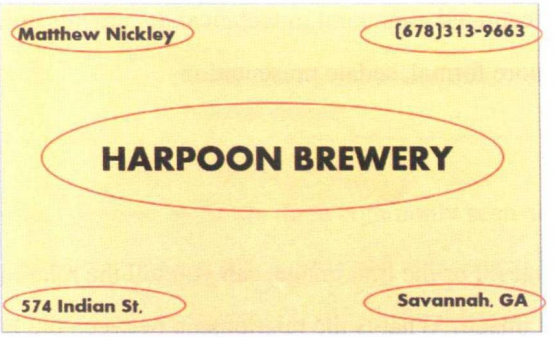


Naturally we will assume that they are mother and daughter because they are walking hand-in-hand. Put it another way. *Physical closeness implies a relationship.*

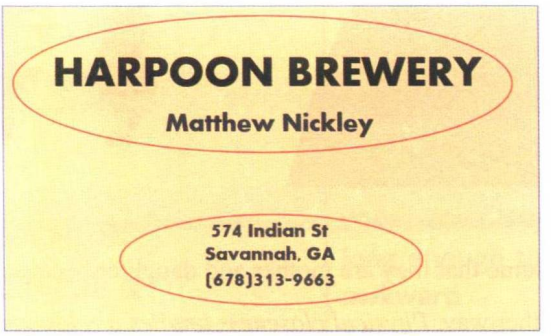
The *principle of proximity* says that you group related items together, move these items physically close to each other so that the related items are seen as one cohesive unit rather than a bunch of scattered bits. Items or groups of information that are not closely related should not be put in close proximity to the other elements.

Purposes	Methods
To organize information more effectively	Group related items together
To clarify relationships between elements	Separate unrelated elements

By grouping similar elements into one unit, you are giving your readers an instant clue to the organization and content of the page: the page becomes more organized as your readers understand where to begin reading the content and when they are finished. And the "white space" (the space around the texts) automatically becomes more organized.



In this business card, it seems that not one of the items are related to any other item. Readers don't know where they should begin reading the card.



After grouping elements, the page looks much better organized.

Head

TEXAS A&M UNIVERSITY COMMERCE

IE 211.001 Engineering Probability and Statistics
Course Syllabus: Spring 2013
MW 3:00-4:15PM AG/IT 253 and 211

Logistics

Instructor: Wen-Hsing Liu, Ph.D.
Ad-Interim Assistant Professor
Department of Engineering & Technology
Office Location: Charles J. Austin Industrial Engineering & Technology Building, Room 216 (AG/IT 216)
Office Hours: MW 4:15-5:00PM, TR 1:00-2:45PM or by appointment
Office Phone: 903-886-5471
Email Address: WenHsing.Liu@tamuc.edu

COURSE INFORMATION

Class Meeting Time and Room:
MW 3:00-4:15PM AG/IT 253 and 211

Course Text:
Montgomery, Douglas C. and Runger, George C. (2011). *Applied Statistics and Probability for Engineers*, Fifth Edition. John Wiley and Sons, Inc. (ISBN: 978-0-470-05304-1)

Course Description:
This course covers the role of statistics in engineering, probability, discrete random variables and probability distributions, continuous random variables and probability distributions, joint probability distributions, random sampling and data description, point estimation of parameters, statistical intervals for a single sample, and tests of hypotheses for a single sample.
Prerequisite: Math 192-Calculus II (Undergraduate Catalog 2012-2013)

Student Learning Outcomes:
After successfully completing the course, students should be able to do the following:

1. Use statistical methodology and tools in the engineering problem-solving process.
2. Compute and interpret descriptive statistics using numerical and graphical techniques.
3. Understand the basic concepts of probability, random variables, probability distribution, and joint probability distribution.
4. Compute point estimation of parameters, explain sampling distributions, and understand the central limit theorem.
5. Construct confidence intervals on parameters for a single sample.

Course Website: Class handouts, homework problems, and other relevant course materials will be posted on the eCollege course website. Students are expected to check the course website before every class for new information. To access the course website, login in to "myLEO", select "eCollege", and select "My courses".

Requirements

COURSE REQUIREMENTS

This course will be presented by using lectures, in-class exercises, and discussions. Student learning outcomes will be evaluated based on quizzes and exams.

1. There will be three mid-term exams and one final exam (see course schedule). All exams are open book and closed notes. Using any other resources during exams is not allowed. Students are allowed to bring a calculator during exams. There will be no make-up exams except in the cases noted below (see fourth bullet point).
2. There will be 10 quizzes (see course schedule). You are allowed to drop one of 10 quiz scores. Therefore, the quiz portion of your grade will be 35% of your course grade and will be calculated using the average of your best nine quiz scores (each quiz is equally weighted). There will be no make-up quizzes except in the cases noted below (see fourth bullet point).
3. Homework problems for each chapter will be assigned but will not be collected or graded. Therefore, students are encouraged to discuss and work together on the homework problems. Completing the homework problems is definitely an excellent way to prepare for the quizzes and exams.
4. No make-up exams and quizzes will be permitted unless official documentation for absences is provided. All documented absences due to religious observances and officially approved trips will be guaranteed as a make-up opportunity. Absences due to other unavoidable reasons (e.g., death in the family, illness) will be considered on a case-by-case basis, with appropriate documentation required. Except in the case of an emergency, the student must always seek instructor consent prior to the absence. Typically, make-up exams and quizzes might occur before the scheduled absence and as close to the original assignment date as possible. Generally, students who miss quizzes for officially documented absences may either elect to take a make-up quiz or use grade replacement with the next quiz.

Grading

Grading:
The **final course grade** will be calculated based on the following:

Quizzes	35%
Exam 1	15%
Exam 2	15%
Exam 3	15%
Final Exam	20%

The grading scale is as follows:

90 - 100	A
80 - 89	B
70 - 79	C
60 - 69	D
Below 60	F

TECHNOLOGY REQUIREMENTS

The following technologies will be required for this course.

- A scientific calculator
- Internet access to the course website
- Minitab (available to students in the computer lab)

(Source: http://www.tamuc.edu/academics/cvSyllabi/syllabi/201320/20545.pdf)

This syllabus, designed for a Statistics course, is a good example of proximity. The author has grouped information in a way that readers—in this case students—can easily locate information.

How to get it?

- Try the squint test.

  Squint your eyes slightly and count the number of visual elements on the page by counting the number of times your eyes stop. If there are more than three to five items on the page (of course it depends on the piece), see which of the separate elements can be grouped together into closer proximity to become one visual unit.

What to avoid?

- Avoid using too many separate elements on a page.
- Avoid even a split second of confusion over whether a headline, subhead, caption, graphic, or the like belongs to its related materials. Create a relationship among elements with close proximity.
- Don't create relationships with elements that don't belong together. If they are not related, move them apart from each other.
- Don't stick things in the corners or in the middle just because the space is empty.

A quick wrap-up of proximity

- When several items are in close proximity to each other, they become one visual unit rather than several separate units. Items relating to each other should be grouped together.
- The basic purpose of proximity is to organize.

Typography

Typography is the art and technique of arranging type to make written language legible, readable, and appealing when displayed. The design of type involves selecting typefaces, point sizes, line lengths, line-spacing, and letter-spacing (tracking), etc.

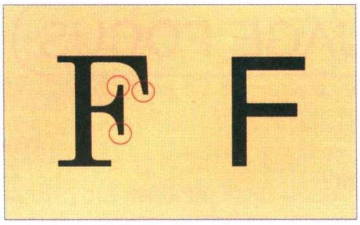
Typeface refers to the set of letters, numbers, punctuations, marks and other symbols, all bearing the same characteristic design. There are thousands of existing typefaces, and new ones are being created every year. Here you can find three typefaces:

There is nothing noble in being superior to your fellow men. True nobility lies in being superior to your former self.

There is nothing noble in being superior to your fellow men. True nobility lies in being superior to your former self.

There is nothing noble in being superior to your fellow men. True nobility lies in being superior to your former self.

This presents three contrasting typefaces. The first one is *cursive*, which could be quite appealing aesthetically but might hinder readability. So use it cautiously. The second one is Times New Roman, which is a *serif* typeface. The third one is Arial, which is a *sans serif* typeface.

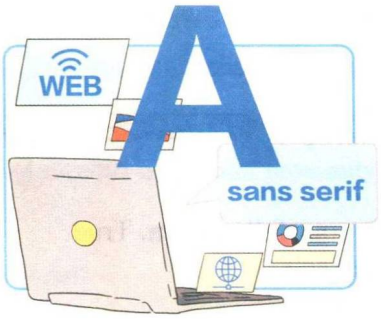


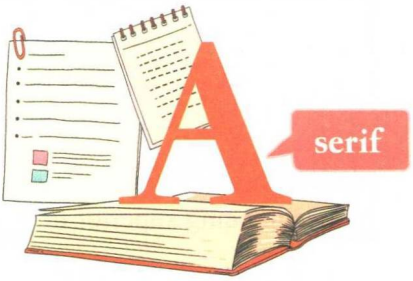
Serif is a small line or "hook" attached to the end of a larger stroke. Serif typeface refers to the ones with the serif at the end of each stroke while sans serif literally means "no serif".

Can you distinguish serif typefaces and sans serif typefaces?

Arial
Bondi MT
Comic Sans MS
Haettenschweiler
Niagara Engraved
Times New Roman

You should be mindful of choosing the right typeface while dealing with different types of document. For example, because studies have shown that serif typefaces encourage readers' eyes to move along the line which results in better reading speed, it is preferable to use serif typeface in body text as it is more legible and less likely to cause fatigue. Sans serif typefaces, on the other hand, are typically used for emphasis. You can use it on titles and headings.





When it comes to the delivery format of text, typeface also plays a role. For printed material, you can use serif typeface. For digital or web text, sans serif displays better on low-resolution displays or big screens.

LANGUAGE FOCUS

- How to talk about alignment?

  Example 1: *You probably noticed that Edward has changed the centered alignment to flush left.*

  Example 2: *Until you have more training, stick to the guideline of using one text alignment on the page: either all text is flush left, flush right, or centered.*

- How to talk about proximity?

  Example 1: *Besides the centered alignment, lack of proximity, and dull typeface, this ad seriously lacks contrast.*

  Example 2: *If items are related to each other, group them into closer proximity.*

- How to talk about contrast?

Example 1: *You can add contrast in many ways: lines, typefaces, colors, spatial relationships, directions, etc.*

Example 2: *He thus stood in sharp contrast to other reformers of his era.*

- How to talk about typeface?

Example 1: *Now the contrast between typefaces is clear—the very boldface contrasts the lightface.*

Example 2: *Capitalization is the writing of a word with its first letter in uppercase and the remaining letters in lowercase. English capitalization rules are very important in writing.*

GUIDELINES OR CHECKLISTS

1. If you are going to contrast, do it with strength.
2. Avoid repeating the elements so much that it becomes annoying or overwhelming.
3. Avoid using more than one text alignment on the page.
4. Avoid using centered alignment unless you are consciously trying to create a more formal, sedate presentation.
5. Use capitalization cautiously. Avoid using all capitals as it sounds rude. *Five major goals in designing a document*:

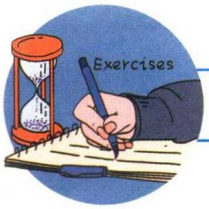
① To make good impression on your readers. Your document should reflect your professional standards and those of your organization.

② To help readers understand the structure and hierarchy of the information.

③ To help readers find the information they need. People usually don't read every word in a document, so your design should help your readers easily locate the information they are looking for.

④ To help readers understand the information. Effective design will clarify information.

⑤ To help readers remember the information. An effective design helps readers create a visual image of the page, making it easier to remember or recall information.



EXERCISES

1. Document analysis activity: Analyzing a page design

This page is from a marketing white paper. The questions below ask you to think about page design as we discuss in this chapter.

Introduction
Key takeaways
The trend line

Evolved shoppers
Power shoppers
Millennial marvels

Shiny new objects
New technology
New markets
New models

Channel dynamics
Mobile-ready shoppers
Reimagining the store
Social butterflies

The ready retailer
The fundamentals
The new logistics reality

Methodology & Contact

Key takeaways

The research results in this study are divided into four sections:

Evolved shoppers

One certainty is clear — the shopper is taking more and more control. The first section, *Evolved Shoppers*, looks at two groups of shoppers who stand out for doing more shopping online and seizing even greater control of the process. This year, the research was expanded to take an in-depth look at the *Power Shopper*. Their seemingly expert-level shopping expertise has important financial implications for every retailer.

The second group, *Millennial Marvels*, also stands out by making technology and social media central to their lives and their shopping process. They recently became the largest group of shoppers with the most buying power, now surpassing Baby Boomers.

Shiny new objects

The consumer's infatuation with everything new makes for a natural audience on which to test an array of innovations. New technologies and business models are being introduced to the retail landscape, including showrooms, growing marketplace offerings, wearable devices and connected home products.

The Internet of Things (IOT) is here now, providing both well-connected homes and products. With exponential growth forecasted, IOT is definitely something retailers need to understand.

Channel dynamics

Mobile is arguably having the most significant impact on shopping with growing levels of use for researching, purchasing and transacting business in store, at home and on the go.

Retailers must *Reimagine The Store* of the future to once again excite the shopper. From inventory transparency to associates armed with mobile POS devices that can check out shoppers faster than ever, retailers must embrace new technologies to ensure exemplary shopping experiences.

The use of social media by *Social Butterflies* in growing numbers is increasingly important to retailers — both online and in stores.

The ready retailer

Retailers must step up their game to compete by first ensuring *The Fundamentals* that shoppers insist on are at peak performance.

The New Logistics Reality provides sometimes surprising insight on what retailers need to deliver in an era where consumers increasingly "Want It Now." Shoppers need delivery choices, more control and flexible alternatives to home delivery in their relentless search for convenience and a better price.

UPS Pulse of the Online Shopper™

© 2016 United Parcel Service of America, Inc. 3

(Source: UPS Pulse of the Online Shopper: Tech-savvy shoppers transforming retail, https://www.ups.com/assets/resources/media/knowledge-center/2016_UPS_Pulse_of_the_Online_Shopper.pdf)

a. How many levels of headings appear on this page? Are the different levels designed effectively so that they are easy to distinguish? If not, what changes would you make to the design?

b. How are the C.R.A.P. rules used on this page? Are they effective? Would you change any of them?

c. Describe the design of the body text on this page, focusing on columns and alignment. Is the design of the body text effective? Would you change it in any way?

2. Re-design the document

a. Is this menu well designed? If not, what are the problems with the menu? Name the problems so you can find the solutions.

b. Can you rearrange the content to make it more reader friendly? Try to apply the design principles we discussed in this chapter. Feel free to use software that is suitable to deliver the content effectively and aesthetically.

You might need to do some research on the dishes. What do the ingredients tell you? Are the dishes grouped appropriately? Do you need additional information?

The Brazen Head
A traditional Irish restaurant

SALADS
ADD CHICKEN TO YOUR SALAD FOR €5.00

GREEK SALAD (CONTAINS * 6, 7) V GF
MIXED SALAD LEAVES, BLACK OLIVES, FETA CHEESE, TOMATO, CUCUMBER AND RED ONION TOSSED WITH A BASIL DRESSING.€11.50

CHICKEN CAESAR SALAD (CONTAINS * 1, 4, 7)
CHARGRILLED CHICKEN, CRISPY BACON, LETTUCE, CROUTONS, PARMESAN SHAVINGS, AND OUR OWN CLASSIC CAESAR DRESSING.€13.00

GOATS CHEESE AND BEETROOT SALAD (CONTAINS * 6, 7, 8) V GF)
WARM GOATS CHEESE, SLICES OF BEETROOT, TOMATO, AND WALNUTS, SERVED ON A BED OF MIXED SALAD DRIZZLED WITH A PESTO & BALSAMIC DRESSING.€12.50

CLONAKILTY BLACK PUDDING SALAD (CONTAINS * 1, 4, 6, 9) V
BLACK PUDDING SERVED ON A BED OF MIXED SALAD LEAVES, RED ONION, TOMATO, CUCUMBER WITH A CAESAR & PESTO DRESSING.€12.00

Traditional Irish Dishes
HONEY MUSTARD GLAZED BACON & CABBAGE (CONTAINS * 7, 10) GF
GLAZED LOIN OF BACON SERVED WITH BOILED CABBAGE, CREAMY MASHED POTATO, VEGETABLES, SUNDRIED TOMATO PESTO AND PARSELY SAUCE.€15.00

IRISH STEW (CONTAINS * 7 MASH, 9) GF
CHUNKS OF IRISH LAMB, VEGETABLES TOPPED WITH CREAMY MASH POTATO IN THIS MOST TRADITIONAL OF IRISH DISHES. SERVED WITH BROWN BREAD.€16.50

FISH & CHIPS (CONTAINS * 1, 3, 4, 6, 7)
FRESH COD DEEP FRIED IN A HOMEMADE BEER BATTER, SERVED WITH TARTAR SAUCE, WEDGE OF LEMON AND CHUNKY CHIPS.€16.50

ATLANTIC SEAFOOD CHOWDER (CONTAINS * 4, 7, 9, 14) V
CHUNKS OF FRESH COD, SMOKED COD, SALMON AND VEGETABLES MAKE UP THIS IRISH CLASSIC. SERVED WITH BROWN BREAD.€12.50

BEEF & GUINNESS STEW (CONTAINS * 1, 7 MASH, 9)
CHUNKS OF IRISH BEEF, MUSHROOMS AND VEGETABLES IN A RICH GUINNESS & THYME SAUCE TOPPED WITH CREAMY MASH. SERVED WITH BROWN BREAD.€16.50

SMOKED COD (CONTAINS * 4, 7) GF
SMOKED COD POACHED WITH ONION, SERVED WITH CREAMY MASHED POTATO VEGETABLES, SUNDRIED TOMATO AND PARSELY SAUCE.€16.50

Allergen Information
Cereals containing Gluten = 1 Crustaceans = 2 Eggs = 3 Fish = 4 Peanuts = 5 Soybeans = 6 Milk = 7 Nuts = 8 Celery = 9 Mustard = 10 Sesame seeds = 11 Sulphur dioxide & sulphites= 12 Lupin = 13 Molluscs = 14 GF = Gluten free V = Vegetarian

All meats are 100% Irish and sourced locally with full traceability

Chapter 3

Communication Basics: Understanding Your Communication Situation

Contents

CASE 42

GLOSSARY 44

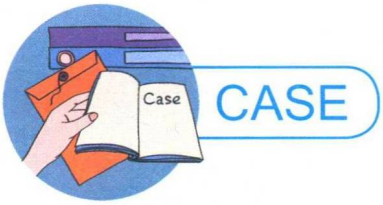
TASKS 45

- Audience analysis 45
- Task analysis 48
- Scenario analysis 49

LANGUAGE FOCUS 50

GUIDELINES OR CHECKLISTS 51

EXERCISES 52



Geheime Reichssache (Secret Reich Business)

Berlin, June 5, 1942

Changes for special vehicles now in service at Kulmhof (Chelmno) and for those now being built

Since December 1941, ninety-seven thousand have been processed [*verarbeite* in German] by the three vehicles in service, with no major incidents. In the light of observations made so far, however, the following technical changes are needed:

1. The vans' normal load is usually nine per square yard. In Saurer vehicles, which are very spacious, maximum use of space is impossible, not because of any possible overload, but because loading to full capacity would affect the vehicle's stability. So reduction of the load space seems necessary. It must absolutely be reduced by a yard, instead of trying to solve the problem, as hitherto, by reducing the number of pieces loaded. Besides, this extends the operating time, as the void must also be filled with carbon monoxide. On the other hand, if the load space is reduced, and the vehicle is packed solid, the operating time can be considerably shortened. The manufacturers told us during a discussion that reducing the size of the van's rear would throw it badly off balance. The front axle, they claim, would be overloaded. In fact, the balance is automatically restored, because the merchandise aboard displays during the operation a natural tendency to rush to the rear doors, and it is mainly found lying there at the end of the operation. So the front axle is overloaded.

2. The lighting must be better protected than now. The lamps must be enclosed in a steel grid to prevent their being damaged. Lights could be eliminated, since they apparently are

never used. However, it has been observed that when the doors are shut, the load always presses hard against them as soon as darkness sets in. This is because the load naturally rushes toward the light when darkness sets in, which makes closing the doors difficult. Also, because of the alarming nature of darkness, screaming always occurs when the doors are closed. It would therefore be useful to light the lamp before and during the first moments of the operation.

3. For easy cleaning of the vehicle, there must be a sealed drain in the middle of the floor. The drainage hole's cover, eight to twelve inches in diameter, would be equipped with a slanting trap, so that liquids can drain off during the operation. During cleaning, the drain can be used to evacuate large pieces of dirt.

The aforementioned technical changes are to be made to vehicles in service only when they come in for repairs. As for the ten vehicles ordered from Saurer, they must be equipped with all innovations and changes shown by use and experience to be necessary.

Submitted for decision to Gruppenleiter 11 D,
SS-Obersturmbannfihrer Walter Rauff.

Signed: Just

[Source: quoted in Katz, Steven B. (1992). The Ethic of Expediency: Classical Rhetoric, Technology, and the Holocaust. *College English*, 54, 3, pp. 255-275.]

This is a real memo, taken verbatim from the published transcript of *Shoah*, a 9-hour documentary film on the Holocaust directed by Claude Lanzmann. In this memo, the writer, Just, attempts to persuade his superior, Walter Rauff, of the necessity for technical improvements to the vans being used in the early Nazi program of exterminating the Jews and other "undesirables," just months before the Final Solution of gas chambers and death camps was fully operationalized. In this earlier stage of the Final Solution, four Einsatzgruppen, or "Special Action Groups," A, B, C, and D had been organized by Himmler to carry out executions by firing squads (Shirer 1248-49). Group D, whose field of operations included the southern Ukraine, was from June 1941 to June 1942 headed by Otto Ohlendorf, in the R.S.H.A., Himmler's Central Security Office (Shirer 1249).

> In 1942, Himmler ordered gassing vans to be used for executing women and children, because it was more efficient, "humane" (see Shirer 1250-51, 1254n.). The Wannsee Conference, in which the details of the Final Solution were worked out, had been held on January 20, 1942.
>
> Source: Katz, 1992, p. 256.

If we were to assess the memo merely "from the standpoint of technical communication, argumentation, and style, …by any formal criteria in technical communication, it is an almost perfect document" (Katz, 1992, p. 256) because this memo

- States the problem clearly at the very beginning
- Sets up for the recommendations it makes
- Explains and justifies the three recommendations clearly
- Uses effective format design by dividing the paragraphs and sections with good use of white space
- Contains content that is technically accurate and logically well argued.

We may label this memo "effective" technical writing, but is it "good" technical writing?

"Good" technical writing entails not just technically effective content and format design, but also being persuasive in an ethical way. Communication in a truly responsibly persuasive manner requires the writer's awareness of designing communication for the good of all parties involved, not just for expedient purposes. An analysis of this memo at face value without a full understanding of its historical and rhetorical context will not result in an accurate assessment of the value of this piece of technical writing.

rhetorical context /rɪˈtɔrɪkəl/ /ˈkɑntɛkst/ all factors in a communication situation that affects the outcome of communication, including audience, purpose, cultural context, constraints, etc. 语境，即沟通交流发生的环境，影响因素包括交流的目的、受众、限制条件等等

audience /ˈɑdiəns/ the reader or user of a document 听众、读者或信息的接收者

audience analysis /ˈɑdiəns/ /əˈnæləsəs/ analysis of audience demographics, needs, expectations, etc. that affect communication 读者分析

primary audience /ˈpraɪˌmɛri/ /ˈɑdiəns/ the main reader or user of a document 首要读者

demographics /ˌdɛməˈgræfɪks/ the statistics of a population, such as age, income, education, and ethnicity（个人或群体的）人口统计学信息，如年龄、收入、教育背景、民族 / 种族等

prior knowledge /ˈpraɪər/ /ˈnɑlədʒ/ what the reader or user already knows about the topic 先前知识、已掌握的知识

constraints /kənˈstreɪnts/ factors that impede communication （沟通中的）限制因素

task analysis /tæsk/ /əˈnæləsəs/ in technical writing, the analysis of the tasks user will perform with the information 任务分析

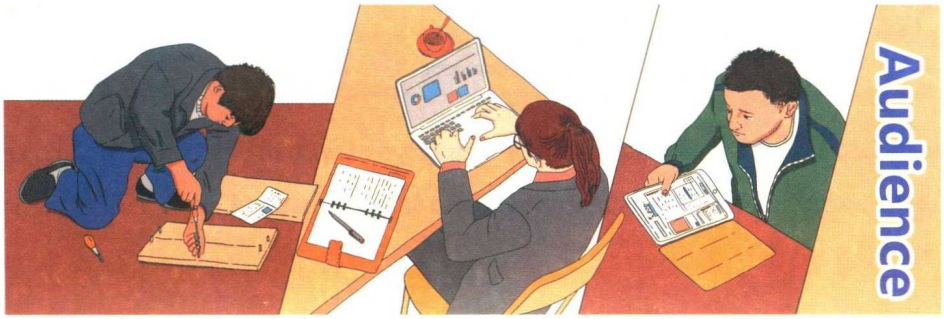
scenario analysis /sɪˈnɛrioʊ/ /əˈnæləsəs/ the analysis of the rhetorical context of a communication situation 语境 / 情境分析

format design /ˈfɔrˌmæt/ /dɪˈzaɪn/ in technical writing, the design of such things as layout, typography, the use of colors, the use of graphics, etc.（文档的）格式设计，如页面布局、字体、颜色、图形

Good technical writing should start with the following analyses:

- Audience analysis
- Task analysis
- Scenario analysis

Audience analysis



Every communication situation has its intended audiences. Audience analysis entails the following aspects:

- **Audience demographics**—Many demographic factors of the audience will affect what information they need and how they consume the information. Consider the following demographics:

Primary audience	This is the audience your document is addressed to. It may or may not be the intended, most important audience.
Secondary audience, if applicable	Many documents often have a secondary audience, which might be a more important audience than the primary audience.
Tertiary audience, if applicable	Sometimes, your document could even have a tertiary audience, and this tertiary audience may not even be listed in your document.
Age	Information designed for a teenage audience will be very different from that designed for a middle-aged audience.
Education	Your language will be very different for people with only a high school education from that for people with advanced college education.
Economic status	This may affect what type of technology they're using, in what environment in which they're accessing information: private home office vs. public library, for example.
Gender	Males and females sometimes access information differently. Catering to their different habits would call for different information designs.
Technical background	Some audiences will have better technical backgrounds than others, which will affect your content selection, your language design, etc. Information designed for expert users will differ greatly from information designed for novices.
Occupation	Audience's occupational background is also a factor influencing information design as people in different occupations may use information in different ways and for different purposes.
Prior knowledge	Audience's prior knowledge also plays an important role in determining the amount of information, the selection of information, etc.

- **Audience needs**—Audience needs are affected by a number of factors, including but not limited to the demographic factors above. Carefully consider the following:

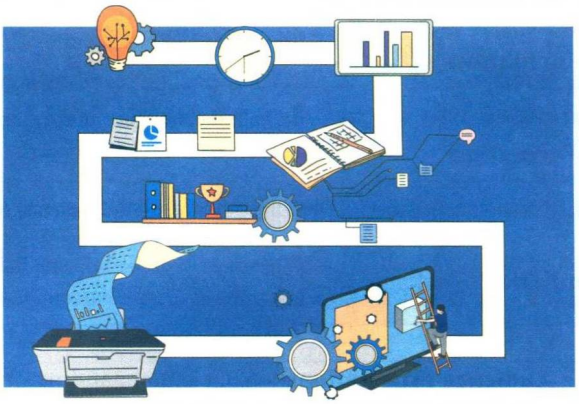
Purpose of the information	To inform? To make a sale? To explain a concept?
Intended use of the information	To help the audience make a decision? To teach them to perform a task? To educate them about a concept? To inform them about an event?
Audience's goals	What goals does the audience want to achieve with the information?
Audience's tasks	What tasks will the information help the audience to perform? Will the information enable them to perform these tasks easily?

- **Audience expectations**—Your understanding of what your audience needs may be different from what they expect. Getting these two aligned will ensure that your information is delivered effectively and persuasively. To reach this alignment, keep in mind that your audience often expects the following:

Your knowledge of who they are	You'll be surprised how much your audience expects you to know who they are, what they like, what they prefer.
Your understanding of what they need	They expect you to know their needs and therefore expect that you have designed a document that exactly meets their needs.
Appropriate information selection	You are expected to have selected just exactly the information they need.
Appealing and effective format	Your format design is expected to cater to their specific preferences.
Proper and engaging tone	Your document is expected to use an appropriate tone in addressing your audience.
Sensitivity to their cultural, ethnic, religious, and gender backgrounds	Your document design is also expected to demonstrate sensitivity to their unique backgrounds, customs, and habits.
Document's ability to help them do exactly what they need to do	Users often approach a document with a clear idea of what tasks they need to perform, and they expect your document to provide just right information for what they need to accomplish.

It's certainly impossible to cater to every user's idiosyncrasies. However, a careful analysis of your target user group is essential to the effective design and delivery of information.

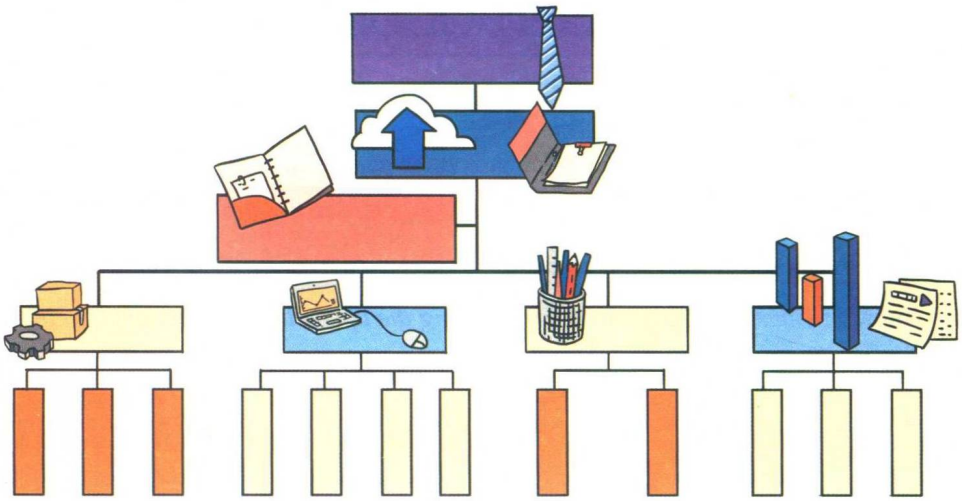
Task analysis



A key to the effective design of your information is analyzing the tasks users that will perform with your information. A task analysis can benefit most types of technical writing, but especially so for instructional materials. The purpose of a task analysis is twofold: to determine the content you'll use and to identify the order in which this content will appear. The following checklist provides a guide for performing task analysis:

Define user's needs and perspectives	This involves a careful analysis of your audience as described in the previous section. It also involves research including interviews with users about the tasks they need to perform, their perspectives on the goals of their tasks, and their perception of what's important.
Construct a list of important tasks and topics	Based on your audience analysis and research described above, determine the list of important tasks that your information design should support.
Define the priority of tasks and topics	Based on the previous step, determine what topics should receive priority so that you might end up with a primary task list and a secondary task list. This will inform your design in that your primary tasks will receive more detailed treatment.
Determine task steps	What procedural steps are required to complete the tasks? How much contextual information do you need to provide for each step?
Identify potential issues	What problems, issues, and constraints can you anticipate at each step? What solutions should you offer?
Provide help resources	If some users need more detailed information on a particular topic, task, or step, what additional resources do you need to provide?
Anticipate the environment of use	Will users be using the information in different environments? Will the different environments affect the way they access the information and perform the tasks?

Scenario analysis



In addition to audience and task analyses, you should carefully analyze all the other factors that affect your communication.

Corporate context	What type of corporation do your users work in? What is the corporate culture? Is it open and flexible or rigid and conservative? Will it affect the way the users use their information?
Technological context	What technology do your users use? Is it adequate for performing the tasks? Does it have a negative effect on information access and use?
Users' attitude	What are your users' attitude toward this information? What is their attitude toward performing the tasks?
Organizational constraints	Are there organizational factors that will hinder the use of information? Are there specific rules or policies that will limit what the users can do?
Organizational goals	Does the organization have its own goals and agenda? Is any of these goals at odds with what you have defined for the document? If so, how do you avoid such conflicts?
Cultural, religious, and ideological constraints	Are there any cultural, religious, or ideological factors that might hinder the access to the information and prevent users from performing the tasks effectively?
Language constraints	Is your information intended for an international audience? If the language for your documentation is not translated, will your users have linguistic and cognitive difficulties in understanding the information? What adjustments should be made to make information access easier?
Legal constraints	Are there local legal regulations that might call your information into question? Is your information fully compliant with legal requirements?

LANGUAGE FOCUS

- How to talk about rhetorical context ?

  Example 1: *What did John do first before starting his writing task? He analyzed the rhetorical context for the communication task.*

  Example 2: *The rhetorical context surrounding the upcoming meeting between the presidents of the two countries is extremely complex.*

- How to talk about audiences ?

  Example 1: *Even though Jill seems to be the primary and only audience for Buddy's memo, we should really consider whether there's a secondary or even tertiary audience in this case.*

  Example 2: *When designing the content, we need to consider audience's expectations.*

- How to talk about tasks ?

  Example 1: *Once we have a list of tasks the user will perform, we need to prioritize these tasks.*

  Example 2: *One of the reasons this tutorial is effective is that the writer carefully considered the type of environment in which the user will be performing the tasks.*

- How to talk about scenarios ?

  Example 1: *Performing the task at home is a whole different scenario from performing the task in an office.*

  Example 2: *Every user's scenario might be different when performing the tasks.*

GUIDELINES OR CHECKLISTS

Use the following mega checklist when analyzing any communication situation:

RHETORICAL CONTEXT ANALYSIS Checklist		
AUDIENCE ANALYSIS	Audience demographics	Primary audience
		Secondary audience, if applicable
		Tertiary audience, if applicable
		Age
		Education
		Economic status
		Gender
		Technical background
		Occupation
		Prior knowledge
	Audience needs	Purpose of the information
		Intended use of the information
		Audience's goals
		Audience's tasks
	Audience expectations	Your knowledge of who they are
		Your understanding of what they need
		Appropriate information selection
		Appealing and effective format
		Proper and engaging tone
		Sensitivity to their cultural, ethnic, religious, gender backgrounds
		Document's ability to help them do exactly what they need to do
TASK ANALYSIS	Define user's needs and perspectives	
	Construct a list of important tasks and topics	
	Define the priority of tasks and topics	
	Determine task steps	
	Identify potential issues	
	Provide help resources	
	Anticipate the environment of use	
SCENARIO ANALYSIS	Corporate context	
	Technological context	
	Users' attitude	
	Organizational constraints	
	Organizational goals	
	Cultural, religious, and ideological constraints	
	Language constraints	
	Legal constraints	

EXERCISES

1. Scenario description

Buddy McCormick is a research technician in his company's Chemical Products Division. Over the last month, he's been leading a team of technicians in working on a rather difficult project: designing mold for your company's "Instant Styrofoam" product. His boss, Jill Skelton, supervisor of the Chemical Products Division, has been aware of how the project has been progressing. One day, she asks Buddy to give her a progress report on the project. Buddy therefore sets out to write the memo.

Without much thinking, he whips up a quick memo.

Samples

Buddy McCormick, Original

Memorandum
From: Buddy McCormick
To: Jill Skelton, Supervisor
Re: Response to Your Request for a Progress Report

Over the past month, we have concentrated on designing molds for the new "Instant Styrofoam" product that is being developed by the Chemical Product Division. The work has been proceeding very slowly, and we have had several unsuccessful tests of various different molds. I hope that during the next month you can schedule us to work exclusively on this important problem. With another month's time I am sure we can come up with a good solution to the mold problem.

Note: This scenario was suggested by a sample document in Paul V. Anderson, *Technical Communication: A Reader-Centered Approach* (4th ed.), NY: Harcourt Brace Jovanovich, 1998

As Buddy attaches this memo to his email to Jill, he begins to ask himself some questions:

- Is this what she's looking for?
- Did I provide enough information?
- Does this memo put myself and my team in a good light?

As he writes up his email to Jill with this memo attached and ready to hit the send button, he begins to have second thoughts:

- Is my memo too brief?
- Is there enough information for the memo to be meaningful?
- Is some of the wording appearing to be too negative? For example, "The work has been proceeding slowly"; "we have had several unsuccessful tests…"
- What is Jill looking for?

Your task

If you were Buddy in this situation, what would you do?

Use the mega checklist for rhetorical context analysis to do a thorough assessment of the communication situation.

2. Scenario description

Buddy decides to rewrite the memo, and he comes up with the second version.

Samples

Buddy McCormick, Revision 1

Memorandum
From: Buddy McCormick
To: Jill Skelton, Supervisor
Re: Response to Your Request for a Progress Report

Over the past month, we have concentrated on designing molds for the new "Instant Styrofoam" product that is being developed by the Chemical Product Division.

We started by looking for devices that we could use to clamp our standard mold shut once these new ingredients were poured into it and began to foam up. The only appropriate devices found to clamp the standard mold and hold it closed were C-clamps (12) around the edges. Obviously, this type of clamping required considerable time for opening and closing, but a variety of quick-action- type clamping devices (all designed to take the temperatures and pressures expected) proved unsatisfactory in earlier experiments. Whereas the clamps did hold the mold closed, this resulted in some secondary damage to the molds, specifically warping of the aluminum plates. This was due to the internally generated pressure during the foaming of the panels. The pressure was maximum about 10 minutes after placing the mold into the oven. This resulted in cleaning problems with the mold and produced an unusable part.

Having determined that the aluminum could not withstand the pressure without deflection, it was decided to build a steel mold housing 1.25 cm (1/2 inch) thick steel and to bolt it together. To reduce the time required to close the mold, the list was split two-thirds and one-third, allowing two-thirds of the mold to be bolted shut prior to the adding of the foam ingredients. Once the foam ingredients were added, only about a dozen bolts needed to be inserted. Such a mold was fabricated and the first attempt at molding a part resulted in blowing the hinges off the end of the mold. Replacing the hinges and doubling up on the bolts with the hinges on, a second molding was made which actually caused a deflection of the 1.25 cm (1/2 inch) thick steel. Thus we have been unsuccessful in our efforts to design a mold that can accommodate the high pressure created during foaming by the higher density foams.

I recommend that during the next month you schedule us to work exclusively on this important problem.

This memo definitely provides more details, but he also realizes that the information is very technical. In addition, after carefully re-examining the purposes of the memo, he begins to question whether such a memo would accomplish what it's supposed to accomplish. This time, he decides to obtain a second opinion on the memo from the technical writer in his department, which is you.

Your task

After a lengthy conversation with Buddy and a careful analysis of the rhetorical situation, please give Buddy your analysis of his second memo.

3. Scenario description

With your help, Buddy comes to a chilling realization that if Jill is not happy with him, this memo could be good fodder for her to put the blame on him or even fire him. Although Buddy doesn't have evidence that this is Jill's intention, at least he shouldn't give anybody this ammunition. Buddy therefore decides to do some good research. An important piece of information that Buddy finds out is that Jill's boss, Robin Lakoff, Supervisor of Quality Control Overview, has asked Jill for a progress report. With this important information, Buddy decides to enlist your help again. With your help, Buddy's memo ends up looking like the following.

Samples

Buddy McCormick, Revision 2

Memorandum
To: Jill Skelton, Supervisor, Chemical Products Division
From: Buddy McCormick, Research Technician, Chemical Products Division
Date: November 12, 1999
Re: Progress Report—Mold Design Project, Tests 1 and 2
CC: Robin Lakoff, Supervisor, Quality Control Overview

Over the past month, we have concentrated on designing molds for the new "Instant Styrofoam" product that is being developed by the Chemical Products Division. We have so far determined that (1) bolts work better than C-clamps as mold fasteners, (2) aluminum is not satisfactory as a material for the molds, and (3) one steel mold design that we tested will not work. We are currently trying to develop another steel mold design which will accommodate the high pressure "Instant Styrofoam" creates as it cures.

This memo will acquaint you with what we have accomplished to date and what we plan to do in order to complete the project.

Work Accomplished
Test 1: Clamping Aluminum Molds
We discovered that standard C-clamps are unsatisfactory, requiring considerable time for opening and closing. We switched to the quick-action-type clamping devices, which did hold the mold closed but which resulted in damage to the molds (the pressure of the foam warped the aluminum plates). Thus, we have eliminated aluminum as a possible material for the molds. (See Appendix A for test results).

Test 2: Bolting Steel Molds
A prototype mold fastened with bolts and made of 1.25 cm cold-rolled steel plate was constructed and, after one redesign, successfully tested. The first attempt at molding a part resulted in blowing the hinges off the end of the mold. We replaced the hinges and doubled up on the bolts in making a second mold. However, curing pressure caused the plates to deflect 1.25 cm—an unacceptable deviation.

Work Remaining
Test 3: Steel Mold Design
We would like to continue testing steel molds, to determine whether thicker steel or welded brackets will best stiffen the mold to reduce deflection to within tolerances. We then need to modify the prototype and conduct tests to verify the new design.

Recommendation
Our team will complete Test #3 within two weeks if you can schedule us to work on it exclusively.

(All three versions of the Buddy McCormick memo were taken and modified from Sullivan, Porter, and Johnson-Eilola's Professional Writing Online 2.0 published by Allyn & Bacon/Longman.)

Your task

This third version of the memo is much more improved. Please read it carefully and list aspects on which it has been improved.

Chapter 4

Technical Writing Style: Brevity and Clarity

Contents

CASE 58

GLOSSARY 59

TASKS 60

- Brevity 60
- Clarity 62

GUIDELINES OR CHECKLISTS 66

EXERCISES 66

CASE

You have been working as a technical writer for a few months now. As the recognized writing expert, you are sometimes asked to help your new colleagues with their writing. Your goal is user or reader-centered prose, which is writing that directly addresses the intended audience, offering specific instructions or guidance on how to perform some specific task in a known context. This kind of writing is often called transactional writing, and good transactional writing is brief, direct, and unambiguous.

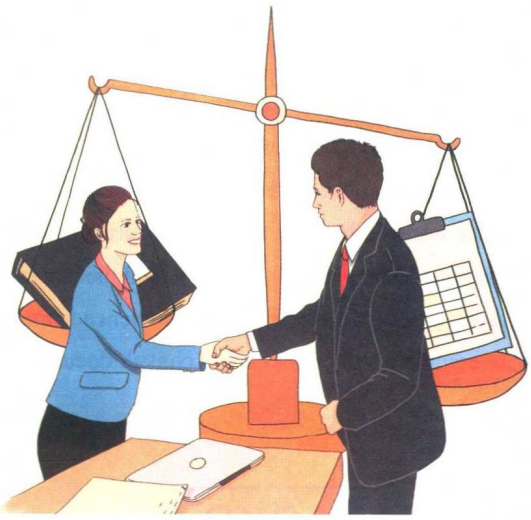
Technical and professional readers are in a hurry. They need to accomplish a specific task, and they are only reading what you've written because they can't accomplish the task without reading what you wrote. Efficient interpretation is therefore your primary goal.

EXAMPLE

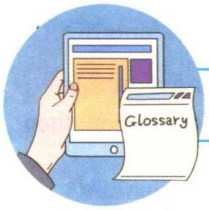
Your colleague who writes for the company blog and who has been tasked with creating a top 10 list of CSS tools sends you the following two paragraphs and asks you to edit them. Knowing your goals are always to be brief, direct, and unambiguous, you read the following several times to make sure you know what the intended audience needs from it, and then you revise accordingly.

BEFORE	The next convenient instrument included in our collection of the 10 best CSS tools and web apps for developers is Bourbon. You can quickly integrate this tool as a part of your work and make your digital life much easier with it. All in all, it's a simple and lightweight SCSS framework for Sass development to contribute to the modern web design. As for the Sass or syntactically awesome stylesheets, it is a CSS extension language directed at making it super easy for the webmaster to create advanced styles. (<a href='https://www.sktthemes.org/fyi/best-css-tools-webapps-developers/'>link</a>)
AFTER	<a href='https://www.bourbon.io/'>Bourbon:</a> a simple SCSS framework for quickly creating Sass-based modern web designs.

EXPLANATION



The example your colleague gave you is from a list, so it does not need the first sentence because the reader already knows he is reading a list. The numeral 2 says all that. The second sentence is useless: how does Bourbon make digital life easier? What is digital life anyway? Just tell us what Bourbon does and let us decide if we need it. There are only 4 sentences. You do not need to signal a conclusion. And "all in all" is not the concluding sentence anyway. To improve this chunk, rewrite the third sentence to say everything needs saying. Because your colleague gave you two paragraphs and you are sending back just one sentence, you should check before you send it that your colleague does not have a word count he or she needs to meet. Then you should make sure they understand why you suggested the changes you suggested. You need to be careful that you don't offend someone while just trying to be helpful.



GLOSSARY

brief /brif/ concise in expression; using few words. Shorter sentences are better than longer ones. Seven to ten words per sentence is a good average. Say only what the intended audience needs to get their job done. 简报（内容凝练、语句精炼，每句 7—10 个单词为宜）

direct /dəˈrɛkt/ job done is job one. Focus on the needs of the audience, assume willingness to receive instruction and desire to complete a specific task. The writing should sound businesslike, cheerful, helpful, but task-oriented rather than relationship-oriented. （文风和内容表达方式）直接

unambiguous /ˌʌnæmˈbɪgjəwəs/ not open to more than one interpretation. Each sentence should be effortlessly meaningful. Don't make your readers calculate, interpret, or have to guess.（信息传达）毫不含糊的

transactional – task oriented prose /trænˈzækʃən(ə)l/ – /tæsk/ /ˈɔriˌɛntəd/ /proʊz/

Poetry is about conspicuous artistry, about sound, affect, and structure. The audience is educated and appreciative. Prose narrative (storytelling) is about creating a scene and placing the audience in it, vicarious experience. The author is important only in so far as he or she is the storyteller. The audience wants to be entertained, transported to another world. Technical and professional writing is transactional. The author is invisible, and the author's goal is to help the audience do their job with the greatest possible efficiency. The audience is busy, trying to complete a task which they would rather complete without having to consult documentation. 以任务为导向、高效传递信息的文体

Technical writing should communicate efficiently. Generally speaking, it takes more time to read ten words than it does to read five, as long as the five words are the right ones. So when you edit, take every opportunity to reduce the number of words. Because shorter sentences can be read more quickly than long ones, consider also shortening each sentence.

Brevity

Shorten each sentence to 7 to 10 words.

If the meaning requires a complex sentence, one with coordination or subordination, then use a longer sentence. But your goal should be 7 to 10 words per sentence.

Truncate redundant expressions.

Your goal is to use the fewest possible words. If a word or phrase doesn't add to the meaning or if that meaning is already contained in another word or phrase, remove it.

a bolt of lightning — lightning (delete unnecessary adjectives)

a distance of 10 km — 10 km (distance is measured in km. No need to say both)

absolute last — last (superlatives don't take modifiers. Delete.)

added bonus — bonus (both words say the same thing. Use one)

adequate enough — adequate (both words say the same thing. Use one)

Use verbs or adjectives instead of noun phrases.

Verbosity is inefficient because a reader has to read many words to find just one idea. The phrases in the examples below use two or three words to do what the one verb or noun does on its own.

an emphasis — emphasize

appearance of — appear

in agreement with — agree

argumentation about — argument

at risk of — risk

by the repetition of — repeat

came to the realization — realized

conducted an experiment — experimented

conducted an investigation — investigated

discussion of — discuss

explorations of — explored

rate of success — success rate

without fear — fearlessly

Use word instead of phrase (description or definition) whenever the audience will understand

Original: Three hundred and sixty five degrees

Revised: A circle

Original: Boiling point of water

Revised: 100 degrees

Original: North America above the 49th parallel

Revised: Canada

Original: A disk made of vulcanized rubber used like a ball in a game played on skates

with sticks

Revised: A hockey puck

Original: High-quality learning environments are a necessary precondition for facilitation and enhancement of the ongoing learning process.

Revised: Good schools are prerequisite for learning.

Replace any general words with specific ones because they are easier to understand and remember. But be careful. Use a thesaurus to verify that the more specific word is the right one. Notice how in the warning above I used the word "careful" and then specified how to be careful by using a thesaurus. "Careful" is a general word. Using a thesaurus is a specific way of being careful. I could have revised that pair of sentences into just one – Use a thesaurus…

Delete vague words such as looks [how?], works [what kind? how well?], it [what ?], this [what?], a number [how many?], ability [what kind?], around [quantify], aspect [which one?], about [how much exactly?], area [geography or geometry?], bad [how? why?], better [than what? by how much?], help [how?], important [in what way?], increase [how much?], less [how much?], some [how many?], some people [who exactly?], and strange [in what way?]

Use concrete words instead of abstract ones whenever possible.

Sometimes when we can't think of a word, we describe the object we can't name. That's fine for a draft and if the audience doesn't know the term. A description is fine, but if the audience knows the terminology, find the right word.

Clarity

A clear sentence is one that can be interpreted in only one way. There is nothing in the words chosen or the structure used that makes a reader have to stop to think or interpret. "Clarity" is really a metaphor, one that suggests words are like windows on the world. You want your windows clean and transparent, incapable of distorting or coloring the content.

Be direct

Get right to the point. The most efficient method is to construct sentences that are in subject / verb / object order. The subject should be concrete, a person or a thing. If the subject is a concept,

and so it can't be concrete, then make sure it is specific.

Original: One of the main cons of technology integration in the classroom is cheating becomes easier via technology.

Revised: Technology in the classroom makes cheating easier.

Avoid opening a sentence with a prepositional phrase.

Efficiency is your goal. If you start with a prepositional phrase, your readers have to search for the subject of the sentence. Start with what is most important.

Original: In their plans for houses, there are brick walls that are often reinforced with stainless steel by architects because of stainless steel's resistance to the effects of the weather.

Revised: Architects often choose to reinforce brick with stainless steel because it resists corrosion.

Avoid opening a sentence with a reference to the subject of a previous sentence (this, that, as was just mentioned). Because technical and professional writing is task-oriented, repetition is better than variation for variety's sake.

Original: This problem is created by the inability for students to have a forum where they can search for and find cheaper and up-to-date textbooks.

Revised: The artificially inflated prices of used textbooks are caused by a lack of competition among resellers.

Avoid opening a sentence with "There is" or "There are" unless the existence of the subject matters more than the subject itself.

Original: There are many people who fear success because these are people who believe they do not deserve it.

Revised: Many people fear success because they believe they do not deserve it.

Original: There is a presidential appeal being made to the American people for the conservation of gasoline.

Revised: The President asks Americans to conserve gasoline.

Use active voice unless you need to use passive voice

Passive voice sentences are often harder to interpret because who is doing what to whom is unclear. Also, passive voice doesn't attribute responsibility for whatever action is taking place. Avoiding responsibility can be important in some situations and in those situations the passive

voice is appropriate.

Original: The group's failure was the result of the way the chairman decided to submit his resignation.

Revised: The group failed because the chairman resigned the way he did.

Use the verb "to be" and its conjugations only when necessary. The existence of the subject is more important than the subject itself.

Original: Effective speakers offer evidence to support the promises and assertions being made.

Revised: Effective speakers support their promises and assertions with evidence.

Original: The software is confusing.

Revised: The software confuses me. [Notice how these similar sentences mean very different things.]

Consider replacing auxiliary verbs (*such as, make, give, put, help*) with a main verb because often you will end up with a shorter, more efficient sentence.

Original: We need to make a change in the way we handle new technology when we make a decision of its incorporation.

Revised: We need to change the way we choose technological solutions.

Original: People should give law enforcement their full support.

Revised: People should fully support law enforcement.

Disambiguate

Use common words, words that have only one meaning or which can only be interpreted in one way given the context. Define technical terms before using them. Don't use synonyms, stick to the same word.

Write the full expression and place the acronym in round brackets the first time you use it. Then use the acronym.

Specify and quantify whenever possible. Instead of saying "some distance", say how far exactly. Instead of saying "many things", list as many things as a user needs to get the general idea.

Use positive rather than negative expressions

Original: Don't use the verb "to be" and its conjugations unnecessarily.

Revised: Use the verb to be and its conjugations only when necessary.

Leave no reasonable question unanswered.

Original: Something that every student has to do at least once a week is dedicating a day to do their laundry.

Revised: Students should launder their clothes weekly.

Use helpful subject headings. A subject heading can focus the reader's attention on the important details and accelerate understanding. Consider the following example:

Original:

It is a game played by two or more people with a small leather ball. The object is to keep the ball off the ground. You can use any part of your body. But you can't use your hands. Hands are forbidden, and the penalty for using them is banishment from the circle. For the best players, just keeping the ball off the ground and the game going isn't enough. They want to show off their skill, flexibility and balance.

What is "it"? It's unclear.

Revised:

Hacky Sack is a game played with a small leather ball.

If you want to explain Hacky Sack to a person who might know the game, the subject heading alone will be enough to efficiently orient the reader to the description – the reader wouldn't have to puzzle over what "it" meant, but if you know the audience will be unfamiliar with the subject, liken it to something familiar.

Revised:

A Game Like Jianzi

Whereas Jianzi is played with a heavy shuttle cock, Hacky Sack is a game played with a small, light leather ball.

Chunking – a dish is easier to remember than a shopping list

Patterns are easier to remember than items. So if you want to make a meal, for example, and you need to go shopping for the ingredients, it is easier to remember the dishes you want to make than it is the list of ingredients you need for each dish. The idea of the dish contains the list of necessary ingredients.

Similarly, **acronyms are easier to remember than phrases**.

Light amplification by simulated emission of radiation — laser.

Self-contained underwater breathing apparatus — scuba gear.

Rather than asking readers to remember a lot of little things, give them one big thing that contains each of the things they need in an easy to locate format.

GUIDELINES OR CHECKLISTS

□ Is the average sentence length between 7 and 10 words?

□ Does each sentence start with the subject? Is the subject concrete or at least specific?

□ Have you replaced all noun phrases with appropriate verbs?

□ Have you used the passive voice wisely?

□ Is each word the right word — specific and precise?

□ Have you eliminated all unnecessary words?

□ Have you answered all the questions the readers would have in the order they would need them answered in?

EXERCISES

1. Rewrite the following sentences to enhance brevity or clarity.

a. Fuel cost savings were achieved through the installation of thermal insulation.

_____

_____

b. It is of great importance to keep in mind that the term diabetes mellitus refers to a whole specific disorder.

_____

_____

c. Our team won the contract after we submitted the proposal. It was a big one.

_____

_____

d. Computer programs that produce errors consistently require regular maintenance.

_____

_____

e. There are three things that you need to remember before getting off: shut the window, lock the door, and bring your luggage.

_____

_____

2. Without naming it, describe a task that most people will be familiar with and then give it to another student to see how long it takes him or her to identify the task. Now, make the name of the task the title of the piece. See how much more quickly it communicates.
3. Lisa works in the marketing department at a home appliance company. She is writing a short pitch for the newly launched shared kitchen. Please help her revise the first draft. You may pay attention to conciseness and correctness.

On behalf of my team, it's a delight for me to introduce you the new product that is worthy of developing and promoting.

The product I would like to introduce is shared kitchens. The kitchen will be approximately one hundred and a half square meters with five complete set of cooking utensils and all kinds of electric appliances including blenders, microwaves, ovens, dishwashers and every other cooking appliances you can think of. Also, a bakery area will be provided, where people can spend a nice weekend morning here enjoying baking with friends. People will pay each time before they enter the kitchen or they can apply for a month card or year card if they will use the kitchen regularly. The price will not be much higher than their parking fee, and if they apply for a month or year card, it would be even cheaper. In this case, young people with low incomes will be willing to use the shared kitchen more frequently. Besides, we also provide cooking class with extra

charge if they want to learn to cook, which means we have two approaches to make profits. Why do we think that shared kitchens will succeed? With the rapid development of the society, many people, especially young people lead a busy life with fast pace. In this case, they don't have time to cook every day. Moreover, many of them may rent a small or mini apartment to live in. And chances are that they may not have a kitchen in their apartment. Even if they do have a kitchen, those busy young people won't purchase a complete set of cooking utensils because it's unnecessary for people who don't cook very often to spend so much money on cooking utensils or electric appliances. But what if they want to enjoy the fun of cooking once in a while? A shared kitchen in the public area of the apartment would be a perfect solution.

Compared with other shared products, shared kitchens are more of a positive life attitude. In the shared kitchens, people can slow down a little bit to enjoy their lives. And that will certainly attract people who are eager to find an outlet in their busy life. This is why shared kitchens will prevail in similar products. I believe shared kitchens will be a dark horse in the market and it will be worthwhile to be invested in.

Chapter 5

Communicating through Visual Elements

Contents

CASE 70

GLOSSARY 78

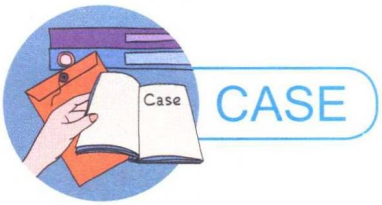
TASKS 79

- Tables, charts, and graphs 79
- Infographics 87
- Mind Maps 100

LANGUAGE FOCUS 101

GUIDELINES OR CHECKLISTS 102

EXERCISES 103



Context

You're a new graduate instructor in English at your university and will be teaching English 1101, English Composition I, for the first time. With the COVID-19 pandemic situation, your composition class will be fully online, with no face-to-face meetings.

Your Task

Before semester starts, you're to design a syllabus and put it online. You have the option to design a traditional syllabus, as in Figure 1.

ENGLISH 1101, ENGLISH COMPOSITION I SYLLABUS

Course Texts

1. Singer, Marti, & Minardi, Cara. (Eds.). (2008). *First Essays: A Peer Approach to Freshman composition* Plymouth, Michigan: Hayden McNeil.
2. Lunsford, Andrea. (2005). *The Everyday Writer, 3rd Edition (Georgia State University Edition).* Boston: Bedford St. Martin's.

Course Goals

This course is designed to increase the student's ability to construct written prose of various kinds. It focuses on methods of organization, analysis, research skills, and the production of short expository essays; readings consider issues of contemporary social and cultural concern. A passing grade is C.
By the end of the course, you are expected to be able to

- ☐ Engage in writing as a process, including various invention heuristics (brainstorming, for example), gathering evidence, considering audience, drafting, revising, editing, and proofreading,
- ☐ Engage in the collaborative, social aspects of writing, and use writing as a tool for learning,
- ☐ Use language to explore and analyze contemporary multicultural, global, and international questions,
- ☐ Demonstrate how to use writing aids, such as handbooks, dictionaries, online aids, and tutors,
- ☐ Gather, summarize, synthesize, and explain information from various sources,
- ☐ Use grammatical, stylistic, and mechanical formats and conventions appropriate for a variety of audiences,
- ☐ Critique your own and others' work in written and oral formats,
- ☐ Produce coherent, organized, readable prose for a variety of rhetorical situations, and
- ☐ Reflect on what contributed to your writing process and evaluate your own work.

However, you also realize that this generation of college students are a visually-oriented generation, more so than any of the previous generations. In addition, the online delivery mode of the class also demands that whatever you design should be visually appealing and

engaging. So, you're thinking: how can I design a non-traditional syllabus that incorporates more visual elements?

A Sample Infographic Syllabus

Danielle Garner, a PhD student in Rhetoric and Composition and a graduate instructor in the composition program, uses a unique and effective approach: she designed an infographic syllabus.

Danielle Garner's Infographic Syllabus Part 1
(Source: https://create.piktochart.com/output/48350531-1101-194-syllabus-final; used with permission from Danielle Garner)

COMMUNICATION

Communication is important, especially with a mainly online class!

Below are a few things to keep in mind when contacting me.

1. **Only email dgarner18@gsu.edu and only use your student email to contact me!** This is GSU policy. I will not respond if you aren't using the proper email addresses.

2. Do not message me through iCollege. I'm horrendous at checking those, and I don't want to miss you reaching out.

3. Schedule a virtual meeting through WebEx! Oftentimes, speaking with me face-to-face can really help clarify issues. Based off of past classes, students that stay in contact with me and reach out when they need help often do well in my course.

4. Also, since I will only be seeing you guys twice a month, I would love to see your faces! So again, schedule a virtual meeting!

5. You can refer to me as Ms. Garner or Ms. G, whichever you prefer! Just not "Yo, Teach!" or "Hey, You!"

6. When emailing me, always ask some type of question if you would like a response. If there is no question, I will just assume you are telling me something that requires no response. I receive a lot of emails each day, so I need some way of knowing what I need to respond to.

7. I rarely check my emails on weekends, so if you don't receive a response, don't worry. I will get to the following Monday. We all need some type of break.

8. I'm usually really quick to reply to emails, so expect some type of response within 24 hours. However, my response to your question may be something that I believe the entire class needs to know, so you may not get an individual response.

9. My main mode of communication is email and iCollege Announcements. So, check your emails DAILY! I have my emails come directly to my phone. That is the BEST way to stay updated with any of your courses.

10. I have an "open door" policy, which means you can always come to me with questions. I will gladly answer them to the best of my ability.

STUDENT ACCOMMODATIONS

Students who wish to request accommodation may do so by contacting the Access and Accommodations Center. Information specific to matters related to Covid can be found on their homepage. Georgia State University complies with Section 504 of the Rehabilitation Act and the Americans with Disabilities Act. Students may only be accommodated upon issuance of a formal Accommodation Plan and are responsible for providing a copy of that plan to instructors of all classes in which an accommodation is sought. The starting point for getting a plan in place is the Eligibility Verification Form. Contact the Access and Accommodations staff for more information.

Click here for Access & Accommodations Center

Please schedule an individual appointment with me so that we may discuss any accommodations you need in our class and together come up with a plan for your success. To respect your privacy, we will not discuss these accommodations in class discussions or in collaborative group settings.

Click here for Eligibility Verification Form

INSTRUCTOR EVALUATION

Your constructive assessment of this course plays an indispensable role in shaping education at Georgia State. Upon completing the course, please take time to fill out the online course evaluation. Our student evaluation form also offers the opportunity for you to reflect on your own course performance and educational goals.

ENGLISH MAJORS PORTFOLIOS

The English department at GSU requires an exit portfolio of all students graduating with a degree in English. Ideally, students should work on this every semester, selecting 1-2 papers from each course in the major and revising them, with direction from faculty members. The portfolio includes revised work and a reflective essay about what you've learned.
Each concentration (literature, creative writing, rhetoric/composition, and secondary education) within the major has specific items to place in the portfolio, so be sure to download the packet from the English department website.

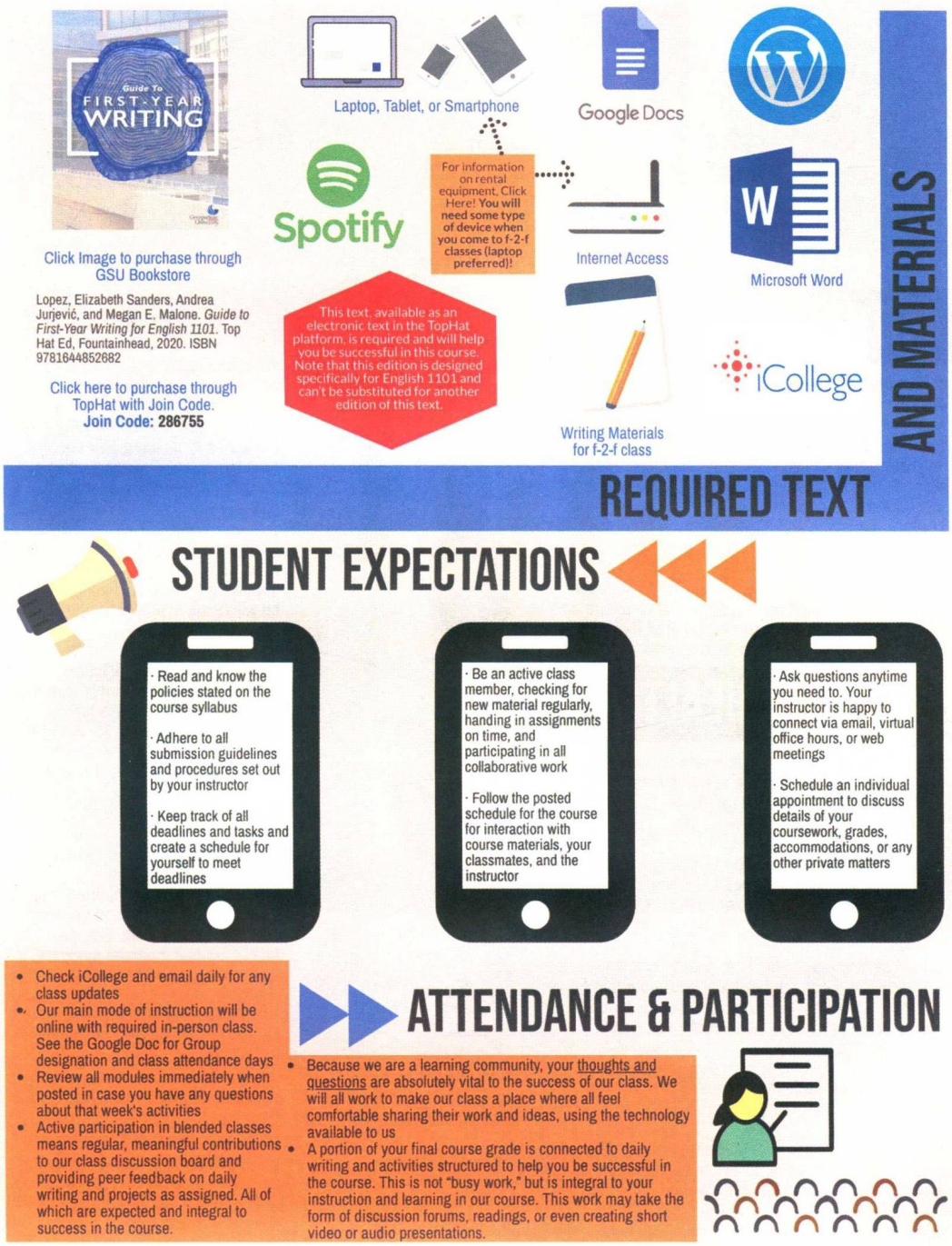
The Senior Portfolio is due at the midpoint of the semester you intend to graduate. Please check the university's academic calendar for that date. Please direct questions about your portfolio to the instructor of your senior seminar or to Dr. Mark Noble, Director of Undergraduate Studies.

I cannot stress this enough, but...

EMAIL ME IF YOU HAVE QUESTIONS ABOUT ANYTHING!

I won't know if you're confused if you don't tell me. There are no stupid questions. And if you are confused, I can almost 100% guarantee you someone else is confused as well.

Danielle Garner's Infographic Syllabus Part 2
(Source: https://create.piktochart.com/output/48350531-1101-194-syllabus-final; used with permission from Danielle Garner)



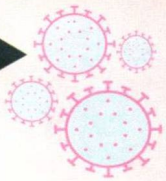
Danielle Garner's Infographic Syllabus Part 3
(Source: https://create.piktochart.com/output/48350531-1101-194-syllabus-final; used with permission from Danielle Garner)

BE HERE!
BE PRESENT!
ALWAYS ASK QUESTIONS!
RESPOND TO OTHERS!
CHECK FOR UPDATES!

Students are expected to attend their assigned in-person class sessions (see iCollege communication about your assigned group and time/day). Students may not attend a class session they are not assigned to attend. On the first day of in-person class, students should sit only in seats indicated by a blue GSU "sit here" label. Instructors will then create a seating chart. Students should sit in their assigned seats for each in-person class session. If a student becomes ill, the seating chart will help identify those who may have been in close contact.

Students who are unable to attend classes in-person should work with their academic advisers to build a schedule of fully online classes. Students who need accommodations for a disability should contact the Access and Accommodations Center at https://access.gsu.edu/. Additional information about accommodations ay be found below.

STUDENT ILLNESS



If a student develops a fever, cough or shortness of breath they should stay at home, not go to class or work, and stay away from other people. If a student becomes sick or is required to quarantine during the semester, they should notify their instructor as soon as possible. The student will work with the instructor to develop a plan to complete the necessary course content, activities, and assessments in order to meet the course student learning outcomes.

Students in residence halls who report an infection will be asked to return home. For those unable to do so, GSU will provide a sequestered area that will allow residential students to isolate while infected.

MENTAL HEALTH

As your instructor, your mental health is one of my number one priorities. We are in trying times currently, which is a lot for anyone! But just know, **I AM HERE FOR YOU!**

Click icon for Counseling Services page

If you ever need to vent, or you're feeling anxious, overwhelmed, confused, or you need clarification, or just need to talk to someone...anything... **I AM HERE FOR YOU!**

I am not here to judge you; I am here to help you be the best student you can be. I can just be a sounding board if you need me to be. I can offer advice if you need it. Or, I can clarify an assignment. Just know... **I AM HERE FOR YOU!**

If you need to talk, schedule a face-to-face WebEx meeting during my office hours or shoot me an email.

Click icon for Dean of Students Student Advocacy page

All I want is for you to come to me if you are struggling mentally, emotionally, physically, or academically. We can see what we can do. If you aren't comfortable with coming to me, you can contact Counseling Services or Dean of Students Student Advocacy.

MISSED AND LATE WORK

- **All major** assignments must be completed to pass the course.
- Discussions, Homework, & Quizzes will be 25% of your grade and are time sensitive. These activities **cannot** be submitted past the due date.
- Major assignments must be turned in on time with **ALL** directions for submission followed. Failing to do so will result in a zero for the assignment.
- You will have up to **FIVE days** to submit major assignments after the due date. After five days the assignment will close. **HOWEVER, each day an assignment is turned in after the due day will result in 5 points off of your final grade each day the assignment is late.**
- With all that being said, I know we are in trying times, and I acknowledge that something may come up that will prevent you from completing your work. But, you MUST contact me to let me know. If you aren't turning your work in and you have failed to get in contact with me to work something out, I will assume you're just not doing your work. It is imperative, especially with an online class, to keep me in the loop. I don't need full details, but I do need to know if something has changed in your life that will prevent you from completing your work.
- There are resources for you out that and I am here to help!

Danielle Garner's Infographic Syllabus Part 4
(Source: https://create.piktochart.com/output/48350531-1101-194-syllabus-final; used with permission from Danielle Garner)

KEY ASSIGNMENTS

Essay One

MUSIC NARRATIVE

Students will write a narrative style essay explaining "what music means to them".

Essay Two

SONG ANALYSIS

Using rhetorical strategies, students will pick a song and rhetorically analyze its lyrics.

Essay Three

ANNOTATED PLAYLIST

Selecting a social issue theme, students will build a playlist and annotated each song to show how the playlist represents the social theme.

Essay Four

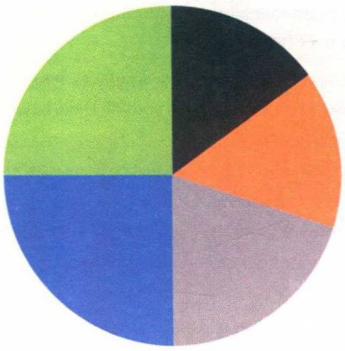
MUSIC ARGUMENT

Selecting a music themed topic, students will employ rhetorical strategies and research to develop an argumentative essay.

Superior	Satisfactory	Needs Improvement	Failing
100-98 = A+	89-88 = B+	79-78 = C+	69-60 = D
97-93 = A	87-83 = B	77-70 = C	Below 60 = F
92-90 = A-	82-80 = B-		

GRADING SCALE

Grading Breakdown



Essay 1 (15%) Essay 2 (15%) Essay 3 (20%)
Essay 4 (25%) Quizzes, Discussion, and Homework (25%)

Danielle Garner's Infographic Syllabus Part 5
(Source: https://create.piktochart.com/output/48350531-1101-194-syllabus-final; used with permission from Danielle Garner)

ESSAY SUBMISSION

- Essays will be written in blog form, but you must copy & paste your text from the blog and put it into a Word Doc to upload to Turnitin.com. You can put in a Google Doc and download it as a Word Doc or PDF. But, it HAS to be a Word Doc or PDF because Turninit.com only accepts those forms.
- All essays must be written in MLA format, which means you will use MLA in-text citations and an MLA Works Cited page. In your blogs, you can link to your sources on top of proper citations.
- We will have activities where you put your essays into full proper MLA formatting so you will know how for ENGL 1102.
- Specific submission guidelines will be given with each assignment you receive.
- More information about submission requirements and processes will be uploaded to the iCollege.

INCOMPLETES

In order to receive an incomplete, a student must inform the instructor, either in person or in writing, of his/her inability to complete the requirements of the course. A grade of incomplete will only be considered for students who meet the following three conditions:

- passing the course with a C or better
- present a legitimate, non-academic reason to the instructor (documentation is required)
- have only one major assignment left to finish.

Assignment of incompletes and the terms for removal of the "I" will be set at the instructor's discretion in consultation with the Director or Associate Director of Lower Division Studies and in accordance with university policies.

PLAGIARISM

WHAT IS IT?

Georgia State University defines plagiarism as . . .
" . . . any paraphrasing or summarizing of the works of another person without acknowledgment, including the submitting of another student's work as one's own . . . [It] frequently involves a failure to acknowledge in the text . . . the quotation of paragraphs, sentences, or even phrases written by someone else." At GSU, "the student is responsible for understanding the legitimate use of sources . . . and the consequences of violating this responsibility."

ACADEMIC HONESTY

You should familiarize yourself with Georgia State's Policy on Academic Honesty. Click icon for more information.

This policy refers to every piece of writing you do for class, including drafts, reading responses, discussion posts, and finished essays. In addition, students are required to be honest in their academic work by writing their own papers. Handing in papers you receive from someone else or allowing someone else to heavily edit or write work for you constitutes an academic honesty violation. In addition, using your OWN work from previous courses or other current courses (from any course at any school whether high school or college) is also a violation of the academic honesty code.

WHAT HAPPENS?

Any work that is turned in to this class that is plagiarized or violates the university academic honesty policy will receive an automatic 0 for the assignment grade and must be referred to the College of Arts and Sciences for further review and potential disciplinary action.

HOW TO AVOID?

If you are ever unsure what may or may not be plagiarism, please do not hesitate to ask me. In fact, I welcome your questions.

Follow ALL MLA citation guidelines I post in iCollege. You can also visit Purdue Owl's MLA Guide. They give a full break down of the newest edition of MLA. But, when in doubt, always quote and use in-text citations and a Works Cited page!

However, we will also be using Turnitin.com to check for likeness. If you turn in your work early enough, you can receive your score back and make any corrections before the deadline.

Danielle Garner's Infographic Syllabus Part 6
(Source: https://create.piktochart.com/output/48350531-1101-194-syllabus-final; used with permission from Danielle Garner)

FACE MASKS! THEY'RE ALL THE RAGE

Click icon for GSU face covering policy

Georgia State University and the University System of Georgia have mandated a face covering policy. Students are required to wear an appropriate face covering while inside campus facilities (classrooms, hallways, elevators, labs and in all other public spaces) because six feet of social distancing may not always be possible. Face coverings will be worn in addition to and not as a substitute for social distancing. Face coverings aren't required in one's own dorm room or suite, when alone in an enclosed office or study room, or in campus outdoor settings where social distancing requirements are met.

I will be wearing my face mask in class this semester, and you are required to wear yours. I know that face masks may make some aspects of class more difficult. It will be harder for us all to project our voices and read each other's facial expressions. However, I am willing to sacrifice these elements since wearing a mask is one thing I can control to support the health and safety of our community. This is a new situation for all of us and if we start the semester off from a place of mutual understanding it will be easier for us all to get through this together. Be aware that wearing face mask is required by GSU and there is a penalty if you choose to not wear a mask. Our university community has a strong tradition of upholding the value of mutual respect; we, therefore, ask students to not engage in behavior that would be disruptive to class regarding this policy.

Anyone not using a face covering when required will be asked to wear one or leave the area. Repeated refusal to comply with the requirement may result in discipline through the applicable conduct code for students. Reasonable accommodations may be made for those who are unable to wear a face covering for documented health reasons. To request an accommodation, start with the Access & Accommodations Center Welcome Form found at How to Connect.

When you wear a face covering, you're protecting yourself, but equally important, you're protecting other members of the university community. You're showing you're taking responsibility for the welfare of those around you.

WRITING STUDIO

GEORGIA STATE

The Writing Studio's mission is to support you in your writing for our course and beyond, as noted below,
"...to enhance undergraduate and graduate student writing by encouraging all writers to participate in regular conversation about the writing process and their academic work. We believe that talking about ideas and the art of writing with knowledgeable readers creates the ideal learning environment for practicing personal expression, persuasion, and critical thinking, all of which are vital to succeeding in the arts of academic and professional writing and communication. We support a community where writers, readers, and teachers all learn from each other, by responding to each others' texts with engaged conversation."

This service is free and a valuable resource for all writers, and I strongly encourage you to take advantage of this space.

Click Panther to Register & Sign-up for an appointment

This syllabus reflects a plan for the course. Changes to this plan may become necessary as the semester progresses. Major updates will be provided in writing by your instructor. Students are responsible for taking note of any changes that may occur.

Danielle Garner's Infographic Syllabus Part 7
(Source: https://create.piktochart.com/output/48350531-1101-194-syllabus-final; used with permission from Danielle Garner)

Garner's infographic syllabus is effective in several aspects:

- It does a good job incorporating appealing visual elements into an otherwise text-heavy document.
- There's a good variety of visual elements, including icons, graphics, photos, charts, well formatted headings, etc.
- The visual elements, such as headings formatted in arrows, provide a good reading order.
- It uses the proximity rule well and divides the syllabus into distinctive yet connected groups/sections.
- Visuals are used not at the cost of information. Although visuals take up a lot of space, the syllabus is still as informative as a traditional syllabus.
- It varies the format of different elements, such as background, typography, headings, and yet maintains good consistency throughout the document.

Such an infographic syllabus would no doubt catch students' attention and would help students' information retention.

visual /ˈvɪʒəwəl/ any element in a document that's non-textual（文档中的）视觉元素

table /ˈteɪbəl/ an arrangement of data and text in columns and rows to show relationships and comparisons 表格

graph /græf/ a diagram that displays connections or interrelations using lines, columns, or bars 图表

chart /ʧɑrt/ a graphic representation of information to show relationships; often used interchangeably with the term "graph" 图表（与 graph 基本指代相同）

column graph /ˈkɑləm/ /græf/ a graphic representation of data in columns, often for comparison purposes 柱状图

bar graph /bɑr/ /græf/ a graphic representation of data in bars, often for comparison purposes 条状图、长条图

line graph /laɪn/ /græf/ a graphic representation of data in lines, often to depict trends and changes over a period of time 折线图

pie chart /paɪ/ /ʧɑrt/ a graphic representation of data in a pie, often to show the relative percentages of parts to the whole 饼图

infographic /ˌɪnfəˈgrafɪk/ a graphic representation of information, often a combination of visuals and text 信息图（一种既有文字也有视觉元素的图）

mind map /maɪnd/ /mæp/ a brainstorming and planning tool that helps you put the ideas in your mind on paper 思维导图

Visual elements have become a staple in our communication today as they are very effective tools in presenting information. Visuals have useful functions in technical writing:

- They help emphasize the important information.
- They sometimes act as the focal point of the page.
- They help readers remember the important information.
- They help to interpret data more easily.
- They help to explain a process or procedure.
- They help to orient the reader to the actions they need to take.

Visuals should be used whenever you think they help to make things clearer. This chapter discusses the following major types of visual elements:

- Tables, charts, and graphs
- Infographics
- Mind maps

Tables, charts, and graphs

This section focuses on the most common types of visuals: tables, charts, and graphs.

Tables

Tables present data and other information in rows and columns for easy comparison, as in table 1.

TABLE 1. CAR SALES (AUGUST 1-31, 2020)

	Ford	Toyota	Honda	Chevy
SEDANS	111	234	36	29
SUVS	47	31	24	33
PICKUPS	25	37	12	159

Tables are also a good tool to present detailed information in a number of categories. Sometimes, tables can present a large amount of numerical data and save a lot of space compared with prose descriptions. The table below presents the results about age and sex of the 2019 U.S. census survey:

Table 1. Population by Age and Sex: 2019

(Numbers in thousands. Civilian noninstitutionalized population.1)

Age	Both sexes		Male		Female	
	Number	Percent	Number	Percent	Number	Percent
All ages	324,356	100.0	159,028	100.0	165,328	100.0
.Under 5 years	19,736	6.1	10,094	6.3	9,642	5.8
.5 to 9 years	20,212	6.2	10,328	6.5	9,884	6.0
.10 to 14 years	20,827	6.4	10,650	6.7	10,177	6.2
.15 to 19 years	20,849	6.4	10,545	6.6	10,304	6.2
.20 to 24 years	21,254	6.6	10,716	6.7	10,538	6.4
.25 to 29 years	23,277	7.2	11,792	7.4	11,485	6.9
.30 to 34 years	21,932	6.8	10,935	6.9	10,997	6.7
.35 to 39 years	21,443	6.6	10,629	6.7	10,814	6.5
.40 to 44 years	19,584	6.0	9,628	6.1	9,956	6.0
.45 to 49 years	20,345	6.3	9,993	6.3	10,351	6.3
.50 to 54 years	20,355	6.3	9,930	6.2	10,425	6.3
.55 to 59 years	21,163	6.5	10,046	6.3	11,117	6.7
.60 to 64 years	20,592	6.3	9,819	6.2	10,773	6.5
.65 to 69 years	17,356	5.4	8,198	5.2	9,158	5.5

.70 to 74 years	14,131	4.4	6,691	4.2	7,440	4.5
.75 to 79 years	9,357	2.9	4,233	2.7	5,124	3.1
.80 to 84 years	6,050	1.9	2,519	1.6	3,532	2.1
.85 years and over	5,893	1.8	2,282	1.4	3,611	2.2
.Under 15 years	60,774	18.7	31,072	19.5	29,703	18.0
.15 to 17 years	13,018	4.0	6,656	4.2	6,363	3.8
.18 to 20 years	11,851	3.7	5,931	3.7	5,920	3.6
.21 to 44 years	103,469	31.9	51,658	32.5	51,811	31.3
.45 to 64 years	82,455	25.4	39,789	25.0	42,666	25.8
.65 years and over	52,788	16.3	23,923	15.0	28,865	17.5
Median age	38.3	(X)	37.1	(X)	39.5	(X)

[1]Plus armed forces living off post or with their families on post.
Note: Details may not sum to totals because of rounding.
The U.S. Census Bureau reviewed this data product for unauthorized disclosure of confidential information and approved the disclosure avoidance practices applied to this release. CBDRB-FY20-027.
(SOURCE: U.S. Census Bureau, Current Population Survey, Annual Social and Economic Supplement, 2019. https://www.census.gov/data/tables/2019/demo/age-and-sex/2019-age-sex-composition.html. Internet release date: April 2020)

If we were to present all the data in this table in textual format, it would probably take a couple of pages, and it would be very difficult for the reader to consume the information and to extract all the data from the prose description.

A table has the following elements:

Table number	All tables in one document should be numbered consecutively, e.g., Table 10.1.
Table caption	This will be the title of the table and should appear on top of the table.
Row heads	These are the category names in the first column.
Column heads	These are the cross category names in the first row.
Data	These will be the information in the cells, and table data can either be numerical or textual.

In presenting data in a table, follow the following rules:

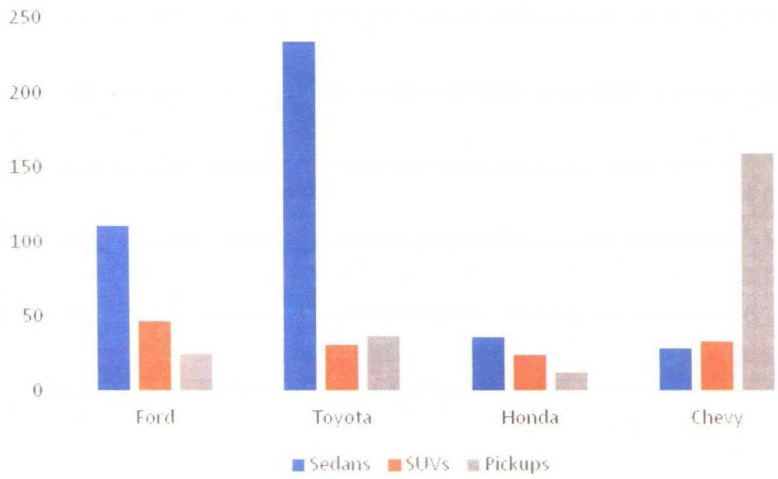
- Number all tables in their order of appearance in a document, e.g., "Table 1."
- Avoid using overly complicated data.
- Provide a label for each column (e.g., Ford, Toyota) and each row (e.g., SEDANS, SUVS).

- Align numbers without decimals on the right to better show differences.
- Align numbers with decimals on the decimals.
- Specify units of measurement and use standard units whenever possible.
- Put data to be compared in columns next to one another.
- Use columns instead of rows for comparison.
- Avoid using fractions. Convert them into decimals.
- Present items in a logical order: alphabetical, chronological, increasing value, decreasing value, etc.
- Present the entire table on one page whenever possible. If you have to use two pages, write "Continues on next page" at the bottom of the first page and use the full title and "Continued" on top of the next page.

Graphs

Graphs present information in shapes and patterns. There're three different kinds of graphs: column graph, bar graph, and line graph.

Column Graphs

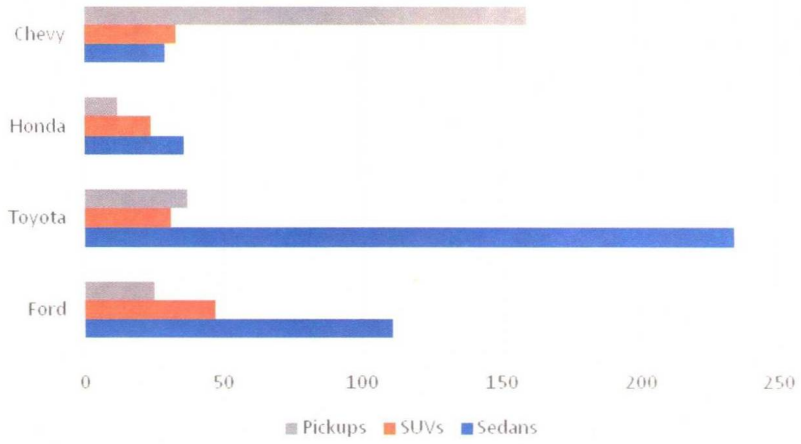


Column graphs show comparisons. Here's a sample column graph.

What the column chart does well is to show the comparison between different categories, in this instance, of vehicles: sedans, SUVs, and pickups. You can also compare the same car

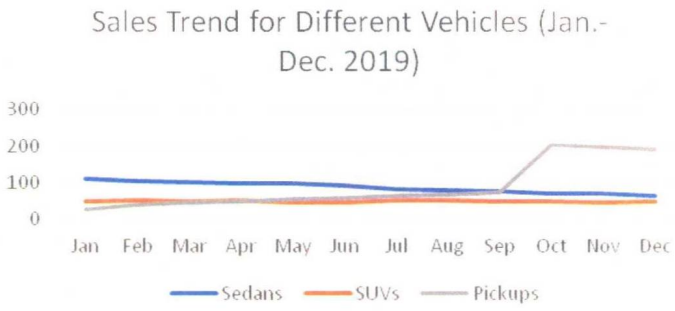
category (e.g., sedans) across the four manufacturers: Ford, Toyota, Honda, and Chevy.

Bar Graphs



A bar graph is very similar to a column graph in its function (see the example below).

Line Graphs



A line graph often expresses a trend over a period of time (see the example below).

This line graph shows three different trends in vehicle sales. While SUV sales have roughly held steady, sedan sales have demonstrated a declining trend. Pickup sales, on the other hand, have shown an increasing trend, with a sudden spike in the month of October.

As you can see from this sample, line graphs are good at showing trends or development over a period of time, but they are not good at showing accurate values. For example, the January sales of SUVs (the orange line) is a little below 50, but there's no telling whether the exact figure is 49, 48, 47 or something else.

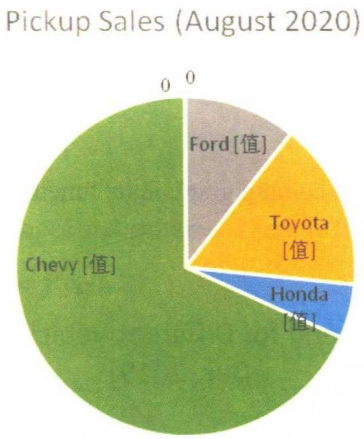
Charts

As mentioned earlier, the term "chart" is often used interchangeably with "graph." They both show relationships, but they differ in that a graph displays interrelations on an x-y coordinate system while charts use other forms.

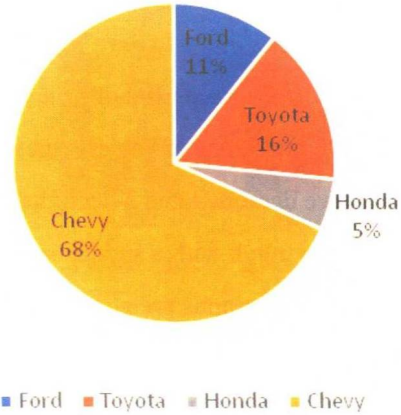
Pie Charts

A pie chart shows relationships through comparison of each item's relative percentage to the whole.

A pie chart can have labels directly on the pie and show direct values as well (see the example below):

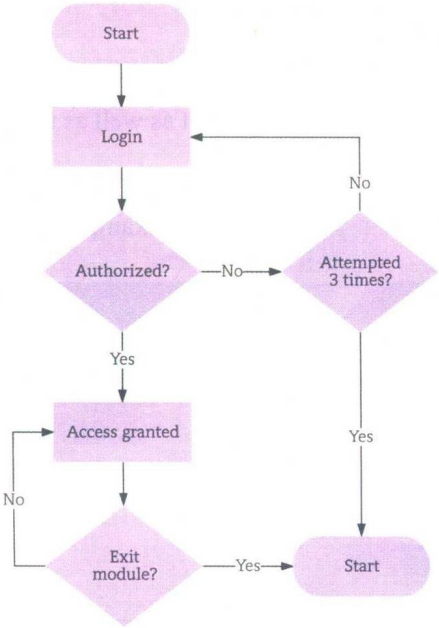


A pie chart may also use legends (often using colors or patterns) instead of labels and show percentages instead of values (see the example below).



Flow Charts

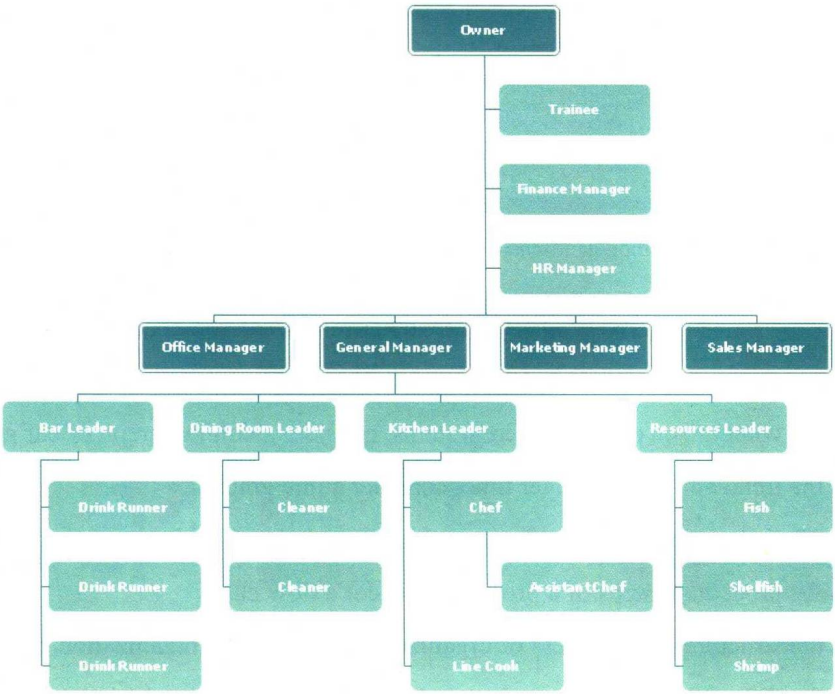
A flow chart describes a procedure or process (see the example below).



Source: https://www.lucidchart.com/pages/templates/flowchart/system-flowchart-template

Organization Charts

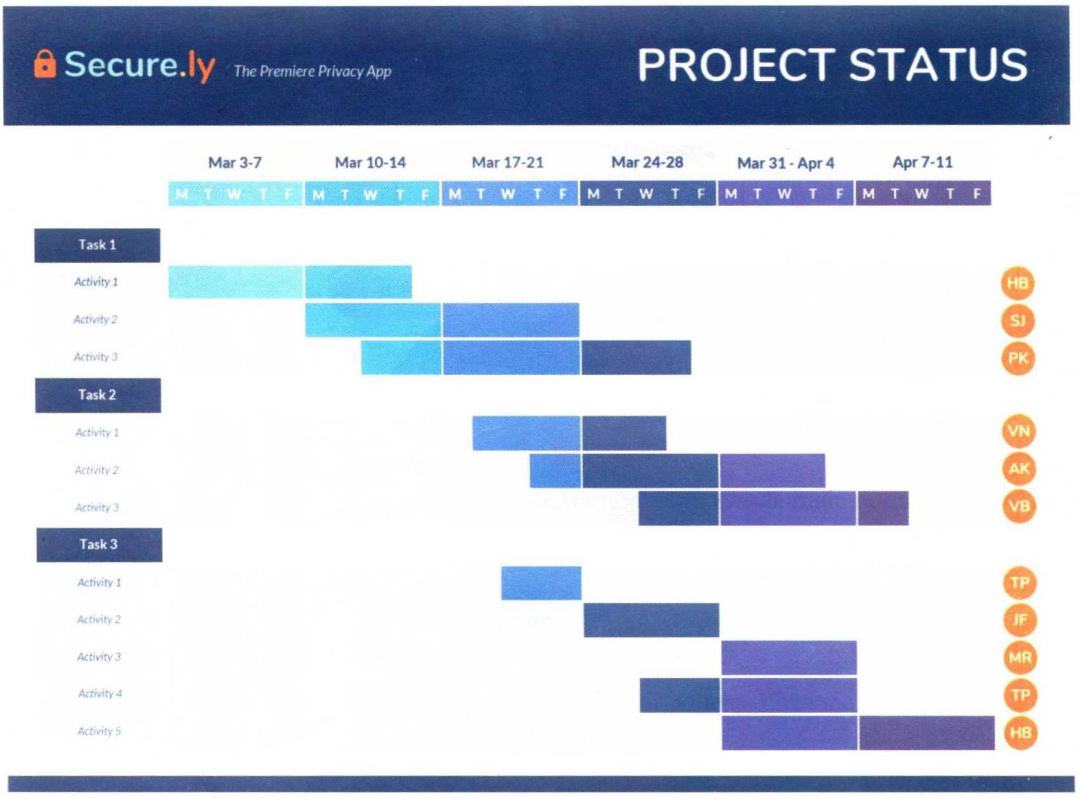
An organization chart shows the hierarchical relationships among different offices or positions (see the example below).



(Source: https://www.edrawsoft.com/template-seafood-restaurant-org-chart.html)

Gannt Charts

A Gannt chart, named after engineer H. L. Gannt, is typically used as a tool for project planning. It shows the different phases of a project as well as the start and end dates of each phase. A Gannt chart allows you to see all the major phases and tasks at a glance, and you can set the order of tasks based on your priority (see the example below).



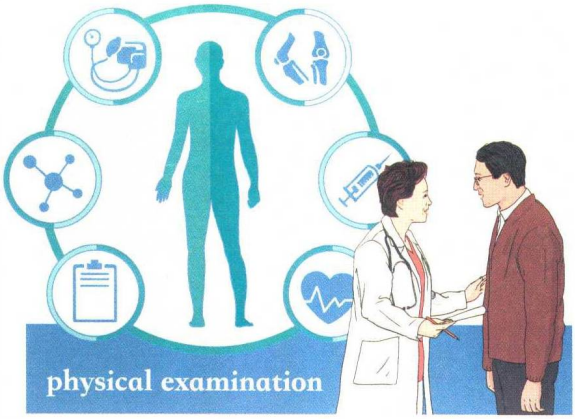
(Source: https://venngage.com/blog/gantt-chart-example/#2)

Before deciding what graph or chart to use, determine what you need to emphasize:

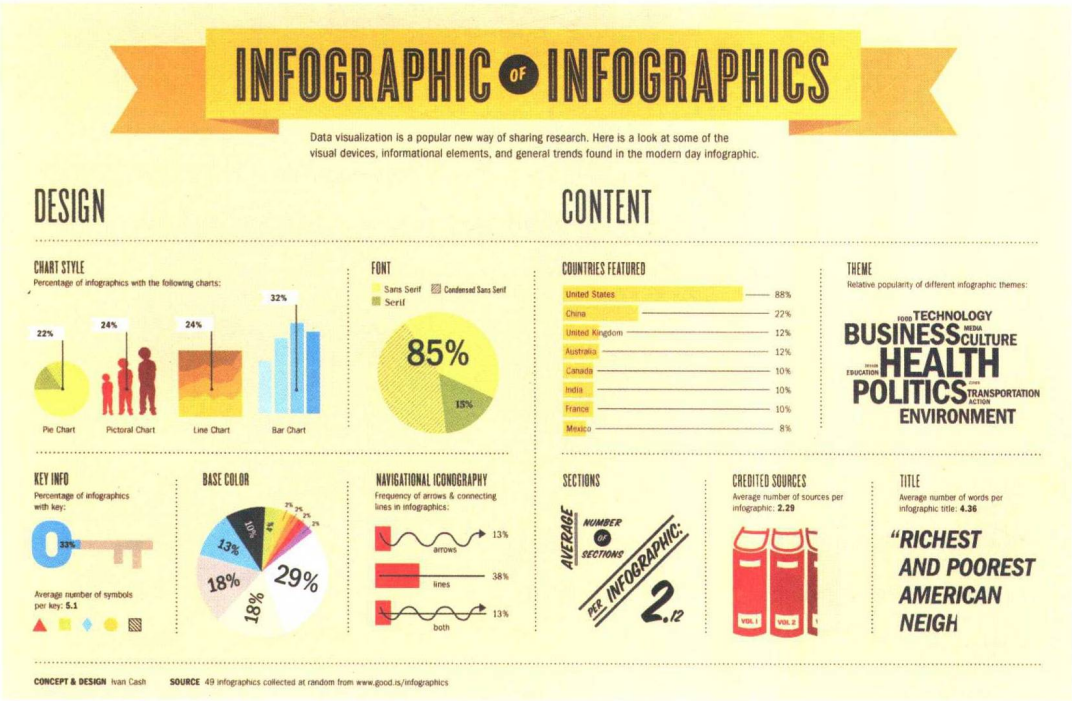
- If it's accurate values and complex data, consider a table.
- If it's the comparison among different items, consider a column graph or bar graph.
- If it's the trend and changes over time, consider a line graph.
- If it's relative percentage of different parts to the whole, consider a pie chart.
- If it's the procedural steps of a process, consider a flow chart.
- If it's the structure of a business or organization, consider an organization chart.
- If it's the different phases of a project and the respective time each phase takes, consider a Gannt chart.

Infographics

An infographic, as the name suggests, is a graphic representation of data or information. More specifically, an infographic is a combination of graphics and minimal text that explains a concept, idea, topic, story, etc. in a visually engaging and appealing way that prose text often can't do.



Take a look, for example, at the famous infographic of infographics designed by Ivan Cash in the figure below.



(Source: http://www.ivan.cash/infographic-of-infographics/)

This infographic is a summary of information from 49 infographics that cover a wide range of topics, such as health, geography, tax, family, politics, food, diseases, and transportation (see the figure below). Imagine how many pages it would take if you were to summarize all this information in prose format.

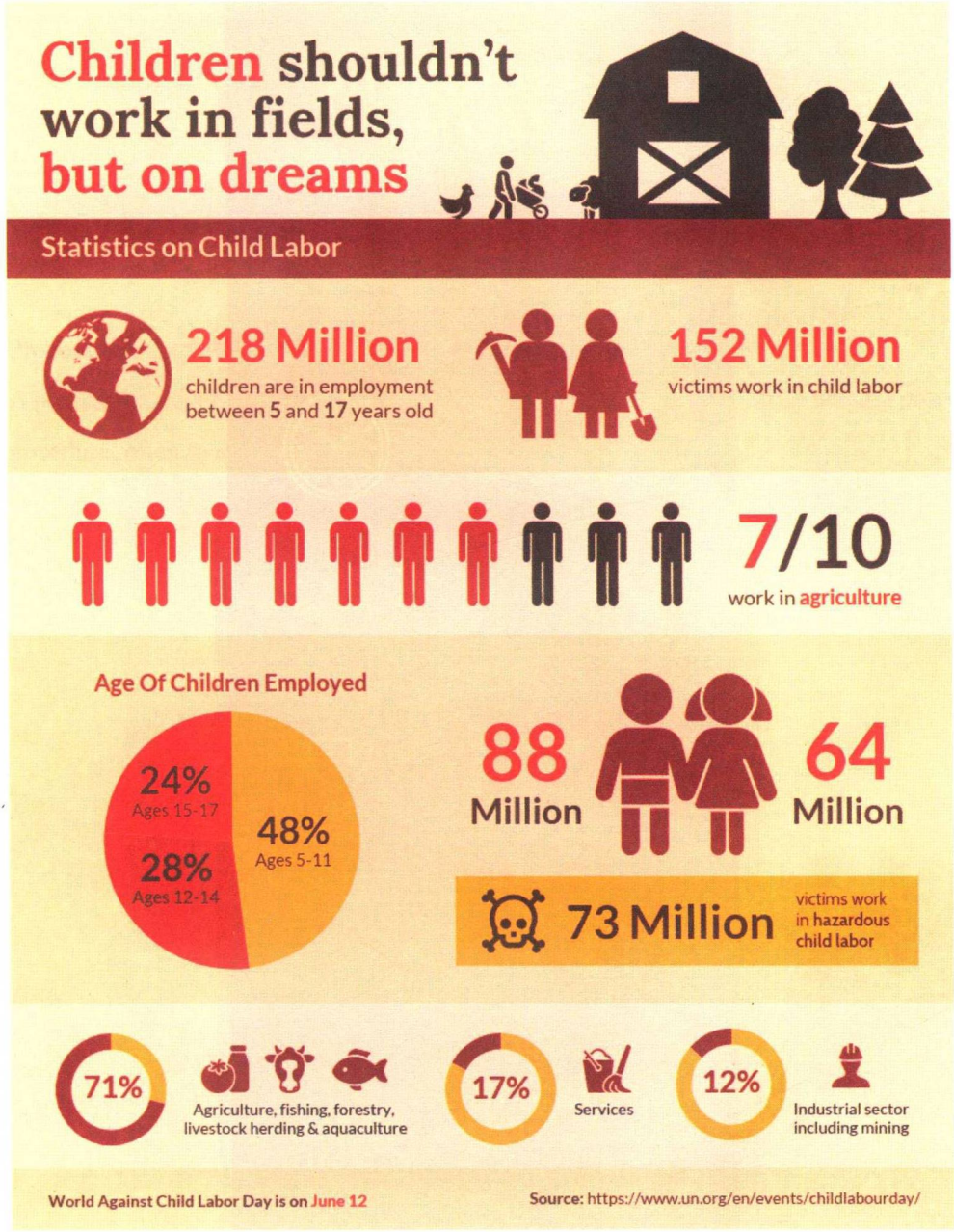
(Source: http://www.ivan.cash/infographic-of-infographics/)

Venngage's website identifies nine types of infographics, each of which visualizes a particular type of content:

- Statistical infographics
- Informational infographics
- Timeline infographics
- Process infographics
- Geographic infographics
- Comparison infographics
- Hierarchical infographics
- List infographics
- Résumé infographics

Statistical Infographics

A statistical infographic visualizes statistical information. Often, to design a statistical infographic, you have to synthesize information from a fairly large amount of statistics. Pick and choose the important information you want to present. The figure below presents information about children's employment statistics.



(Source: https://venngage.com/blog/statistical-infographic-templates/)

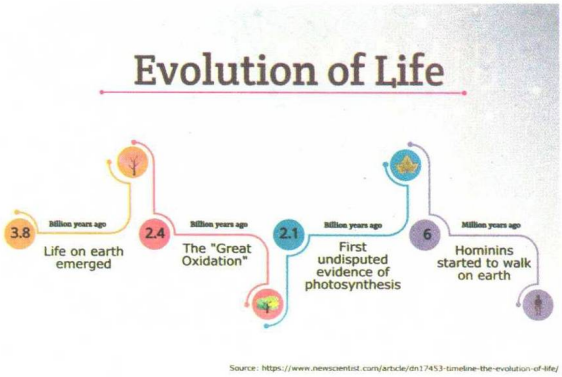
Informational Infographics

An informational infographic is typically more text heavy than most other infographics. Be sure to limit the amount of text you present and summarize your information in concise language (see the figure below).

(Source: https://venngage.com/blog/what-is-an-infographic/)

Timeline Infographics

A timeline infographic presents timeline information for project planning, historical events, process descriptions, event planning, etc. (see the figure below).



(Source: https://www.easel.ly/blog/timeline-infographic-templates/)

Process Infographics

A process/procedural infographic visualizes and summarizes information about a process or procedure, often to simplify the information, as in the figure below.

(Source: https://www.pinterest.com/pin/667940188474496207/)

Geographic Infographics

A geographic infographic captures and visualizes geographic data such as the best features of some of the states as in the figure below.

(Source: https://venngage.com/blog/geographic-infographic-template/)

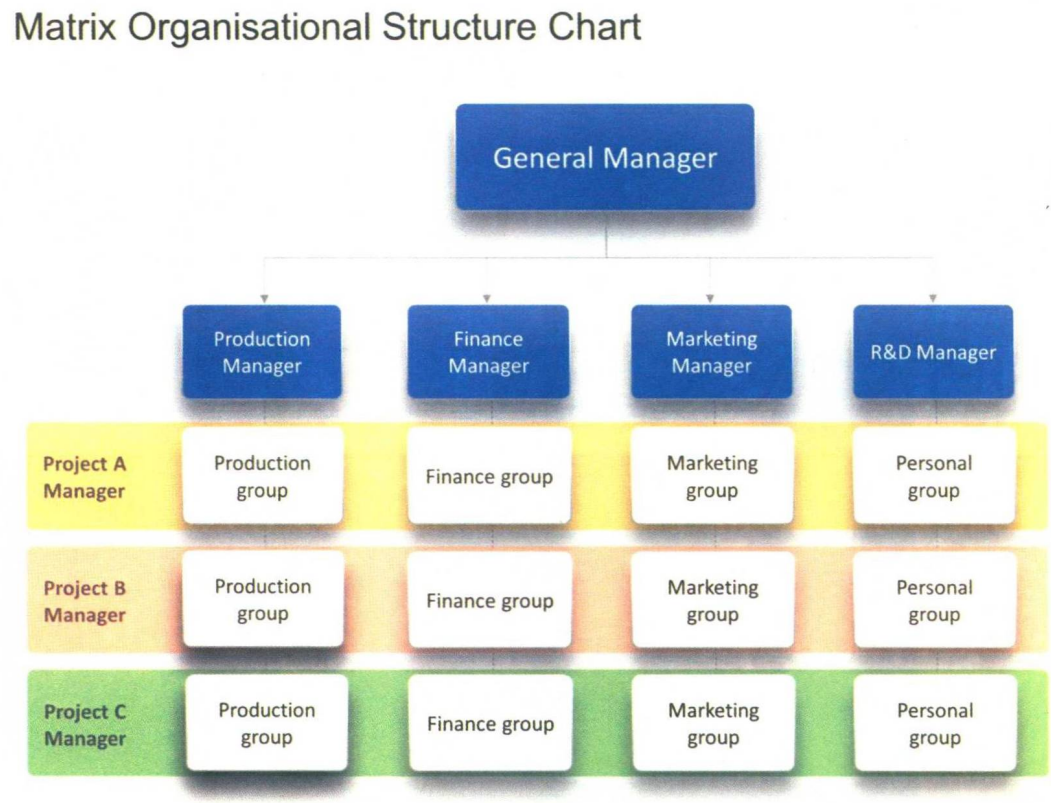
Comparison Infographics

A comparison infographic is, by its name, an infographic that displays comparison in a visual way. For example, the figure below compares various features of iPhone 6s vs. Galaxy S7.

(Source: https://venngage.com/blog/6-comparison-infographic-templates/)

Hierarchical Infographics

A hierarchical infographic organizes information into different levels and displays the relationships between these levels (see the figure below).



(Source: https://slideuplift.com/powerpoint-templates/matrix-organisational-chart/)

List Infographics

A list infographic provides a list of information items on a common topic. A list infographic is different from a process infographic in that information items in the latter are procedural while those in the former are not. The figure below, for example, lists five measures to cope with the COVID-19 situation recommended by the Ohio Department of Health. These five items, however, are not procedural.

COVID-19 TIPS FOR COMMUNITY ORGANIZATIONS

Ohio Department of Health Director Amy Acton, M.D., MPH strongly recommends that all faith- based and community organizations immediately take the following actions:

1 PLAN FOR REMOTE MEETINGS

Implement a plan to hold remote meetings for regular gatherings, including weekly services. Review religious practices and consider ways they could occur to reduce the transmission of illness, especially practices that involve the sharing of common items or close contact with other individuals.

2 ANNOUNCE CANCELLATIONS

Establish a process for temporarily postponing or canceling events, programs, and services—especially for groups at greater risk, such as older adults or people with chronic health conditions.

3 HELP THE COMMUNITY

Engage other community leaders and establish a process to help with grocery delivery, other household tasks, and reduce the feelings of isolation and loneliness of people who are staying home while sick or to avoid exposure to COVID-19.

4 SHARE CREDIBLE SOURCES

Share messages only from credible sources such as: World Health Organization or Centers for Disease Control and Prevention.

5 EDUCATE MEMBERS

Engage with stigmatized groups and speak out against negative behaviors to help counter discrimination against people who are sick. Also watch out for potential language, cultural, and disability barriers when communicating with members or congregants.

VENNGAGE

For answers to your COVID-19 questions, call 1-833-4ASKODH (1-833-427-5634).

Source: https://coronavirus.ohio.gov/wps/portal/gov/covid-19/home/covid-19-checklists/community-and-faith-based-organizations-covid-19-checklist

(Source: https://venngage.com/blog/infographic-templates-free/)

Résumé Infographics

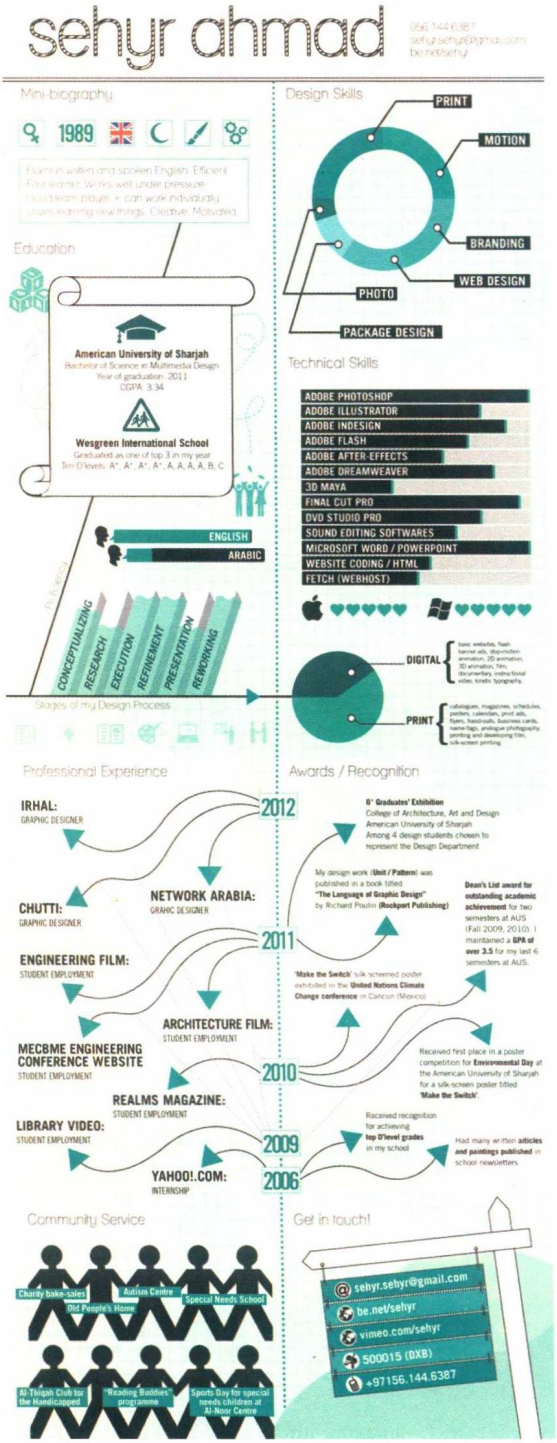
Infographics are increasingly being used in résumé design today as more job seekers realize the importance of an appealing design that can leave a deep first impression on the potential employer. Figure 29 represents a combination of infographics and the traditional résumé and is a moderate deviation from the traditional résumé format design.

(Source: https://venngage.com/blog/infographic-resume-template/)

This next résumé infographic demonstrates a more bold approach in visual design (see the figure below).

(Source: https://infographicworld.com/15-amazing-infographic-resumes-to-inspire-you/)

How about a more drastic approach? The figure below features a design that is more on the graphic side of the info-graphic spectrum.



(Source: https://infographicworld.com/15-amazing-infographic-resumes-to-inspire-you/)

Infographics are a signature of this increasingly visual world. As you start creating your infographic, consider these general guidelines:

- Determine the most important statistics you want to present.
- Use appropriate icons to present these important statistics, one icon for each category.
- Divide your statistics into appropriate categories and color-code them in your infographic.
- Identify one statistic that has shocking value and use it to catch the reader's attention.
- Incorporate a variety of charts and graphs to make it visually interesting.
- Have a good title that summarizes the key topic and argument of the infographic.
- Highlight one particular element by using a contrasting color or pattern to make it stand out.
- Don't be afraid to give your infographic personality by incorporating your individual style.
- Use the rule of proximity to group related information together and create distinctive sections.
- Create a clear logical reading order on the infographic to guide the reader.
- Number the sections whenever it makes sense to facilitate readers' quick scanning of the infographic.
- Consider employing the principle of minimalist design to avoid clutter on the infographic.
- Use good contrasting colors between the background and the foreground to afford good readability.

There are many tools to design your own infographics. Craig Stewart (2020) recommended the following infographic design tools:

- Adobe Spark: free; good especially for social media, with more than 1000 templates available
- Piktochrt: free; good entry-level infographic maker
- DesignCap: free; basic functions, with an option to upgrade to a higher level with more options
- Mural: good for teams to brainstorm and collaborate
- Visme: free; very good for creating engaging infographics
- Biteable: free; offers the capability to create audio and video infographics

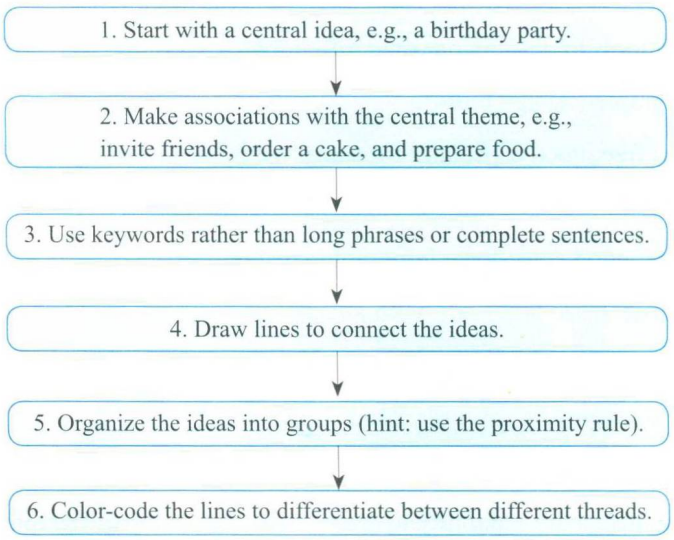
- Canva Infographic Tool: free; easy-to-use online design tool
- Google Charts: free; very powerful but simple to use
- Infogram: free; offers a wide variety of charts, graphs, and maps; also allows you to incorporate your own pictures and videos
- Mind the Graph: free; specializes in scientific infographics
- Kartograph: free; a map-based infographic tool
- Easel.ly: free; web-based; offers a range of customizable templates
- Adioma: offers adaptive templates that build infographics around the text you supply
- PicMonkey: an online editor with a section specifically dedicated to infographic design

(Source: https://www.creativebloq.com/infographic/tools-2131971#:~:text=The%20best%20infographic%20makers%20from%20around%20the%20web.,4%2004.%20MURAL.%205%2005.%20Visme.%20More%20items)

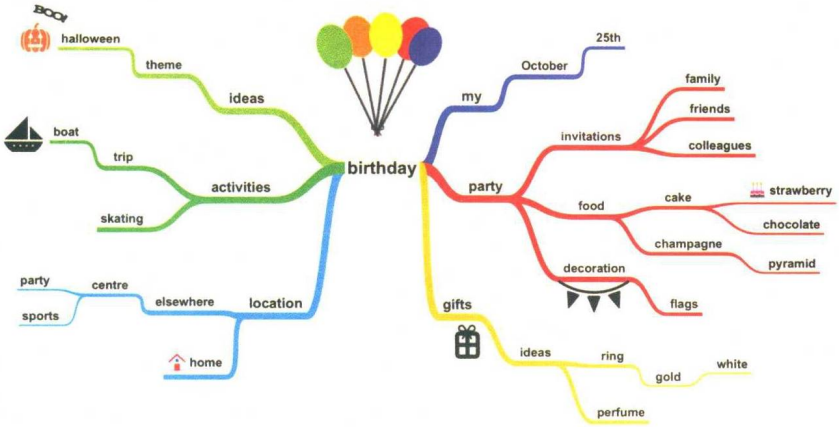
Mind maps

A mind map is a graphic representation tool that captures your thinking in your mind. It's a brainstorming tool that helps you create and develop ideas, gather knowledge, and shape your ideas into distinctive but connected threads.

The following is a typical process of mind mapping. Keep in mind that the steps are not exactly procedural, and the order of some of the steps could be flipped.



Your birthday idea might end up like the following after your mind- mapping process (see the figure below):



(Source: https://simplemind.eu/how-to-mind-map/basics/)

LANGUAGE FOCUS

Here is the process of making a chart. The underlined words and expressions would be useful to you.

How to make a chart?

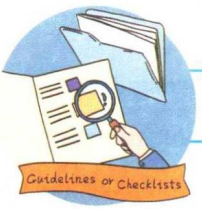
1. Once your data is formatted, making a pie chart only takes a couple of clicks. First, highlight the data you want in the chart.
2. Then click to the Insert tab on the Ribbon. In the Charts group, click Insert Pie or Doughnut Chart.
3. In the resulting menu, click 2D Pie.
4. Once you've clicked that, your pie chart will appear!

How to create a **flowchart** in Visio? [1]

1. Start Visio.
2. Click the Flowchart category.

1 Source: https://support.microsoft.com/en-us/topic/create-a-basic-flowchart-in-visio-e207d975-4a51-4bfa-a356-eeec314bd276?ui=en-us&rs=en-us&ad=us

3. Double-click **Basic Flowchart**.
4. For each step in the process that you are documenting, drag a flowchart shape onto your drawing.
5. Connect the flowchart shapes by holding the mouse pointer over the first shape, and then clicking the small arrow that appears that points to the shape you want to connect to. If the second shape is not directly across from the first shape, click and hold the small arrow, drag it to the second shape, and drop the connector in the middle of the second shape.
6. To add text to a shape or connector, select it, and then type. When you are finished typing, click on a blank area of the page.
7. To change the direction of a connector's arrow, select the connector, and then, on the **Shape** tab, in the **Shape Styles** group, click **Line**, point to **Arrows**, and select the arrow direction and style that you want.



GUIDELINES OR CHECKLISTS

□ Use images and visual elements appropriate to the topic and audience.

□ Use visual elements—logo, typeface, colors, etc. —consistent with your institution's branding practices.

□ Make sure that all types of data graphics and illustrations are uniform in color, design, and style.

□ Use accurate and reliable data in text and graphics.

□ Make sure the text is concise and clear.

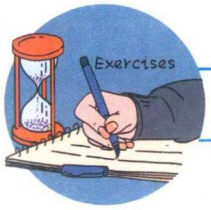
□ Cite the sources of information appropriately.

□ Make sure the graphic serves a purpose.

□ The graphic presents a manageable amount of information.

□ The graphic is clearly labeled.

□ The graphic appears in a logical location in the document.



EXERCISES

Accusation by the Media

Georgia University, where you work, is a public state university with a large student body. Recently, a local newspaper published a report that accused Georgia University of giving admission preferences to white Caucasian students. As a result, the report claims, Georgia University has a predominantly white Caucasian student body and lacks diversity in its student population. This, the report alleges, is a clear violation of the federal Affirmative Action mandate.

Your Task from Your Supervisor

You're the technical writer in the Office of Public Relations at Georgia University. In answer to this accusation from the media, your supervisor has asked you to write a letter to the editor to be sent to the newspaper. The purpose of the letter is to make and provide evidence for the argument that Georgia University has a diverse student body.

This letter to the editor will include a graphic (a graph, a chart, or a table, etc.) that will represent the statistics about the student body makeup at Georgia University. Your supervisor has provided you with the following data:

Georgia University has a total of 32,150 students, classified as follows:

• White Caucasian students:	11,574	36%
• African American students:	9,002	28%
• Hispanic students:	2,572	8%
• Native Indian students:	1,286	4%
• Asian American students:	4,501	14%
• International students:	3,215	10%

Assignment

Your task today is to design a graphic that will effectively represent these data to support your argument that Georgia University has a diverse student body. You can use the data in any way you think is appropriate.

In evaluating your options, consider the following:

- What type of graphic would most effectively present the data to support your argument?
- Would a direct visual representation of all the categories as they are be effective in supporting your argument? For example, if you use a column graph to represent the data, inevitably the "white Caucasian students" category will be the highest column, which will beat your purpose of underplaying this category.
- How would you design your visual so that there's a clear comparison between "white Caucasian students" and all the other categories combined?
- If you're to combine all the categories other than "white Caucasian students," how can you combine them and yet keep the respective categories?

Chapter 6

Workplace correspondence (1): Letters, emails, and memos

Contents

CASE 106

GLOSSARY 106

TASKS 107

- Types of workplace correspondence 107
- Principles of effective correspondence 113
- Writing letters 115
- Writing emails 118
- Writing memos 123

LANGUAGE FOCUS 129

GUIDELINES OR CHECKLISTS 132

EXERCISES 132

CASE

Sylvia is a project manager working at a financial services firm. As part of her primary responsibilities, she coordinates and runs meetings and communications, documents each project and assesses risks and solutions that keep the project running as smoothly as possible. Her daily routines include writing letters and emails to her clients, exchanging notes with colleagues, writing memos to keep track of the project progress. And she finds that writing clearly is really important for workplace correspondence, since the texts can be interpreted in so many ways. So she must avoid any miscommunication in writing letters, emails and memos.

GLOSSARY

recipient /rəˈsɪpiənt/ a receiver; one who receives or is given something （文档的）接收者

salutation /ˌsæljnˈteiʃn/ a word or phrase serving as the greeting in a letter or speech, as *Dear Sir* in a letter or *Ladies and Gentlemen* in a speech 称呼

addressee /ˌædrɛˈsi/ the one to whom something is addressed 收件人

carbon copy /ˈkɑrbən/ /ˈkɑpi/ a copy of a document made by using carbon paper, a photocopier or similar mechanism 复写件，抄送件

cliche /kliˈʃeɪ/ a word or expression that has lost much of its force through overexposure 陈词滥调

enclosure /ɪnˈkloʊʒər/ something, esp. a supporting document, enclosed, as within a letter 附件

notation /noʊˈteɪʃən/ a system of figures or symbols used in a specialized field to represent numbers, quantities, tones, or values 记号，标记

indent /ɪnˈdɛnt/ to set in from the margin 缩排，缩进

netiquette /ˈnɛtəˌkʌt/ etiquette practiced or advocated in electronic communication over a computer network 网上礼仪，网络冲浪守则

buffer /ˈbʌfər/ one that protects by intercepting or moderating adverse pressures or influences 起缓冲作用的人（或物）

Emails, letters, and memos are forms of correspondence, frequently used to correspond with clients, supervisors, colleagues, and others to share information, make requests, and convey decisions. Writing these documents will be a regular part of your job, which can lead to efficient workplace communication.

Types of workplace correspondence

Features of letters, emails, and memos

A great deal of communication in the workplace is conducted through letters, emails, and memos. When you need to correspond with others, the first thing you need to consider is the appropriate type of document. Here are the main features of letters, emails, and memos:

- **Letters** have many conventional parts and are the most formal of the three types of workplace correspondence. They are most appropriate for communicating with those who are outside your organization, or in some formal situations, with people in your organization. Letters can be used to make requests or inquiries, accept or refuse claims, communicate important information, and apply for jobs.
- **Emails** are the fastest and most efficient means of written communication. Emails can be written to people either inside or outside your organization. You can send a message electronically to one or many recipients. And it is also convenient for the recipients

to store and forward your messages. In addition, you can attach other files to an email message. Previously, emails were regarded as a less formal format of workplace communication. However, emails are being increasingly used for formal communication, too.

- **Memos** are usually used for communication within your own organization. Memos are more reliable than emails for information that should not be broadly released. They are often used to convey decisions, meeting agendas, policies, internal reports, and short proposals.

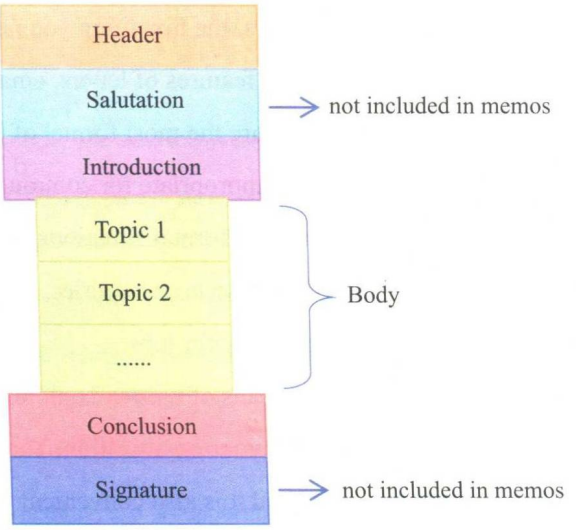
Basic pattern of letters, emails, and memos

Letters, emails and memos are used for different purposes of communication, so the patterns are somewhat different. But they also have something in common. Generally, letters, memos, and emails are formatted based on the following pattern:

- **Header** with the company name and address of the sender, as well as the recipient's name and address
- **Salutation** for the recipient (not included in memos)
- **Introduction** that states the writing purpose and/or a clear main point
- **Body paragraphs** that provide need-to-know information
- **Conclusion** that restates the main point
- **Signature** of the sender (not included in memos)

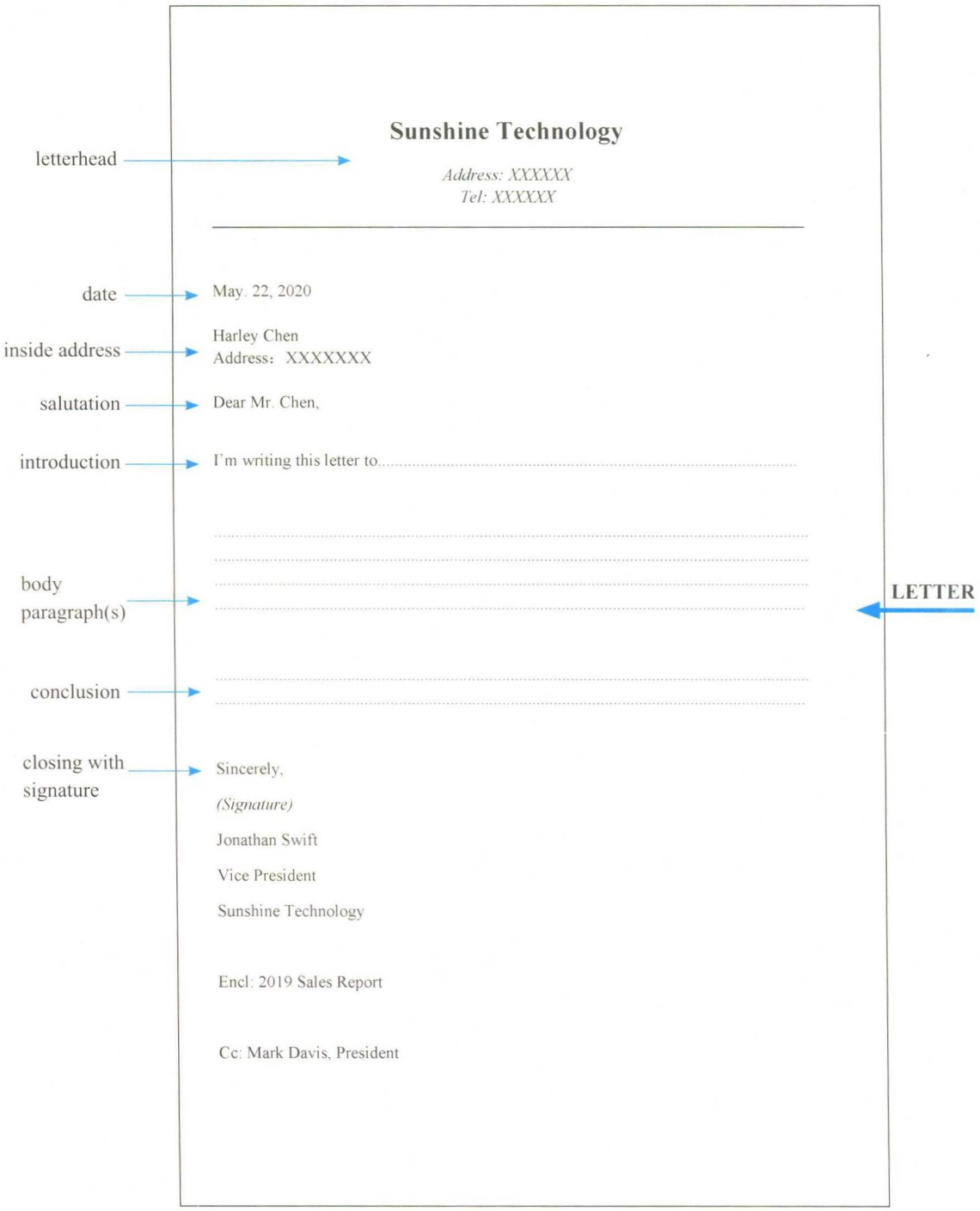
The following model shows a basic pattern that can be applied to a letter, an email, and a memo.

A BASIC PATTERN



Obviously, letters, emails, and memos differ in the way they are formatted. The table shows the components usually included in the format of letters, emails and memos. And the figures illustrate how a letter, an email and a memo look like.

Letters	Emails	Memos
• letterhead • date • inside address • salutation • closing with signature	• An addressee line for the readers' email addresses (*To:* _____) • Carbon copy lines (*Cc:* _____) (*Bcc:* _____) • A subject line (*Subject:* _____) • An attachment line (*Attachment:* _____) • Closing with a pre-made signature	• memo head • date • A line for the readers (*To:* _____) • A line for the sender (*From:* _____) • A line for the subject (*Subject:* _____)


letterhead
Sunshine Technology
Address: XXXXXX
Tel: XXXXXX
date
May. 22, 2020
inside address
Harley Chen
Address: XXXXXXX
salutation
Dear Mr. Chen,
introduction
I'm writing this letter to.....
body paragraph(s)
conclusion
closing with signature
Sincerely,
(Signature)
Jonathan Swift
Vice President
Sunshine Technology
Encl: 2019 Sales Report
Cc: Mark Davis, President
LETTER

addressee line → To: Harley Chen <HarleyC@hcindustaries.com>

carbon copy lines → Cc: Lindy Smith <LindySmith@hcindustaries.com>

→ Bcc:

subject line → Subject: Sales Analysis for XXX

attachment line → Attachment: Sales Analysis Report. PDF

---

salutation → Dear Mr. Chen,

introduction → The report attached to this email is .....

body paragraph(s) → .....

.....

.....

.....

.....

.....

EMAIL

conclusion → .....

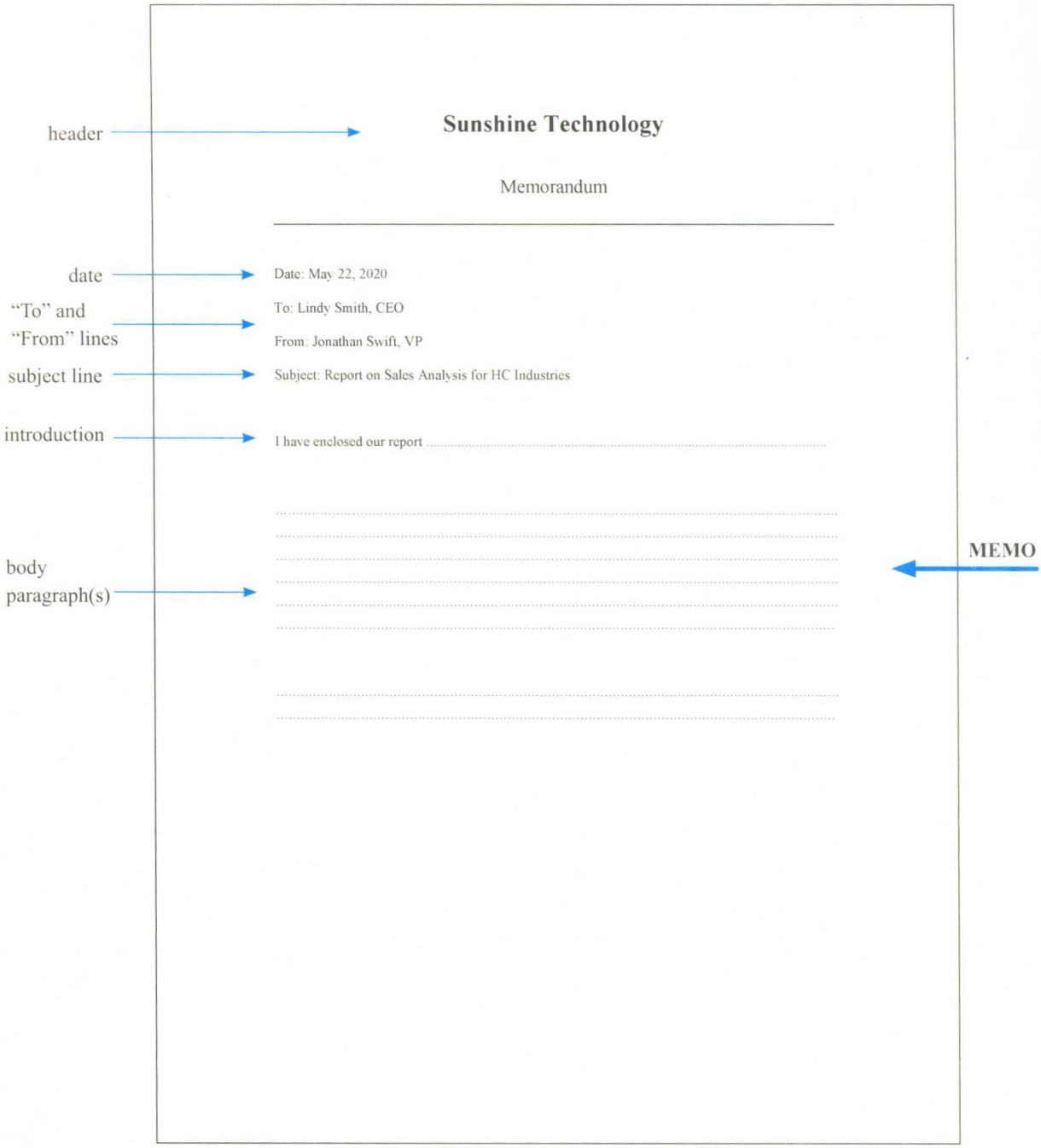
.....

closing with pre-made signature → Regards,

Jonathan Swift

Vice President

Sunshine Technology


header
Sunshine Technology
Memorandum
date
Date: May 22, 2020
"To" and "From" lines
To: Lindy Smith, CEO
From: Jonathan Swift, VP
subject line
Subject: Report on Sales Analysis for HC Industries
introduction
I have enclosed our report
body paragraph(s)
MEMO

Principles of effective correspondence

Writing effective letters, emails, and memos not only helps get the job done, but also serves as a way to evaluate the writer's performance. Your managers and administrators can tell from your correspondence whether you are solving or creating problems, communicating with or confusing readers, building or ruining relationships, and getting the job done or making no progress. When writing workplace correspondence, follow these suggestions:

Creating goodwill

Goodwill is a feeling of good intentions. Just like friendship, goodwill is fostered by being honest and polite. Business friendships grow in an atmosphere of mutual respect and trust. You need to create goodwill through the choice of words. You can also generate your goodwill by responding to correspondence as quickly as you can. Using humor can create goodwill, but humor used carelessly may be harmful. Consider readers, situation, and character of the relationship before deciding whether to involve humor in your correspondence.

Communicating honestly

You should communicate honestly when you write any kind of workplace correspondence. Because the topics discussed in letters, emails, and memos often relate to your professionalism and the quality of your work. For example, if you conceal the truth about the delay of shipments to avoid responsibility, you will lose your most important credential: your credibility. Even your organization has to suffer the consequences of your dishonest behaviors. In such a case, the professional approach is to be honest and tell the truth.

Using a suitable tone and the "you attitude"

Always remember that correspondence should convey a courteous and positive tone. The key to accomplishing it is the "you attitude". You need to look at the situation from the reader's angle and adjust the content, choice of words, and tones to meet the needs of the reader.

When you convey neutral or positive information, you should use the word *you* to address your readers. This style emphasizes the readers rather than the writer. For example:

We would like to update your team on the progress of the project.

In most cases, negative information should not use *you*, because it sounds somewhat offensive. Read the following two versions:

Version 1: *Your lack of supervision on the machinery led to the recent breakdown.*

Version 2: *Improved supervision will help us avoid machinery breakdown in the future.*

Version 2 avoids *you* and sounds more acceptable, creating a constructive tone, even though the author is criticizing them.

Providing need-to-know information accurately and logically

While drafting, ask yourself, "What information do I need to provide to achieve the purpose of writing this letter/email/memo? " Then, include any facts, examples, data, and reasoning that will help meet the needs of your readers. Don't take up readers' time with details they do not need. Inaccurate, incomplete information will create misunderstanding and problems.

Organize the information in a logical way and follow conventional format, which will make it easy for your readers to follow your thinking and, at the same time, demonstrate your professionalism. Unfamiliar format may confuse your readers and make your intent unclear. Sloppy appearance may make you and your organization appear incompetent and/or careless.

Using concise, standard language and avoiding clichés

All types of workplace correspondence should be correct and concise. Never use fuzzy, unnecessary words. Grammatical and punctuation errors and misspelled words will cause you and your organization to appear uneducated and/or careless.

Although traditionally some words and phrases have come to be associated with workplace correspondence (e.g., *per your request*), don't use them, because they sound bureaucratic and insincere and depersonalize the correspondence. The following table shows some clichés and their plain-language equivalents.

Correspondence clichés	Plain-language equivalents
Per your request...	As you requested...
Attached, please find...	I have attached...
Enclosed, please find...	I have enclosed...
pursuant to our agreement...	as we agreed...
In accordance with your wishes...	As you requested...
In observance with...	According to...

Writing letters

Letters are still a basic means of communication between organizations. Compared with memos and email messages, letters are a more formal and personal medium. To write effective letters, you need to understand the audience and purpose, the elements and the formats, and the common types of letters sent in the workplace.

Audience and Purpose of Letters

Letters are generally for readers outside an organization. The audience for letters are usually an external audience, whom you may know very little about. So before writing a letter, consider your audience: Who will read this letter? What is your relationship to this person? What is the formality level expected by the reader? Then, focus on your purpose: What do you want your reader to do after reading your letter? Answering in advance these questions about the audience and purpose of your letter will enable you to write a letter that better connects with your readers and achieve the outcome you seek in writing the letter.

Since letters typically address external audiences, your readers may not know the jargon, the background, and relevant information important in understanding the issues being discussed in the letter. Be careful about the choice of words and the appropriate tone. For special circumstances such as promotions and dismissals, letters are used internally. You need to plan for a higher level of formality because of the importance of the issue.

Elements of a Letter

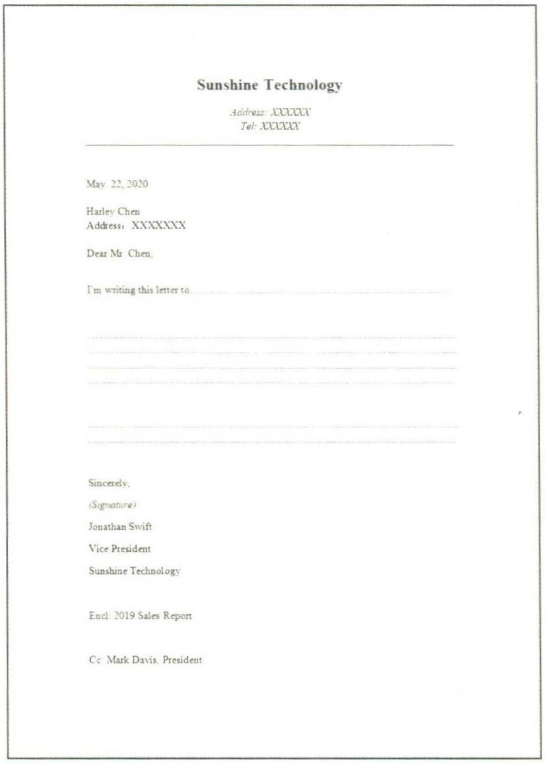
Most letters include a heading, date, inside address, salutation, body, closing, and signature. Some letters also include some other parts, such as enclosure notation and copy notation. The following figure illustrates and describes the elements of a letter.

• **Letterhead:** Most organizations use letterhead stationery with their logo, company name, and address printed at the top. Optional information, such as telephone and fax numbers, can also be included.

• **Date:** The date the letter is written.

• **Inside Address:** The inside address shows the name and address of the recipient of the letter. If the recipient has a professional title (e.g., *Prof.* or *CEO*), use it. If not, use *Mr.* or *Ms.* Spell the name of the organization the way the organization itself does (e.g., *International Business Machines* calls itself *IBM*). Include the complete mailing address—street number and name, city, state, and zip code.

• **Salutation:** The salutation directly addresses the recipient of the letter. The traditional salutation is *Dear*, followed by the recipient's courtesy title (e.g., *Mr.*, *Ms.*) or professional title (e.g., *Capt.*, *Chief*) and last name, and then a colon. If you do not know whether the recipient is a man or a woman, the best solution is to address the recipient to a department name, committee name, or a position name (e.g., *Dear Sales Department*, *Dear Director of Financial Department*).



Sunshine Technology

Address: XXXXXX
Tel: XXXXXX

May 22, 2020

Harley Chen
Address: XXXXXXX

Dear Mr. Chen,

I'm writing this letter to.....

.....

.....

.....

.....

.....

Sincerely,

(Signature)

Jonathan Swift

Vice President

Sunshine Technology

Encl: 2019 Sales Report

Cc: Mark Davis, President

• **Text:** In most cases, the text contains at least three paragraphs: an introductory paragraph, one or more body paragraphs, and a concluding paragraph. The introductory paragraph identifies your purpose of writing this letter and connects with the recipient's interest. The body paragraphs present details of your message. The concluding paragraph sums up and encourages action.

• **Closing:** The closing is also called the complimentary close. It is often written as *Sincerely yours*, *Respectfully*, or *Respectfully yours*. Notice that only the first letter is capitalized, and it is always followed by a comma. The closing should parallel the level of formality used in the salutation and should reflect your relationship to the recipient. *Yours truly* and *Sincerely* are the most common. Others, in order of decreasing formality, include:

Respectfully, *Best wishes,* *Best,*
Cordially, *Regards,*

• **Signature block:** Type your full name below the complimentary close and sign your name, in ink, between the complimentary close and the printed name. Whenever possible, include your title or the name of the position you hold just below your name.

• **Enclosure notation**: If the envelope contains documents other than the letter, include an enclosure line that indicates the number of enclosures. If there are more than one enclosure, add the number. For example:

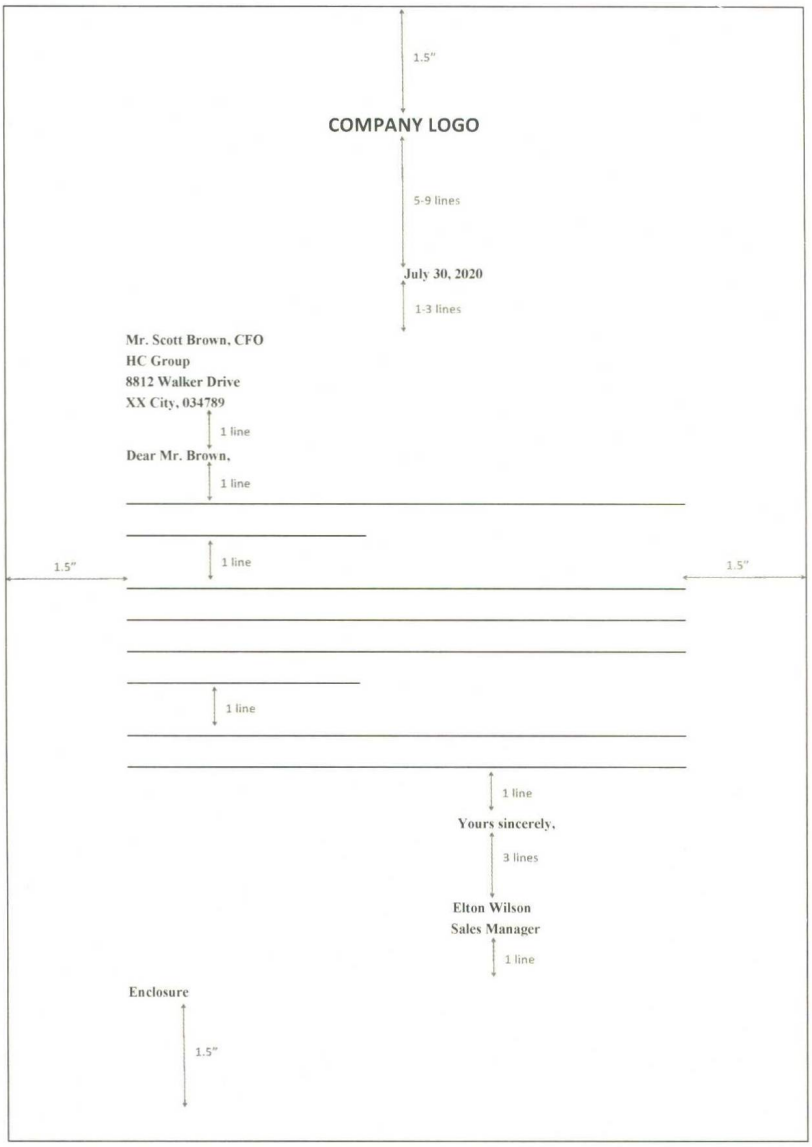
Enclosure
Enclosures 3
Encl. 2
Enclosure: 2019 Sales Report
Enclosure (2): 2019 Sales Report
2020 Sales Conference Agenda

• **Copy notation:** If you distribute copies of your letter to other recipients and want your primary recipient to know it, include a copy notation. Use the notation *Copy*, or the symbol *c* for *Copy*, or the symbol *Cc* for *Courtesy copy*, followed by a colon, and the names and titles of the other recipients.

Formats of a Letter

Letters have a rather plain design and follow standardized formats and templates. Usually letters follow one of two typical formats: modified block or full block.

- In **modified block format,** the dateline and closing begin at the horizontal center of the page. Paragraphs begin at the left margin. This format may be more difficult to key, but it looks more symmetrical on the page.
- In **full block format,** every line begins at the left margin, and paragraphs are not indented. This format is popular because it saves keying time.



a. Modified block format

COMPANY LOGO

July 30, 2020

Mr. Scott Brown, CFO
HC Group
8812 Walker Drive
XX City, 034789

Dear Mr. Brown,

Yours sincerely,

Elton Wilson
Sales Manager

Enclosure

b. Full block format

Writing emails

Email is the primary way people communicate in the workplace. In many cases, email has replaced both phone calls and letters. Email offers both rapid speed and wide reach and gives readers the time to consider the message being sent. Besides, email provides organizations

with written documentation, helping track a project or even proving critical for legal purposes. What's more, email is probably the best approach for regular communication when people are in different time zones or have different work schedules. Another advantage is its function as a vehicle for sending attachments, such as long reports, contracts, and photos.

Audience and purposes of emails

For professional correspondence, email is a common way to communicate. The audience may be inside or outside your organization. No matter you know them or not, remember that your readers often receive a great deal of emails in a day and they expect the writers to focus on a point and to keep the message brief, relevant, and clear.

Since emails can be forwarded easily, you have little control over who the final readers will be, even if you send your email only to one particular person or group. Suppose, for example, you email a colleague in your project team with some complaints about another department. Then your message probably could end up being read by the vice president, a scenario that may bring you some trouble. To avoid such embarrassment, always assume that your email will travel far beyond its intended recipient.

The audience for an email might be vast, and the purpose of email should be specific: to schedule meetings, update information on a project, discuss issues with your colleagues, contact your clients, confirm or inform messages, and send other documents as attachments. When drafting an email, make the purpose clear and be sure your purpose is strictly work-related.

Elements of an Email

Usually you do not need to be concerned about the format of emails because a default format usually is available in the email program such as Microsoft Outlook. What you need to do is to type the intended recipient, the subject, the messages, and other necessary information. The following two figures illustrate and describe the elements of an email.

Mail To: Doc Team

File Edit View Actions Tools Accounts Window Help

Send Cancel Address

Mail Send Options

From: Melissa Cartright CC: Bob Halloran

To: Doc Team BC: Cindy Belloc

Subject: Input re Policy on Including Print Doc

Julie, Bob, and Rajiv-

As I mentioned at our meeting last week, I want to get your response to an idea about changing the way we distribute print docs with our systems. I'll be meeting with Ann in Marketing next week and I want to be sure I can represent our views effectively.

The idea is to stop including the Getting Started brochure and the User's Guide in the box. Instead we'll include a post card that customers can use to request these two docs, at no cost. Of course, the two docs will remain up on the site as PDFs. And we'll still include the setup instructions on the poster.

A recent thread on TECHWR-L on this technique suggests that it can reduce the number of docs that we need to print by 70-85%. That's good, of course, in terms of print runs, as well as shipping costs. Before I run the numbers on cost savings, however, I want to get a sense of what you think about the idea from the perspective of the customer. Do you think that not including the docs will make a bad impression? Will it increase problems when they set up the printers?

We won't have final say on whether to adopt this idea, I'm afraid, but I want to make sure our voices are heard. After all, we know more about the customer experience than anyone else at the company.

Please respond by email to all of us by Friday at noon. Thanks very much.

Regards,

Melissa

Melissa Cartright, Senior Documentation Specialist
Print Pro Systems
voice: 216.555.3407
fax: 216.555.3400

Account: Novell GroupWise

"CC" stands for courtesy copy. All of your recipients will know that you are sending a copy to this person or group.

"BC" or "Bcc" stands for blind copy or blind courtesy copy. None of your readers will know that you are sending a copy to this person or group.

You can create a "group" for people whom you email frequently.

Like a memo, an email should have a specific subject line.

By naming her readers at the start, the writer is showing respect for them.

The first paragraph of the email clarifies the writer's purpose.

The second paragraph describes the idea. You want to be sure your readers understand the context.

Notice that paragraphs are relatively brief and that the writer skips a line between paragraphs.

The writer explains what she would like her readers to do, and she states a deadline.

The writer ends politely.

The writer has created a signature, which includes her contact information. This signature is attached automatically to her emails.

From: Jonathan Swift CC: Lindy Smith

To: Harley Chen BC: Kent Edward

Subject: Sales Conference Agenda

Dear Mr. Chen,

As we have discussed about....., I want to get your response to .....
.....
.....

The agenda attached is .....
.....
.....
.....
.....
.....
.....
.....

Please respond by email to all the members of .....
.....Thanks very much.

Regards,

Jonathan

Jonathan Swift, Vice President
Sunshine Technology
Tel: XXXXXXXX
Fax: XXXXXXXX

• **Header:** Almost all heading sections in email programs include fields for "To" and "Subject". And the subject line should be brief and specific. Usually the sender's name or address and date are automatically inserted. Header can also contain other fields, such as "CC" and "BCC". "CC" stands for courtesy copy, which means all your recipients know that you are sending a copy to this person or this group. "BCC" stands for blind courtesy copy, indicating that none of your recipients know that you are sending a copy to this person or this group.
• **Salutation:** You need to name the recipient at the start, by which you are showing respect to them.
• **Introduction:** In the first paragraph, you need to clarify the purpose of the email, getting right to the point.
• **Body paragraph(s):** One or more paragraphs are needed to explain the details. Notice that all the paragraphs in an email are relatively short and brief. Skip a line between paragraphs.
• **Conclusion:** The last paragraph invites further action. You can explain what you would like the recipients to do, express your appreciation, state your request, etc.
• **Closing:** Just like writing letters, end politely with complimentary closing.
• **Signature block:** Signature block includes your signature and contact information. You can set up the signature block in *Setting* (usually displayed as a gear icon in your email program), and it will be attached automatically to your email every time you click "New Email" icon.

Email tone and netiquette

All workplace emails should be professional and factual in tone.

- Keep your subject line brief, specific and descriptive. Busy professionals may receive a great volume of emails every day. So a clear and brief subject line can show your recipients how the topic relates to them. A poorly written subject line may make your recipient delete your email without even reading it.
- Consider who are your recipients and purposes of writing the email, and then decide on the formality and length. For example, emails written for people inside your company and those outside your company have different levels of formality. Besides, in most cases your recipients will read emails from a computer screen or a cellphone screen, instead of printing hard copies. So keep your messages as brief as possible so that your recipients can read the message without scrolling through several pages.
- Consider privacy and security. Electronic communication is not truly private. Any email message written at work is usually owned by your organization. Another problem is security. Keep in mind that email leak and compromise happen and may cause quite a mess.
- Handle emotions effectively. In emails, don't flame, even you are criticizing the recipient. Don't use all capital letters, which generally equates to shout. If you want to convey feelings in emails, you can use emoticons, symbols, such as the smiley face. But before using them, you must carefully consider how your recipients will react to them. Those emoticons and symbols can be misinterpreted or misunderstood.
- Learn about netiquette for electronic communication. The following table shows a list of netiquettes.

Netiquette	Explanation
Read and respond to email promptly.	If you are really busy, acknowledge your recipient and respond later.
Stick to business.	Don't send nonbusiness messages and discuss nonbusiness issues via workplace emails.
Keep email messages short and brief.	The recipients expect emails to be brief. Avoid quoting large blocks of text. If possible, don't ask your recipient to scroll through long screens of information.

Use the appropriate level of formality.	Consider your audience and purposes of email.
Write correctly.	Proofread carefully before you press "Send".
Develop a descriptive, precise subject line.	The recipients can predict the message and decide whether to read it immediately or to file and locate it later.
Communicate politely and professionally.	Don't flame. Workplace communication should be rational and professional.
Make your message easy on the eyes.	Don't indent paragraphs. Skip lines between paragraphs. Don't write in ALL CAPS, which seems that you are shouting at the audience.

Writing memos

Memo, short for "memorandum", means "memorize" and "remind". Memos are mainly used to remind readers about important events, give instructions, and provide written records of project progress. Memos are important in workplace communication because memos signal a more official communication and provide formal, written documentation about a project, event, or issue. Compared with letters, memos are more efficient. They are more reliable than emails, especially for the information that should not be broadly released.

Audience and purpose of memos

Memos are mainly used to correspond inside an organization. So most memos are addressed to internal audience. But you still need to consider your audience carefully. Although they are in the same organization, the audience may have various backgrounds, opinions, roles, interests, and levels in the organization. So the first step of writing an effective memo is to identify the audience who will receive and read it.

The purpose of your memo should be clear. Memos are usually used for informing the audience, motivating them to take action, offering solutions, outlining changes in procedures, and announcing news and decisions. Sometimes, memos can also be used as documentation of discussions, decisions, or actions.

Typically, memos are sent as a PDF attachment to an email or printed out. But now, hard copy is giving way to digital delivery, which is much easier to trace. But messages may also be ignored when received among a large amount of daily emails.

Elements of a memo

• **Header:** A standard memo has the name and logo of the organization and the word "Memo", "Memorandum", "Interoffice Communication", or "Internal Correspondence" centered at the top of the page. The following are standard headers of memos.

Rockford Services
MEMORANDUM

Sunshine Technology
MEMORANDUM

Dynacol Corporation
INTEROFFICE COMMUNICATION

NETII Software
INTEROFFICE COMMUNICATION

• **Heading section:** Typically, the heading identifies the recipient(s), sender, date, and subject. The following shows elements included in the heading. These elements may not appear in that order since different organizations have different designs for their memo templates.

To:	H. Cruz	cc:	J. Williams
From:	W. Blackwood W. B.		C. Braxton
Date:	22, August, 2020		
Subject:	Report on the Shipment Delay and Recommendations		

• **To:** Name the recipient (and his/her title). You may name one person or a group, for example, *Recruitment Committee*. When you are sending a memo to more than one person, key all their names (and titles). For example:

To: Sue Beniwal, Director of Operations

To: Recruitment Committee

To: Neelam Harrington, Thomas Wilson

If the copies of your memo are to be sent to readers not listed in the "To" line, you can name these people (and their titles) in the field "cc". You can also create a distribution list at the bottom of the memo.

• **From:** List the name of the sender. If you are the only person responsible for the memo, your name appears. If the memo is from several people or from a group, list all their names or the group name. Remember to write your initials or sign your full name after the keyed name to show that you have reviewed the memo and accept responsibility for it. For example:

From: Sales Department

From: William Blackwood *William Blackwood*

• **Date:** The dateline serves as a chronological record for future reference. It would be better to write out the month instead of using the all-numeral format, especially for multicultural readers. The all-numeral format can have different notations for readers from different backgrounds, which may lead to confusion and misunderstanding. Write "Dec. 10, 2020" instead of "10-12-2020".

• **Subject:** Usually, the subject line appears at the last of the headings. You may also use terms such as *Reference*, *Regarding*, and *Re*. The subject line should be specific, clearly announcing your purpose and telling the readers what you are going to discuss in the memo. A subject line that reads "Shipment Delay" is too general to provide hints for readers' prediction. Instead, "Reports on the Shipment Delay and Recommendations" is precise to tell the readers what to expect in the memo.You can capitalize the first letter of all major words and use a phrase or a clause, instead of a complete sentence, for the subject line.

Another critical function of the subject line is to help you focus on the most important idea. A memo should cover only one point. If you have two messages for the same audience, you should write two memos. Generally, the memo should cover the same idea the subject line states.

• **Main text:** The memo begins with a clear statement of purpose in the opening paragraph. If possible, provide a context the audience can recognize, such as

As you requested at our May 22 meeting, I have gathered all the information about...

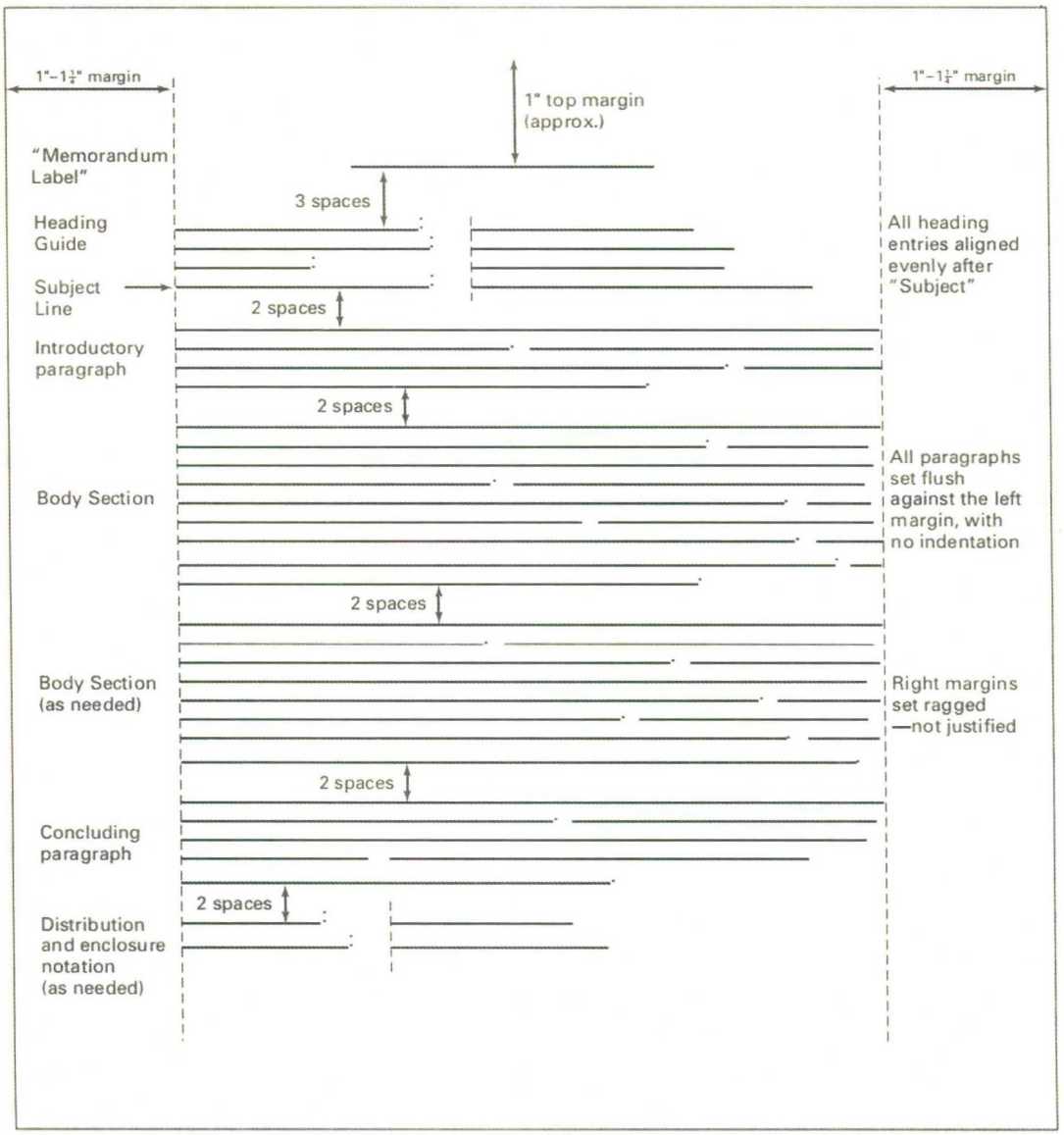
The body section provides necessary details of the message, complete yet compact. For audience not familiar with the topic, offer a brief background paragraph and one or two paragraphs to address the main issue. You can conclude by suggesting a course of action or asking your readers to follow up.

• **Distribution and enclosure notations:** If you need to send copies of the memo to other readers, you can use distribution notation, such as "Distribution List" and "Copies". Other documents can also be attached to the memo. You can use terms such as "Attachment" and

"Enclosure" as needed in the same way with workplace letters.

Formats of a memo

When you write a memo, organize it in a way that it is easy for your audience to follow. Most organizations have their own memo template or memo stationery. Usually, do not indent a paragraph's first line, and single-space within paragraphs and double-space in between. The figure illustrates a standard memo format.



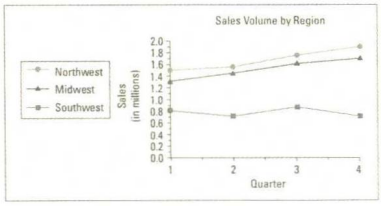
When the memo covers multiple subtopics, include headings (as shown in the following figure) to help you organize and help readers locate information quickly. These internal headings should be set two-line space below the preceding paragraph and one line space above the following paragraph.

To improve readability, you can organize facts and figures in a table or in bulleted or numbered lists. The line graph used in the following memo underscores and justifies the writer's concern about the company's sales performance.

GE Enterprises

Memorandum

Date: January, 16, 2020
To: Hannah Smith, Director of Sales
From: Jorge Martin, Sales Manager *J.M.*
Subject: Yearly Sales Volumes in 3 Regions



GE Enterprises

Memorandum

Date: September, 16, 2019

To: Belinda Jones, Director of R&D

From: Steve Robin, Technical Service S.R.

Subject: Trip Report to HC Industries

The purpose of this memo is to .....

.....

.....

Summary

In general, ...

.....

.....

Discussion

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

Recommendation

.....

.....

.....

.....

.....

LANGUAGE FOCUS

Letters, emails and memos are used for conveying messages. Use appropriate language styles and expressions to suit the message. Generally, the informative and good news messages are best presented in a straightforward manner; the strategy for bad news messages is indirect; persuasive messages require more motivation.

Language for informative and good news messages

Workplace correspondence usually gives the readers messages that are pleasant, or at least acceptable. Correspondence about good news, inquiry, and appreciation are all in similar language style. Since readers are in a receptive mood, the language can be direct.

In an inquiry memo: *I would appreciate any information you will send to me by email about the progress of the project.*

In a good news email: *By Oct. 6, 2019, please submit all the lab garments checked out to you. We signed a contract with a new cleaning company, which will replace all the garments.*

Language for bad news messages

The messages conveyed through workplace correspondence are not always pleased to read. Occasionally, you need to write correspondence to share negative news or information, such as layoffs, unpopular policy changes, request refusal, shipment delay, and service complaint. Readers are not expecting negative news. A bad news message must convey the bad news and, at the same time, maintain the goodwill. Therefore, consider writing in an indirect way to soften bad news with the following language strategy:

- **Step 1:** Begin with a buffer. Usually, a buffer states a point upon which the reader agrees. For example, if your email is to decline the invitation to a ceremony, you can mention the significance of the ceremony at first.

- **Step 2:** Announce the bad news. Remember to place the bad news in the middle or at the end of the section, not at the beginning. Sometimes you may need to explain the reason. You can also imply the bad news rather than state it directly. In the following examples, Version 1 follows an indirect pattern which the readers will find more acceptable.

  Version 1: *As described in the letter you sent us, the camera experienced a fall and stopped working. After inspecting your camera, we have determined that we will need to charge for the repair. According to the warranty, repairs can only be made at no cost when problems are due to manufacturer error.*

  Version 2: *We will charge for the repair. As you described, the camera experienced a fall and stopped working, which is your own fault, not a manufacturer error.*

- **Step 3:** Close the message on a pleasant note by offering an alternative solution, making a constructive suggestion, or holding a positive view on the future. For example, in a memo about the uniform dress policy, you may conclude like this:

  Besides enhancing the company's professional image, the new policy will save you money because your personal clothes will not be subjected to the chemicals you need to use for work.

Language for persuasive messages

Frequently, you need to write correspondence to convince the recipients. Persuasive messages

are often used to promote products and services, and request for assistance and participation. Sometimes your readers are receptive to such messages, but some are not. So what you need to do when conveying persuasive message is, first to arouse readers' attention, then to convince them to agree with the message. To make your products, services, ideas and proposals appealing, try the following language strategies:

- **Hook your readers' attention.** Hooks are words designed to get readers' attention and begin to read the message. Hooks may start on the envelope of a letter, or can be an announcement written in boldface at the beginning of the message. Those words can also be underlined, bulleted, shadowed with color, or set apart from the text. Persuasive messages can use fonts, pictures or graphics, or anything to capture the attention of the readers. The following are some attention-getters:

  Free Sample Inside — who doesn't love free stuff?

  BOGO: Buy One Get One Free — acronym

  Would you like to save money? — a rhetorical question

  The homeless kids need YOUR help! — capitalization

- **Convince your readers of the benefits or advantages.** Convince your readers with facts. A persuasive message should offer solid evidence of the merits of the product, service or idea. You need to use facts, figures, and statistics to provide objective proof. Your language should be of factual style. For example, in a memo discussing the Bird Flu Contingency Plan, you can convince your readers like this:

  The above statistics show that the risk of a pandemic is real.

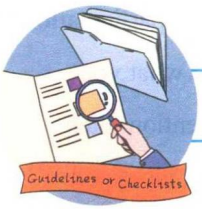
  The WHO recommends the immediate development of contingency plans.

- **Motivate your readers to action.** Finally, you must try to motivate the readers to take action. To acheive your goal, you need to make this part as convenient as you can. The following are some typical motivators:

  We are waiting to take your call.

  Buy now and save 30% off the cover price.

  Want to learn more? Just return the enclosed card so we can start your subscription immediately.



GUIDELINES OR CHECKLISTS

Using the following checklist when constructing workplace correspondence:

□ Identify and analyze the audience.

□ Determine whether the situation calls for a letter, email or memo.

□ State the purpose or goal clearly in the correspondence.

□ Follow the correct format for the correspondence and contain correct parts.

□ Include all necessary information.

□ Make the message complete and accurate.

□ Make sure the main points are clearly stated.

□ Take into consideration a good news, bad news or persuasive message.

□ Use the appropriate tone and level of formality.

□ Proofread the message for mistakes in spelling, grammar and punctuation.

EXERCISES

1. Rewrite the following sentences to make them more positive, cordial and tactful.

a. I am in hopes that you will call soon.

_____

_____

_____

b. Because you request such an amount of information in your letter, I simply cannot help you without seriously disrupting my work schedule.

_____

_____

_____

c. If you do not complete and return this advertisement contract by August 20, 2019, we will definitely sell your advertisement space to some other client.

_____

_____

_____

2. Suppose you are a frequent customer of a store. You find that, recently, it is difficult for you and other customers to find parking spaces. Write a complaint email to the General Manager of the company. You can create the name of the company and other necessary information.
3. Suppose you are the General Manager of the company, who receives a complaint email from a customer. You write a memo to all employees. Revise the following message so that it gets the intended results. Use a memo format and pay close attention to tone.

   We notice that many employees are parking in front of the store rather than behind it. As a result, customers have been complaining that they cannot find parking spots if employees don't park where they are supposed to, we'll lose customers. Lost customers means lost jobs. As the General Manager of this company, I don't want to lose it just because employees are too lazy to walk from the back lot. Let's keep our customers by keeping them happy.

4. **Project**: Work in small groups. Suppose you are working with a nonprofit organization or local government agency. Your group is responsible for recruiting new members or volunteers. Identify and analyze your target audience, and think about strategies you can use in the message. Choose an appropriate type of correspondence to encourage your target audience to join the organization or the agency.

Chapter 7

Workplace Correspondence (2): Job Application Materials and Reports

Contents

CASE 136

GLOSSARY 136

TASKS 138

- Understanding the rhetorical situation of job application 138
- Constructing an effective résumé 142
- Writing a persuasive cover letter 143
- Report 146

LANGUAGE FOCUS 163

GUIDELINES OR CHECKLISTS 165

- Résumé checklist 165
- Report checklist 166

EXERCISES 167

CASE

Sean Mayer is a senior student majoring in mechanical engineering. He has been accepted to a renowned graduate engineering program. Before he starts life in a new institution, he is planning to take an internship to sharpen his professional skills. But as he starts to look for information, Sean is confused. What is a good place to look for employment information? Is the information on the job ad reliable? What materials should he send to HR? Is his application package good enough? How should he talk to the interviewers? Should he dress nicely in an interview?

GLOSSARY

résumé/ˈrɛzjʊmeɪ/ a brief account of a person's education, qualifications, and previous occupations, typically sent with a job application; sometimes is called CV 个人简历

GPA/ʤi-pi-eɪ/ grade point average, referring to the average result of a student's grades and is usually calculated on a 7-point grading scale 绩点

work experience/wɜrk/ /ɪkˈspɪriəns/ the experience a person gains while working in a specific field or occupation（年轻人的）工作经历

leadership/ˈlidərˌʃɪp/ the state or position of being a leader 领导、组织相关经历，个人简历的一部分

honor/ˈɑnər/ 所获荣誉

CV/si-vi/ an abbreviation of "Curriculum Vitae" (Latin) 个人履历（源自拉丁语）

cover letter/ˈkʌvər/ /ˈlɛtər/ a written document usually submitted with a job application outlining the applicant's credentials and interest in the position 求职信

professionalism/prəˈfɛʃənəˌlɪzəm/ referring to the skill, good judgment, and polite behavior that is expected from a person who is trained to do a job well 专业性、专业精神与态度

ethics/ˈɛθɪks/ moral principles that govern a person's behavior or the conducting of an activity or an occupation 职业道德

report/rɪˈpɔrt/ an account given of a particular matter, especially in the form of an official document, after thorough investigation by an appointed person or body （正式的）报告

directive/dəˈrɛktɪv/ an official or authoritative instruction （正式的）指令

meeting minutes/ˈmitɪŋ/ /ˈmɪnəts/ instant written notes of a meeting. They typically describe the events of the meeting and may include a list of attendees, a statement of the issues considered by the participants, and related responses or decisions for the issues 会议纪要

front matter/frʌnt/ /ˈmætər/ the pages, such as the title page and preface, that precede the main text of a book or document （书或文档的）正文开始前的部分，也叫"前题"

back matter/bæk/ /ˈmætər/ the parts that appear after the main portion of the body text, including the afterword, index and bibliography（书或文档）正文后面的部分，包括后记、索引、文献列表等等

references/ˈrɛfərənsɪz/ the sources of information that have been used in the documents 引用文献

work cited/wɜrk/ /ˈsaɪtɪd/ generally means the same as references; referring to a list of the works that you referenced in the body of your paper 参考引用文献

bibliography/ˌbɪbliˈɑgrəfi/ a list of all of the sources you have used (whether referenced or not) in the process of constructing your document 参考文献（无论是否引用）

appendixes/əˈpɛndɪksɪz/ a section of subsidiary matter at the end of a book or technical document 附录，一般位于书或文档的末尾

glossary/ˈglɔsəri/ an alphabetical list of words relating to a specific subject or text, with explanations 词汇表、术语表

index/ˈɪndɛks/ an alphabetical list of names, subjects, etc. with reference to the pages on which they are mentioned, usually in a book or document（书或文档中的）索引表

Understanding the rhetorical situation of job application

Before writing your application materials, it might be useful to think about the context in which you are writing. The rhetorical situation of a job application includes the author, audience, the purpose of the materials, and the reasons why your audience read them.

Author

Of course you are the author. Nobody knows you better than you do. To create a job application package that serves your long-term career goals, the first step is to carefully evaluate your career goals and your qualifications. In this process, you identify your most important and strongest characteristics so you can develop a concise and convincing message about the value you can bring to the prospective employers.

Audience

The audience of your job application package is the prospective employers. They are making a huge investment when they hire you, and they only make this decision when they believe that you will meet their needs. Instead of sending out résumé everywhere, you should conduct a thorough job search and carefully analyze positions that are most compatible with your abilities and expectations. Read the job descriptions critically, identify key attributes the audience are looking for, and tailor your résumé to that expectation.

Another useful strategy to gain insight about the prospective employers is to contact them. Some job advertisements include contact information. You can contact the representative, express your interest, ask questions, and find out more about the company. In addition, if you know someone who is currently working in the company or worked there, you can get an insider perspective on the company.

Purpose

Depending on the type of position you are applying for, a job application package may contain multiple documents, including a résumé, a cover letter, a portfolio, and a follow-up letter. A résumé and a cover letter, generally speaking, are requested by most recruiters. See Table 1

Table 1 A brief comparison of résumé and cover letter

	Résumé	Cover letter
Purpose	to get an interview through demonstrating your qualifications	To make an explicit argument for why your skills and experience fit this position; to get an interview
Format	Consistent, easy to read, strategic use of text alignment, white space, and other document design elements	Business letter[1]
Structure	Usually contains name block, education, skills, work experience, and additional information (such as languages and extracurriculum activities)	Introduction—Body—Closing
Strategy	to summarize your experience; to list your most competitive qualification that relates to the job position	To elaborate on one or two skills that will be essential in this position and provide evidence

Professionalism and ethical issue

Use appropriate email address for your employment correspondence. Your résumé is your identity on the job market. What impression you want to give to your potential employer by using an email address like hellokitty@xxx.com? Is it professional looking? Your email address can be based on your name. For example, Sean's email could be s.mayer05@student.xyz.edu.

Please always keep your material truthful. Many employers use outside agencies to check references and experience; they automatically reject applicants with inaccurate or embellished résumés. Even if you have been hired, your employment might be terminated as well.

1 See Chapter 8.

Should job applicants use an agent or professional writer?

Résumé writing is not an easy task, and sometimes it could be quite stressful. Many job seekers resort to hiring a résumé writing service. Though a professional writer may seem trained in constructing a document, the downsides of using this type of service should be noted:

a. The writer doesn't have the same level of insight into your area of specialty as you do and doesn't fully understand your qualification and competitiveness.

b. The writing process is not as easy as you may expect; you will have to fill out an extensive form detailing all the requested information about your background and history; be ready to do lots of back-and-forth collaboration with your writer via email, phone, or Wechat.

c. The writer is not always as qualified as you may think; the current market of professional writing service is quite competitive. You probably will get a writer with a low rate—be careful, this is usually a red flag! More often than not, a low rate means the writer you get is not an experienced one. Are you willing to take the risk of letting someone less experienced and knowledgeable to write your package?

Résumé? CV?

Sometimes a recruiter ask you to send a CV. What is CV? What is the difference between a résumé and a CV? When should you use a résumé, and when is it better to use a CV?

Résumé is a French word for "summary." In contrast, curriculum vitae (CV) is Latin for "course of life." The major differences between a résumé and a curriculum vitae (CV) are focus, length, and what each is used for. While both are used in job applications, a résumé and a CV are not always interchangeable.

In many European countries, CV is used to describe all job application documents, including a résumé. In the United States and Canada, CV and résumé are sometimes used interchangeably. If you are not sure which kind of document to submit, you may ask the recruiter for clarification.

résumé	CV
Emphasizes skills	Emphasizes academic accomplishments
For a position in industry, non-profit, and public sector	For positions in academia, fellowships and grants
1-2 pages	Length depends upon experience and includes a complete list of publications, posters, and presentations
After 1 year of industry experience, lead with work experience and place education section at or near the end, depending upon qualifications	Always begins with education and can include name of advisor and dissertation title or summary (see examples). Also used for merit/tenure review and sabbatical leave

Constructing an effective résumé

Sean MAYER

s.mayer05@student.xyz.edu (1) 412-626-0809

EDUCATION

XYZ INSTITUTE OF TECHNOLOGY — Atlanta, GA
Bachelor of Science in Electrical and Computer Engineering GPA 3.74/4.00 — May 2020
Relevant coursework: power and control systems, communications and digital signal processing, computer engineering, networking, and robotics
Minor: Chinese Studies

SKILLS

Programming Languages: C/C++, Java, Python, System Verilog, MATLAB
Softwares: Git, MS Office, SolidWorks, Auto-CAD, Revit, AGi32, Cadence
Operating Systems: Aolle Macintosh OSX, MS Windows OS, Linux Ubuntu
Foreign Languages: Chinese (fluent), Spanish (conversational)

WORK EXPERIENCE

XYZ INSTITUTE OF TECHNOLOGY CYLAB — Atlanta, GA
Summer Research Software Intern — May-July 2019
- Accomplished autonomous flight using GPS Waypoints for A.R. Drone 2.0
- Assisted in human detection algorithms using thermal camera
- Contributed to long-range radio drone-to-drone communications

1

M.C. DEAN — Dulles, VA
Design Engineer Intern — June-July 2018
- Designed lighting circuits in 2 current projects using AutoDesk, AutoCAD and Revit; performed lighting calculations and analysis using AGi32
- Conducted over 20 pages of takeoffs for cost analysis
- Corrected over 30 pages of lighting diagrams and circuiting

2

GENERAL DYNAMICS INFORMATION TECHNOLOGY — Fairfax, VA
Technical Summer Intern — May-July 2017
- Developed desktop virtualization solutions for 2 government contracts
- Involved in pitching Email as a Service (EaaS) to 3 U.S. government agencies
- Performed a market analysis in the Federal Space for Cloud Technology and Desktop Virtualization

3

XYZ INSTITUTE OF TECHNOLOGY — Atlanta, GA
Computing Skills Course Instructor, Computer Education — Aug 2017-May 2018
- Instructed required computer skills course for incoming freshmen
- Worked with and evaluated students to promote maximum computing utilization

PROJECTS

Road Sign Recognition, Digital Communication & Signal Processing System Design — Atlanta, GA
- Designed and implemented a road sign recognition algorithm on a TI C67 DSP — Jan-May 2019
- Presented project at the Carnegie Mellon Undergraduate Research Symposium

Analog Circuit Design and Analysis, Electronic Devices and Analog Circuits — Atlanta, GA
- Participated in a series of hands-on labs to build and operate analog circuits — Aug-Dec 2019
- Gained experience in circuit and component modeling, amplifiers, filters and signal detection and processing

LEADERSHIP

Office of the Dean of Student Affairs — Atlanta, GA
- Planning Committee, Take Our Children to Work Day — Aug 2017-present
- Volunteer, Niteline Information Resource/ Crisis Control Phone Line — Aug 2018-present

XYZ MARATHON CHALLENGE — Atlanta, GA
Training Program Director — Jan-May 2018
- Developed training program for 25 charity runners.
- Raised over $25,000 to support Phillips House Association and The Decatur Food Project.

HORNORS & SCHOLARSHIPS

Dean's List, College of Engineering, Fall 2019
Sony Scholarship, 2018

A chronological résumé

A quick analysis of the sample résumé:

1. A simple but well formatted résumé. Readers can rapidly spot key abilities and qualifications.
2. Emphasizing accomplishments with action verbs. Also see Language focus.
3. Quantifying accomplishments. Numbers are strong.
4. Distinctive and consistent formatting for headings (BOLD CAPS, Left aligned), organizations (BOLD CAPS), positions (bold), and locations and dates (right aligned) make information easy to identify; Good readability.

Writing a persuasive cover letter

When applying for a position, you are very likely to be requested to submit a cover letter (or an application letter), even if it is a short email, with your résumé. In this case, the cover letter serves as a sales message in which you market your skills, qualifications, and knowledge pertaining to the position.

Address

Dear Mr. XYZ/Mrs. XYZ/ To whom it may concern:

[Opening paragraph]
Provide context and show your enthusiasm
1. Indicating how you hear about the position. Are you referred to a company by a current employee, a professor, or someone else? Be sure to mention it before you state your job objective.
2. Stating your job objective and mention the specific job title to avoid confusion.
e.g. *I am applying for the position of regional representative.*
3. Explaining why you are interested in this position, demonstrating your knowledge about the company, and relating your interest to some aspect of the company.
e.g. *This position interests me because it offers me an opportunity both to fulfill my career goal as a graphic designer and to promote the work of an internationally respected organization.*

[Body paragraphs]
In the second paragraph (and third, if necessary), demonstrate through examples how you are qualified for this position.
For each paragraph, limit it to just one basic point that is clearly stated in the topic sentence. (See sample cover letter.)

[Closing paragraph]
In the closing paragraph, request an interview. State again your interest in the position. Let your audience know how to reach to you by providing your cellphone number and email address.
e.g. I would appreciate an opportunity to interview with you at your earliest convenience. Should you have any questions about my qualification, please feel free to contact at (1) 412-626-0809 or email me at s.mayer05@student.xyz.edu.

Sincerely,
[your signature]

Type your full name
School of Electrical Engineering
XYZ Institute of Technology

A template of cover letter

Jason Smith
31 Connally Ave
Apartment #307
Atlanta, GA 30312
j.smith25@student.xyz.edu
(1)678-868-7572

February 28, 2019

High Museum of Art
1280 Peachtree St NE
Atlanta, GA 30309

Dear Hiring Manager:

I am a senior student majoring in graphic design at XYZ University. I have learned from your website that you have an open position for a summer internship for an undergraduate student in your Marketing Department. This position interests me greatly because it offers me an opportunity both to fulfill my career goals and to promote the work of an internationally respected arts institution.

I can bring strong up-to-date academic and practical skills in multimedia tools and graphic arts production, as indicated in my enclosed résumé. Further, I have project management experience at a local arts agency, where I was responsible for the development of client brochures, newsletters, and flyers. As the project manager, I coordinated the time lines, budgets, spending, and production with the clients and vendors.

My experience and contact in the Atlanta area media and entertainment community should help me make use of state-of-the-art design expertise. As you will see in my résumé, I have worked with some of the leading television, studio, and music production companies; that experience should help me develop marketing tools museum visitors and patrons will find attractive. For example, I helped design an upgrade of the CGI logo for ABC Pictures and was formally commented by the Director of Marketing.

If you would like to contact me to discuss the position and/or my qualifications, please feel free to contact at j.smith25@student.xyz.edu or (1)678-868-7572. Thank you for considering me for the listed position.

Sincerely,
Jason Smith

Jason Smith
School of Contemporary Design
XYZ University

Enclosure: Résumé
Portfolio: www.jsmith-atl.com

An effective cover letter

A quick analysis of the sample cover letter:

1. Opening the letter by referencing the source of information.
2. Continuing with a strong emphasis on recent work experience and accomplishments; adding detailed information to enrich the description of work experience.
3. Demonstrating awareness of the needs of the employer and how his skills match those needs.
4. Closing the letter with a request for an interview and mentioning contact information.

Report

Although the term report can be used to refer to various types of written communication, it usually is defined as an organized presentation of factual information to a specific audience.

The categorization of reports varies, depending on formality, purpose, length, scope, information type, and so on. In this section, several most used categorizations will be introduced: formal vs. informal reports, analytical vs. informational vs recommendation reports.

Informal vs. Formal Reports

Informal reports generally run from a few paragraphs to several pages, and they include essential parts of a report: an introduction, a body, conclusion, and recommendation if applicable. Due to their brevity and small scope, informal reports can be delivered as letters, emails, or memos attached to an email. Formal reports, on the other hand, usually grow out of projects or events that are large in scope and collaborative in nature.

A comparison of informal and formal reports

	Informal reports	Formal reports
Audience	• A specifc small group of readers, sometimes a single reader • Readers very likely are familiar with the subject of the report so you can make a decision on how much background information to provide and how much technical language you may use	• More than one audience • Audiences occupying various positions, having different levels of knowledge about the subject. • Not every audience will read the entire report; many will read the abstract, conclusion, and recommendation
Purpose	• Internal communication e.g., describing an incident, reporting the progress of ongoing projects, summarizing the results of an investigation.	• Internal or external communication, e.g., researching into latest development in a field, discussion of the feasibility of a new product or service, reviewing an organization's performance, etc.
Structure	• Introduction • Body • Conclusions and recommendations	• Front matter (title page, abstract, table of contents, list of figures, list of tables, foreword or preface, list of abbreviations and symbols) • Body (executive summary, introduction, texts/ the main body, conclusions, recommendations, references or works cited) • Back matter (bibliography, appendixes, glossary)
Subtypes	directive, field report, progress report, incident report, meeting minutes, etc. (See example below)	----
Deliverables	letters, emails, or memos attached to an email; printed or digital	Printed or digital

Several subtypes of informal reports

Date: May 22, 2018
To: Joanne Miro, Director of IT Maintenance
From Lisa Trang, IT Office

Subject: Recommendation on communication interface for internal use

The following report compares two software programs and makes recommendations about the suitable product for our company. I have researched software packages on the market by various suppliers and narrowed possible choices to two: DigitalSmart and IntelMediaCorp. The main criteria in selecting software were: cost, usability and user friendliness, and technical support.

1. Cost
DigitalSmart offers a more competitive price in comparison to other companies, including IntelMediaCorp. The one-time price is $28,000, and an annual user fee is $600 including installation, upgrades, and technical support. IntelMediaCorp's quote is slightly higher, and there is an additional fee for yearly upgrades. However, IntelMediaCorp does not charge an user fee. Please see table below:

	DigitalSmart	IntelMediaCorp
Price	$28,000	$29,200
Annual fee	$600	0
Upgrades	0	$480

2. Usability and user friendliness
Both companies sent me demos of their products. Some staff have tested them for usability and user friendliness, and they found that both products have good interface design and are easy to use. No extensive training is needed. DigitalSmart offers free software training with a three-year contract for their services. IntelMediaCorp provides manuals and training materials free of charge. The DigitalSmart product may require additional upgrading of the hardware in some of our offices.

3. Technical support
Both companies offer excellent technical support online and by telephone.

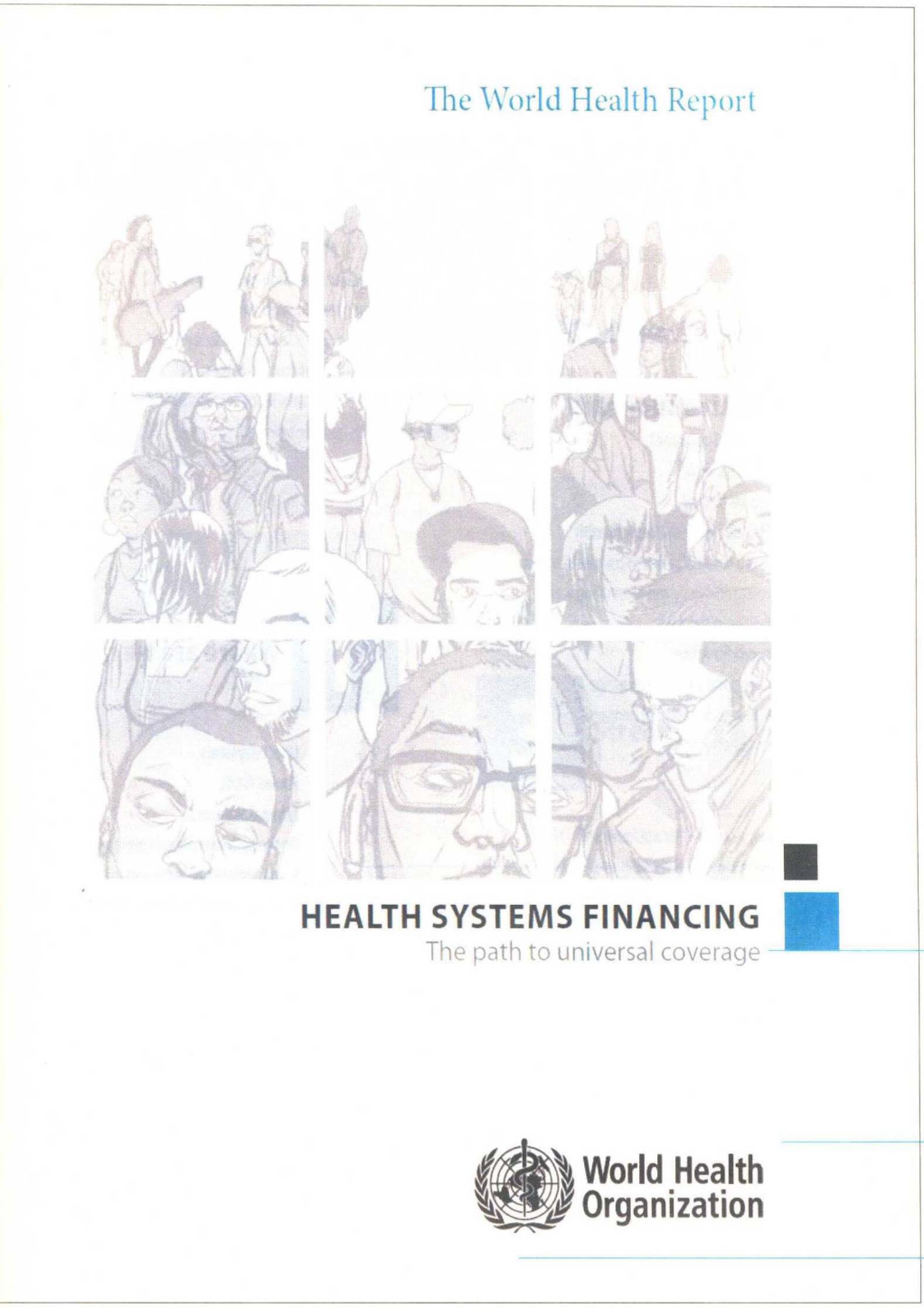
Conclusions and Recommendations
The DigitalSmart product is a more cost-effective choice in comparison to the IntelMediaCorp product. It meets our company's requirements and offers more flexibility by offering staff training and upgrades. The annual user fee raises the cost slightly but it seems to be worth it.

An informal report

A quick analysis of the sample informal report:

1. Using memo to deliver the informal report to someone inside the company;
2. An introductory paragraph giving an overview of the document;
3. Using a table to clearly present the comparison; easy for scanning, very reader friendly;
4. Ending with recommendations, serving the purpose of this report.

Below we use a WHO report as an example to illustrate how a formal report should be assembled.



(Source: https://apps.who.int/iris/rest/bitstreams/52792/retrieve)

Contents

vi **Message from the Director-General**

ix **Executive summary**

ix Why universal coverage?
x Where are we now?
x How do we fix this?
xi Raising sufficient resources for health
xiv Removing financial risks and barriers to access
xv Promoting efficiency and eliminating waste
xvii Inequalities in coverage
xix An agenda for action
xix Facilitating and supporting change
xxi Practical steps for external partners
xxi A message of hope

1 Where are we now?

5 Direct payments
6 Pooled funds
6 External assistance
7 On the path to universal coverage
8 Sustaining existing achievements
9 Universal coverage: the two prongs
12 Making the right choices
13 Moving forward

Major and subordinate headings differentiated by typeface and indentations

Page number for each section

Table of contents of a formal report

2 More money for health

21 Raising resources for health
22 But what does universal coverage cost?
23 Ensuring a fair share of total government spending on health
26 Diversifying domestic sources of revenue
27 Exploring sources of domestic financing for health
31 External financial assistance
33 Effect of economic downturn on development assistance
35 Conclusion

3 Strength in numbers

41 The problems with direct payments
44 Do exemptions from charges work?
45 The retreat from direct payments
47 Strength in numbers
49 Where and how to cover more people?
49 Focusing on the poor
51 Other barriers to access
52 Conclusion

Footer provides page number

Table of contents of a formal report

Though named differently, this section serves as the preface

Message from the Director-General

I commissioned this world health report in response to a need, expressed by rich and poor countries alike, for practical guidance on ways to finance health care. The objective was to transform the evidence, gathered from studies in a diversity of settings, into a menu of options for raising sufficient resources and removing financial barriers to access, especially for the poor. As indicated by the subtitle, the emphasis is firmly placed on moving towards universal coverage, a goal currently at the centre of debates about health service provision.

The need for guidance in this area has become all the more pressing at a time characterized by both economic downturn and rising health-care costs, as populations age, chronic diseases increase, and new and more expensive treatments become available. As this report rightly notes, growing public demand for access to high-quality, affordable care further increases the political pressure to make wise policy choices.

A preface usually is written by the author to announce the purpose, background, or scope of the report.

At a time when money is tight, my advice to countries is this: before looking for places to cut spending on health care, look first for opportunities to improve efficiency. All health systems, everywhere, could make better use of resources, whether through better procurement practices, broader use of generic products, better incentives for providers, or streamlined financing and administrative procedures.

This report estimates that from 20% to 40% of all health spending is currently wasted through inefficiency, and points to 10 specific areas where better policies and practices could increase the impact of expenditures, sometimes dramatically. Investing these resources more wisely can help countries move much closer to universal coverage without increasing spending.

Concerning the path to universal coverage, the report identifies continued reliance on direct payments, including user fees, as by far the greatest obstacle to progress. Abundant evidence shows that raising funds through required prepayment is the most efficient and equitable base for increasing population coverage. In effect,

vi

Preface of a formal report

such mechanisms mean that the rich subsidize the poor, and the healthy subsidize the sick. Experience shows this approach works best when prepayment comes from a large number of people, with subsequent pooling of funds to cover everyone's health-care costs.

No one in need of health care, whether curative or preventive, should risk financial ruin as a result.

As the evidence shows, countries do need stable and sufficient funds for health, but national wealth is not a prerequisite for moving closer to universal coverage. Countries with similar levels of health expenditure achieve strikingly different health outcomes from their investments. Policy decisions help explain much of this difference.

At the same time, no single mix of policy options will work well in every setting. As the report cautions, any effective strategy for health financing needs to be home-grown. Health systems are complex adaptive systems, and their different components can interact in unexpected ways. By covering failures and setbacks as well as successes, the report helps countries anticipate unwelcome surprises and avoid them. Trade-offs are inevitable, and decisions will need to strike the right balance between the proportion of the population covered, the range of services included, and the costs to be covered.

Yet despite these and other warnings, the overarching message is one of optimism. All countries, at all stages of development, can take immediate steps to move towards universal coverage and to maintain their achievements. Countries that adopt the right policies can achieve vastly improved service coverage and protection against financial risk for any given level of expenditure. It is my sincere wish that the practical experiences and advice set out in this report will guide policy-makers in the right direction. Striving for universal coverage is an admirable goal, and a feasible one – everywhere.

Dr Margaret Chan
Director-General
World Health Organization

Footer provides page number

vii

Preface of a formal report

An executive summary provides a more complete overview of the report than the preface or abstract.

Executive summary

Why universal coverage?

Promoting and protecting health is essential to human welfare and sustained economic and social development. This was recognized more than 30 years ago by the Alma-Ata Declaration signatories, who noted that Health for All would contribute both to a better quality of life and also to global peace and security.

Not surprisingly, people also rate health one of their highest priorities, in most countries behind only economic concerns, such as unemployment, low wages and a high cost of living (*1*, *2*). As a result, health frequently becomes a political issue as governments try to meet peoples' expectations.

Background and purpose

There are many ways to promote and sustain health. Some lie outside the confines of the health sector. The "circumstances in which people grow, live, work, and age" strongly influence how people live and die (*3*). Education, housing, food and employment all impact on health. Redressing inequalities in these will reduce inequalities in health.

But timely access to health services[a] – a mix of promotion, prevention, treatment and rehabilitation – is also critical. This cannot be achieved, except for a small minority of the population, without a well-functioning health financing system. It determines whether people can afford to use health services when they need them. It determines if the services exist.

Recognizing this, Member States of the World Health Organization (WHO) committed in 2005 to develop their health financing systems so that all people have access to services and do not suffer financial hardship paying for them (*4*). This goal was defined as universal coverage, sometimes called universal health coverage.

In striving for this goal, governments face three fundamental questions:

Numbered list makes texts easy to read

1. How is such a health system to be financed?
2. How can they protect people from the financial consequences of ill-health and paying for health services?
3. How can they encourage the optimum use of available resources?

They must also ensure coverage is equitable and establish reliable means to monitor and evaluate progress.

In this report, WHO outlines how countries can modify their financing systems to move more quickly towards universal coverage and to sustain those achievements. The report synthesizes new research and lessons learnt from experience into a set of possible actions that countries at all stages of development can consider and adapt to their own needs. It suggests ways the international community can support efforts in low-income countries to achieve universal coverage.

Executive summary of a formal report

Header provides report title

As the world grapples with economic slowdown, globalization of diseases as well as economies, and growing demands for chronic care that are linked partly to ageing populations, the need for universal health coverage, and a strategy for financing it, has never been greater.

Where are we now?

The World Health Assembly resolution 58.33 from 2005 says everyone should be able to access health services and not be subject to financial hardship in doing so. On both counts, the world is still a long way from universal coverage.

On the service coverage side, the proportion of births attended by a skilled health worker can be as low as 10% in some countries, for example, while it is close to 100% for countries with the lowest rates of maternal mortality. Within countries, similar variations exist. Rich women generally obtain similar levels of coverage, wherever they live, but the poor miss out. Women in the richest 20% of the population are up to 20 times more likely to have a birth attended by a skilled health worker than a poor woman.

Closing this coverage gap between rich and poor in 49 low-income countries would save the lives of more than 700 000 women between now and 2015 (5). In the same vein, rich children live longer than poor ones; closing the coverage gap for a range of services for children under the age of five, particularly routine immunization, would save more than 16 million lives.

But income is not the only factor influencing service coverage. In many settings, migrants, ethnic minorities and indigenous people use services less than other population groups, even though their needs may be greater.

The other side of the coin is that when people do use services, they often incur high, sometimes catastrophic costs in paying for their care.

In some countries, up to 11% of the population suffers this type of severe financial hardship each year, and up to 5% is forced into poverty. Globally, about 150 million people suffer financial catastrophe annually while 100 million are pushed below the poverty line.

The other financial penalty imposed on the ill (and often their carers) is lost income. In most countries, relatives can provide some form of financial support, however small, to family members during periods of illness. More formal financial transfers to protect those too ill to work are less common. Only one in five people in the world has broad-based social security protection that also includes cover for lost wages in the event of illness, and more than half the world's population lacks any type of formal social protection, according to the International Labour Organization (ILO). Only 5–10% of people are covered in sub-Saharan Africa and southern Asia, while in middle-income countries, coverage rates range from 20% to 60%.

Health financing is an important part of broader efforts to ensure social protection in health. As such, WHO is joint lead agency with the ILO in the United Nations initiative to help countries develop a comprehensive Social Protection Floor, which includes the type of financial risk protection discussed in this report and the broader aspects of income replacement and social support in the event of illness (6).

Footer provides page number

Executive summary of a formal report

Heading

1

Where are we now?

The accident happened on 7 October 2006. Narin Pintalakarn came off his motorcycle going into a bend. He struck a tree, his unprotected head taking the full force of the impact. Passing motorists found him some time later and took him to a nearby hospital. Doctors diagnosed severe head injury and referred him to the trauma centre, 65 km away, where the diagnosis was confirmed. A scan showed subdural haematoma with subfalcine and uncal herniation. Pintalakarn's skull had fractured in several places. His brain had bulged and shifted, and was still bleeding; the doctors decided to operate. He was wheeled into an emergency department where a surgeon removed part of his skull to relieve pressure. A blood clot was also removed. Five hours later, the patient was put on a respirator and taken to the intensive care unit where he stayed for 21 days. Thirty-nine days after being admitted to hospital, he had recovered sufficiently to be discharged.

What is remarkable about this story is not what it says about the power of modern medicine to repair a broken body; it is remarkable because the episode took place not in a country belonging to the Organisation for Economic Co-operation and Development (OECD), where annual per capita expenditure on health averages close to US$ 4000, but in Thailand, a country that spends US$ 136 per capita, just 3.7% of its gross domestic product (GDP) (*1*). Nor did the patient belong to the ruling elite, the type of person who – as this report shall show – tends to get good treatment wherever they live. Pintalakarn was a casual labourer, earning only US$ 5 a day.

"Thai legislation demands that all injured patients be taken care of with standard procedure no matter what their status," says Dr Witaya Chadbunchachai, the surgeon who carried out the craniotomy on Pintalakarn at the Khon Kaen Regional Hospital in the country's north-eastern province. According to Chadbunchachai, medical staff do not consider who is going to pay for treatment, however expensive it might be, because in Thailand, everyone's health-care costs are covered.

At a time when many countries, including major economic powers such as China and the United States of America, are reviewing the way they meet the health-care needs of their populations, universal health coverage – what is it, how much does it cost and how is it to be paid for? – dominates discussions on health service provision. In this world health report, we examine the issue from the financing perspective, and suggest ways in which all countries, rich and poor, can improve access to good quality health services without people experiencing financial hardship because they must pay for care (Box 1.1).

The three critical areas of health financing are:

Numbered list makes texts easy to read

1. raise sufficient money for health;
2. remove financial barriers to access and reduce financial risks of illness;
3. make better use of the available resources (Box 1.1 provides details).

Body of a formal report

The world health report
financing for universal coverage

Box 1.1. What a health financing system does: a technical explanation

Health financing is much more than a matter of raising money for health. It is also a matter of who is asked to pay, when they pay, and how the money raised is spent.

Revenue collection is what most people associate with health financing: the way money is raised to pay health system costs. Money is typically received from households, organizations or companies, and sometimes from contributors outside the country (called "external sources"). Resources can be collected through general or specific taxation; compulsory or voluntary health insurance contributions; direct out-of-pocket payments, such as user fees; and donations.

Pooling is the accumulation and management of financial resources to ensure that the financial risk of having to pay for health care is borne by all members of the pool and not by the individuals who fall ill. The main purpose of pooling is to spread the financial risk associated with the need to use health services. If funds are to be pooled, they have to be *prepaid*, before the illness occurs – through taxes and/or insurance, for example. Most health financing systems include an element of pooling funded by prepayment, combined with direct payments from individuals to service providers, sometimes called *cost-sharing*.

Purchasing is the process of paying for health services. There are three main ways to do this. One is for government to provide budgets directly to its own health service providers (integration of purchasing and provision) using general government revenues and, sometimes, insurance contributions. The second is for an institutionally separate purchasing agency (e.g. a health insurance fund or government authority) to purchase services on behalf of a population (a purchaser-provider split). The third is for individuals to pay a provider directly for services. Many countries use a combination.

Within these broad areas, health service providers can be paid in many different ways, discussed more fully in Chapter 4. Purchasing also includes deciding which services should be financed, including the mix between prevention, promotion, treatment and rehabilitation. This is addressed further in Chapter 2.

Labels can be misleading. Each country makes different choices about how to raise revenues, how to pool them and how to purchase services. The fact that several countries decide to raise part of the revenue for health from compulsory health insurance premiums does not mean that they all pool the funds in the same way. Some countries have a single pool – e.g. a national health insurance fund – while others have multiple, sometimes competing pools managed by private insurance companies. Even when countries have similar pooling systems, their choices about how to provide or purchase services vary considerably. Two systems based largely on health insurance may operate differently in how they pool funds and use them to ensure that people can access services; the same applies to two systems that are described as tax-based. This is why the traditional categorization of financing systems into tax-based and social health insurance – or Beveridge versus Bismarck – is no longer useful for policy-making.

It is much more important to consider the choices to be made at each step along the path, from raising revenues, to pooling them, to spending them. These are the choices that determine whether a financing system is going to be effective, efficient and equitable, choices that are described in the subsequent chapters.

People at the centre. In all of this technical work, it is important to remember that people are at the centre. On the one hand, they provide the funds required to pay for services. On the other, the only reason for raising these funds is to improve people's health and welfare. Health financing is a means to an end, not an end in itself.

Health services cost money. One way or another, doctors and nurses, medicines and hospitals have to be paid for. Today, global annual expenditure on health is about US$ 5.3 trillion (*1*). With the burden of communicable diseases remaining stubbornly high in some parts of the world, and the prevalence of noncommunicable diseases – heart disease, cancers and chronic conditions such as obesity – increasing everywhere, health costs can only continue to rise. This trend will be exacerbated by the more sophisticated medicines and procedures being developed to treat them.

It would seem logical, therefore, that richer countries are better able to provide affordable health services. Indeed, the countries that have come closest to achieving universal coverage do generally have more to spend on health. OECD countries, for example, represent only 18% of the global population but account for 86% of the world's health spending; few OECD countries spend less than US$ 2900 per person each year.

But it is not always the case that lower-income countries have less coverage. Thailand is a striking example of a country that has vastly improved service coverage and protection against the financial risks of ill health despite spending much less on health than higher-income countries. It has done this by changing the way it raises funds for health and moving away from direct payments, such as user fees (Box 1.2). This is perhaps the most crucial element of developing financing systems for universal coverage; many countries still rely too heavily on direct payments from individuals to health service providers to fund their health systems.

4

Footer provides page number

Body of a formal report

Header provides chapter title

evidence does exist suggests that the inequalities are even more pronounced in the standard of service provided. In other words, poor people in poor countries are not only largely excluded from these services, but when they do receive care, it is likely to be of a lower quality than that provided to richer people (*61*).

These broad indications offer a sobering picture, one in which millions of people, predominantly poor, cannot use the services they need, while millions more face severe financial difficulty as a result of paying for health services. Clearly, the reasons for low and unequal coverage do not all lie in the financing system, but we argue in this report that coverage could be considerably higher if there were additional funds, less reliance on direct payments to raise funds and more efficiency – all financing issues.

Several countries increase financial risk protection beyond that afforded by the health financing system by providing an element of financial security when people cannot work for health reasons – because they are sick or have had a baby. The International Labour Organization (ILO) collates information on the right to paid sick leave in the event of illness as well as on the right to paid maternity leave. In 2007, 145 countries provided the right to paid sick leave, although the duration of leave and income compensation differed markedly. Only 20% of those countries replaced 100% of the lost income, with the majority offering 50–75%. Most countries allow a month or more of paid sick leave each year for severe illness, but more than 40 limit payments to less than a month (*62*).

Most industrialized countries offer the right to paid maternity leave for formal sector employees, but the duration of leave and the nature of the payments also vary substantially. And even though there is a theoretical right to paid maternity leave, few low- and middle-income countries report any financial support for eligible women (Box 1.6).

Financial protection against work incapacity due to illness or pregnancy is generally available only to formal-sector workers. Typically in low-income countries, more than 50% of the working-age population works in the informal sector without access to income replacement at these times (*63*).

MLA style in-text citation

Although this report focuses on financial risk protection linked to the need to pay for health services, this is an important part of broader efforts to ensure social protection in health. As such, WHO is a joint sponsor with the ILO and an active participant in the United Nations initiative to help countries develop comprehensive Social Protection Floors. These include the type of financial risk protection discussed

Box 1.6. Financial risk protection and income replacement: maternity leave

The core element of maternity protection, which guarantees women a period of rest when a child is born (along with the means to support herself and her family and a guarantee of being able to resume work afterwards) is the cash benefit that substitutes the regular income of the mother during a defined period of pregnancy and after childbirth. The cash benefits do not usually replace prior income, but are nonetheless an important social protection measure without which pregnancy and childbirth could pose financial hardships for many families. Maternity leave and the income replacement system that comes with it can also have indirect health consequences; without these measures, women may feel compelled to return to work too quickly after childbirth, before it is medically advisable to do so.

Most industrialized countries allocate considerable resources for maternity leave. In 2007, Norway spent more than any other, allocating US$ 31 000 per baby, per year, for a total US$ 1.8 billion. In contrast most low- and middle-income countries report zero spending on maternal leave, despite the fact that several have enacted legislation guaranteeing it. This may be due to laws going unenforced but may also be explained by the fact that in some countries, maternity leave does not come with any income replacement element.

Source: International Labour Organization.

Source of information referenced

Body of a formal report

Header provides report title

in this report and the broader aspects of income replacement and social support in the event of illness (64).

Making the right choices

Subheading signals shift in topic

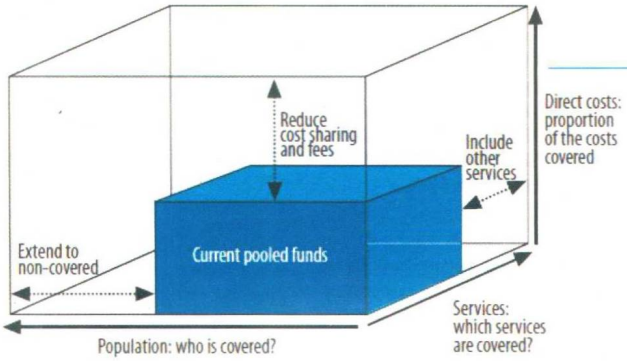
There is no single way to develop a financing system to achieve universal coverage. All countries must make choices and trade-offs, particularly in the way that pooled funds are used. It is a constant challenge to balance priorities: funds often remain scarce, yet people demand more and the technologies for improving health are constantly expanding. Such conflicts force policy-makers to make trade-offs in three core areas (Fig. 1.2): the proportion of the population to be covered; the range of services to be made available; and the proportion of the total costs to be met.

Cross-reference precedes figure

The box here labelled "current pooled funds" depicts the situation in a hypothetical country where about half the population is covered for about half the possible services, but where less than half of the cost of these services is met from pooled funds. To get closer to universal coverage, the country would need to extend coverage to more people, offer more services and/or pay a greater part of the cost from pooled funds.

In European countries with long-established social health protection, this "current pooled funds" box fills almost the entire space. But in none of the high-income countries that are commonly said to have achieved universal coverage is 100% of the population covered for 100% of the services that could be made available and for 100% of the cost, with no waiting lists. Each country fills the box in its own way, trading off services and the costs met from pooled funds. Waiting times for services may vary greatly from one country to another, some expensive services might not be provided and citizens may contribute a different proportion of the costs in the form of direct payments.

Fig. 1.2. **Three dimensions to consider when moving towards universal coverage**



Source: adapted from (21, 65).

Nevertheless, everyone in these countries has access to a set of services (prevention, promotion, treatment and rehabilitation) and nearly everyone is protected from severe financial risks thanks to prepayment and pooling of funds. The fundamentals are the same even if the specifics differ, shaped by the expectations of the population and the health providers, the political environment and the availability of funds.

Figure numbered and set off by white space above and below

Countries will travel different paths towards universal coverage, depending on where and how they start, and make different choices along the three axes outlined in Fig. 1.2. For example, in settings where all but the elite are currently

Footer provides page number

Body of a formal report

Header provides chapter title

performance-based budget support over a period of six years. Not everyone likes this kind of commitment because it ties up future aid budgets. That said, in the Accra Agenda for Action of 2008, OECD development assistance committee donors committed to providing recipient countries with information on their "rolling three- to five-year expenditure and/or implementation plans" – the beginning perhaps of longer-term commitments (59).

Heading

Conclusion

Countries need to adapt their financing systems continually to raise sufficient funds for their health systems. Many high-income countries are facing a decline in the proportion of their working-age population and having to consider alternatives to traditional sources of revenue in the form of income taxes and health insurance contributions from workers and their employers. In many lower-income countries, more people work in the informal than the formal sector, making it difficult to collect income taxes and wage-based health insurance contributions.

There are several options for raising additional funds for health, a list of which is provided in Table 2.1. Not all will apply to all countries, and the income-generating potential and political feasibility of those that do will vary by country. In some cases, however, the additional income to be derived from any one or more of these options could be substantial, possibly much more than current aid inflows. These innovative and additional mechanisms are not, however, the only option. Many governments, in rich and poor countries, still give a relatively low priority to health when allocating funds. It is important, therefore, to better equip the ministries of health to negotiate with ministries of finance and planning, as well as with international financial institutions. But the message of this chapter is that every country could do more domestically to raise additional funds for health.

Innovative financing should not be seen, however, as a substitute for ODA flows from donor nations. Calls for recipient countries to use external funds more transparently and efficiently are understandable. But such concerns should not stop richer countries keeping the promises they have made in Paris and Accra. Collective action that has led to the International Financing Facility for Immunization and to the Millennium Foundation has been invaluable in financing global public goods for health, but there is no need for countries to wait for more global collaboration before acting. If the governments of donor countries kept their current international aid promises, allocating funds in ways that supported country-led national health plans, the international community would already be well advanced towards meeting the 2015 MDGs. If, in addition, each donor country adopted just one of the innovative options described here and used the revenue to supplement ODA, they would be laying the foundations for sustained movement towards universal health coverage and improved health into the future. ■

Body of a formal report

Header provides report title

References

1. *NICE draft recommendation on the use of drugs for renal cancer.* National Institute for Health and Clinical Excellence, 2009 (http://www.nice.org.uk/newsroom/pressreleases/pressreleasearchive/PressReleases2009.jsp?domedia=1&mid=42007069-19B9-E0B5-D429BEDD12DFE74E, accessed 3 April 2010).
2. Kidney cancer patients denied life-saving drugs by NHS rationing body NICE. *Daily Mail,* 29 April 2009 (http://www.dailymail.co.uk/health/article-1174592/Kidney-cancer-patients-denied-life-saving-drugs-NHS-rationing-body-NICE.html, accessed 3 April 2010).
3. *NICE issues guidance on the use of other treatment options for renal cancer.* National Institute for Health and Clinical Excellence, 2009 (http://www.nice.org.uk/newsroom/pressreleases/pressreleasearchive/PressReleases2009.jsp?domedia=1&mid=4BAE772C-19B9-E0B5-D449E739CDCD7772, accessed 7 July 2010).
4. National Health Accounts [online database]. Geneva, World Health Organization (http://www.who.int/nha, accessed 4 May 2010).
5. Treerutkuarkul A, Treerutkuarkul A. Thailand: health care for all, at a price. *Bulletin of the World Health Organization,* 2010,88:84-85. doi:10.2471/BLT.10.010210 PMID:20428360
6. *Macroeconomics and health: investing in health for economic development.* Geneva, World Health Organization, 2001.
7. *Constraints to scaling up the health Millennium Development Goals: costing and financial gap analysis.* Geneva, World Health Organization, 2010 (Background document for the Taskforce on Innovative International Financing for Health Systems; http://www.internationalhealthpartnership.net//CMS_files/documents/working_group_1_technical_background_report_(world_health_organization)_EN.pdf, accessed 6 July 2010).
8. Durairaj V. *Fiscal space for health in resource-poor countries.* World health report 2010 background paper, no. 41 (http://www.who.int/healthsystems/topics/financing/healthreport/whr_background/en).
9. Missoni E, Solimano G. *Towards universal health coverage: the Chilean experience.* World health report 2010 background paper, no. 4 (http://www.who.int/healthsystems/topics/financing/healthreport/whr_background/en).
10. *Technical briefing on Millennium Development Goals.* Geneva, World Health Organization, 2010 (http://www.who.int/entity/gho/mdg/MDG_WHA2010.pdf, accessed 7 July 2010).
11. *World health statistics 2010.* Geneva, World Health Organization, 2010.
12. African Summit on HIV/AIDS, tuberculosis and other related infectious diseases. *Abuja Declaration on HIV/AIDS, Tuberculosis and Other Related Infectious Diseases, 24–27 April 2001.* Organisation of African Unity, 2001 (OAU/SPS/ABUJA/3).
13. Wibulpolprasert S, Thaiprayoon S. Thailand: good practice in expanding health care coverage. Lessons from reforms in a country in transition. In: Gottret P, Schieber GJ, Waters HR, eds. *Lessons from reforms in low- and middle-income countries. Good practices in health financing.* Washington, DC, The World Bank, 2008:355–384.
14. James CD, Dodd R, Nguyen K. *External aid and health spending in Viet Nam: additional or fungible?* World health report 2010 background paper, no. 40 (http://www.who.int/healthsystems/topics/financing/healthreport/whr_background/en).
15. Fernandes Antunes AF et al. *General budget support – has it benefited the health sector?* World health report 2010 background paper, no. 14 (http://www.who.int/healthsystems/topics/financing/healthreport/whr_background/en).
16. Kaddar M, Furrer E. Are current debt relief initiatives an option for scaling up health financing in beneficiary countries? *Bulletin of the World Health Organization,* 2008,86:877-883. doi:10.2471/BLT.08.053686 PMID:19030694
17. Gordon R, Li W. Tax structures in developing countries: many puzzles and a possible explanation. *Journal of Public Economics,* 2009,93:855-866. doi:10.1016/j.jpubeco.2009.04.001
18. Brondolo J et al. *Tax administration reform and fiscal adjustment: the case of Indonesia (2001–07).* Washington, DC, International Monetary Fund, 2008 (IMF Working Paper WP/08/129; http://www.imf.org/external/pubs/ft/wp/2008/wp08129.pdf, accessed 09 July, 2010).
19. *Promoting transparency and exchange of information for tax purposes.* Paris, Organisation for Economic Co-operation and Development, 2010 (http://www.oecd.org/dataoecd/32/45/43757434.pdf, accessed 7 July 2010).
20. Cummings RG et al. Tax morale affects tax compliance: evidence from surveys and an artefactual field experiment. *Journal of Economic Behavior & Organization,* 2009,70:447-457. doi:10.1016/j.jebo.2008.02.010
21. Tsounta E. *Universal health care 101: lessons for the Eastern Caribbean and beyond.* Washington, DC, International Monetary Fund, 2009 (IMF Working Paper WP/09/61; http://www.imf.org/external/pubs/ft/wp/2009/wp0961.pdf, accessed 5 July 2010).

MLA citation style

Footer provides page number

Body of a formal report

An index is an alphabetical list of all the major topics and subtopics found in the report. It lists all the pages where a topic can be found and helps readers locate information quickly and easily. Compile an index when the final manuscript is completed.

[INDEX]

[A]

Abuja Declaration (2001) xii, 25
Access to health services, financial 9–11
  barriers to x, 41–42, 45, 51–52
  removing barriers xiv–xvi, 44–51, 52, 53, 87–88
  situation analysis 92–93
  see also Coverage, health care
Accommodation costs 51–52, 88
Accra Agenda for Action (2008) xxi, 7, 35
Africa, sub-Saharan xii–xiii, 26, 46, 66, 68
Ageing, population 23, 27
Aid, international see Development assistance
Air-ticket levy 27, 28
Airport departure tax 29
Alcohol
  control 71
  excise taxes xiii, 29, 30–31
Alma Ata Declaration ix, 13
Antibiotics 62, 65
Artesunate 64
Australia 29, 30, 71, 79

[B]

Bamako Initiative (1987) 44
Bangladesh 48, 94
Bank account transaction tax 29
Bankruptcy, personal 9
Birth attendants, skilled x, 10, 61, 62, 78–79
Bonds, financial
  diaspora xiii, 29
  guaranteed by donor countries 28, 100
Bonus incentive schemes 75
Botswana 27
Branded medicines 62–64
Brazil 29, 67
Burundi 41, 44

[C]

Caesarean section 73, 74
Cambodia xi, 44–45
Capitation xvii, 74
Case-based payments xvii, 74–75
Catastrophic health spending x, 5, 9, 41–42, 43, 46
Cervical cancer 71
Checklists 68
Child health care 44, 75–76
Chile 24, 27
China 7, 101
Ciprofloxacin 62, 64
Co-payments 5, 44, 74
Commission on Macroeconomics and Health 22
Commission on Social Determinants of Health 13, 79
Complex adaptive systems 13
Computed tomography (CT) scanners 65
Conditional cash transfers (CCTs) xvi, 52, 88
Constraint assessment 94–95
Corporations, large 26, 29, 30
Corruption 61, 63, 69
Cost-containment 44, 62
Cost-effectiveness 69–70, 71, 75
Cost-sharing xiv, 4, 5, 74
Counterfeit medicines 63, 64
Coverage, health care
  inequalities x, xviii, 9–10, 11
  monitoring 98, 99
  specific population sectors 49
  three dimensions in expanding xv–xvi, 12
  universal see Universal coverage
Currency transaction levy xiii, 28, 29
Czech Republic 49

[D]

Deductibles 5
Democratic Republic of the Congo 43
Development assistance (international aid) xiii, xxi, 31–35
  donors see Donors, international
  fragmented delivery 78, 101
  predictability 34–35, 100
  see also External assistance
Diagnostic-related groups (DRGs) xvii–xviii, 74–75
Diaspora bonds xiii, 29
Diphtheria–tetanus–pertussis vaccine (DPT3) 10, 78–79
Direct payments (out-of-pocket payments) xi, 4, 5, 52–53
  abolishing/reducing xiv, 7–8, 45–47, 53, 87
  additional health-care costs 51–52
  alternative resources xiv, 46–47
  as cost-containment measure 44
  exemptions from 44–45
  financial hardship due to x, 5, 9, 41–42
  over-servicing risk 73–75, 90
  percent of health expenditure 42, 43, 53
  prevalence 41, 42
  problems with 5, 41–44
  unofficial (informal) 42, 45, 46
Donors, international 6–7, 25–26
  agenda for xxi, 99–101
  failure to meet commitments xiii, 31–32, 33, 100
  guaranteed bonds 28, 100
  inefficiencies created by 66, 101
Drug-abuse programmes 78

[E]

Economic downturn/recession 33, 43–44
Efficiency xi, xvi–xviii, 61–80, 96, 97

Footer provides page number

Index of a formal report

LANGUAGE FOCUS

Action verbs

Action verbs are words that express an action. Compared with weak and passive verbs, action verbs can highlight your skills, experience, and accomplishments. They are specific, clarify your contributions and bring a confident tone to your résumé, and hopefully increase your chances of capturing the attention of an employer and move forward to the next step in the hiring process.

Here are action verbs that you can use in your résumé.

LEADERSHIP

Accomplished	Achieved	Administered	Analyzed	Assigned	Attained	Chaired	Consolidated
Contracted	Coordinated	Delegated	Developed	Directed	Earned	Evaluated	Executed
Handled	Headed	Impacted	Improved	Increased	Led	Mastered	Orchestrated
Organized	Oversaw	Planned	Predicted	Prioritized	Produced	Proved	Recommended
Regulated	Reorganized	Reviewed	Scheduled	Spearheaded	Strengthened	Supervised	Surpassed

COMMUNICATION

Addressed	Arbitrated	Arranged	Authored	Collaborated	Convinced	Corresponded	Delivered
Developed	Directed	Documented	Drafted	Edited	Energized	Enlisted	Formulated
Influenced	Interpreted	Lectured	Liaised	Mediated	Moderated	Negotiated	Persuaded
Presented	Promoted	Publicized	Reconciled	Recruited	Reported	Rewrote	Spoke
Suggested	Synthesized	Translated	Verbalized	Wrote			

RESEARCH

Clarified	Collected	Concluded	Conducted	Constructed	Critiqued	Derived	Determined
Diagnosed	Discovered	Evaluated	Examined	Extracted	Formed	Identified	Inspected
Interpreted	Interviewed	Investigated	Modeled	Organized	Resolved	Reviewed	Summarized
Surveyed	Systematized	Tested					

TECHNICAL

Assembled	Built	Calculated	Computed	Designed	Devised	Engineered	Fabricated
Installed	Maintained	Operated	Optimized	Overhauled	Programmed	Remodeled	Repaired
Solved	Standardized	Streamlined	Upgraded				

TEACHING

Adapted	Advised	Clarified	Coached	Communicated	Coordinated	Demystified	Developed
Enabled	Encouraged	Evaluated	Explained	Facilitated	Guided	Informed	Instructed
Persuaded	Set Goals	Stimulated	Studied	Taught	Trained		

QUANTITATIVE							
Administered	Allocated	Analyzed	Appraised	Audited	Balanced	Budgeted	Calculated
Computed	Developed	Forecasted	Managed	Marketed	Maximized	Minimized	Planned
Projected	Researched						

CREATIVE							
Acted	Composed	Conceived	Conceptualized	Created	Customized	Designed	Developed
Directed	Established	Fashioned	Founded	Illustrated	Initiated	Instituted	Integrated
Introduced	Invented	Originated	Performed	Planned	Published	Redesigned	Revised
Revitalized	Shaped	Visualized					

HELPING							
Assessed	Assisted	Clarified	Coached	Counseled	Demonstrated	Diagnosed	Educated
Enhanced	Expedited	Facilitated	Familiarized	Guided	Motivated	Participated	Proposed
Provided	Referred	Rehabilitated	Represented	Served	Supported		

ORGANIZATIONAL							
Approved	Accelerated	Added	Arranged	Broadened	Cataloged	Centralized	Changed
Classified	Collected	Compiled	Completed	Controlled	Defined	Dispatched	Executed
Expanded	Gained	Gathered	Generated	Implemented	Inspected	Launched	Monitored
Operated	Organized	Prepared	Processed	Purchased	Recorded	Reduced	Reinforced
Retrieved	Screened	Selected	Simplified	Sold	Specified	Steered	Structured
Systematized	Tabulated	Unified	Updated	Utilized	Validated	Verified	

How to say "thank you" in a different way?

If your goal is simply to bring a touch of warmth into your message, a "thank you" may suffice, but if you really want to express your thanks, "thank you" probably won't be enough.

"Thank you very much" has been a long-time go-to for expressing thanks, but with its formal tone it's not always the best choice for conveying feelings in a personal way. "Thank you so much" has become a popular phrase for email sign-offs and to express gratitude. It's colloquial, personal, and sincere.

While your go-to may always be "thank you so much" or "thank you very much," if you're looking to branch out and explore other meaningful ways of saying "thank you" in your writing, we have some suggestions to get you started:

- Thank you for all your hard work on this.
- Thanks again! We couldn't have pulled this off without you
- I'm so thankful for everything you bring to the table.
- Thanks a million/a bunch/a ton. (Use this fun phrase with peers you have a close relationship with)

- Many thanks!
- I truly appreciate your hard work.
- Please accept my deepest thanks.
- I can't thank you enough.
- (I'm) Grateful for your support.

GUIDELINES OR CHECKLISTS

Résumé checklist

Contact Information

□ address, current and permanent (if necessary)

□ telephone number(s) where you can be reached 9-5

Education and Training

□ highest level of attainment is listed first; work from most current degree; include type of degree

□ name of university, location of university, date of graduation or anticipated date

□ list other degrees, relevant higher education coursework, continuing professional education or training courses, and study abroad

□ major, minor, or areas of concentration

□ omit high school if you have completed more than two years of college unless referencing impressive honors or relevant extracurricular activities

□ relevant courses, papers, and projects; include paper or project titles

□ GPA, honors, awards, scholarships

Skills

□ computer skills: software applications, languages, hardware, operating systems

□ language skills: specific level of fluency and ability to read and write, e.g., "basic," "intermediate," or "advanced"

Employment Experience

□ Include all paid, volunteer, intern, or cooperative education experiences relevant to your objective. Start with most recent experience if using chronological format.

□ title held, the name of the organization, city, state/province, or country (if abroad)

□ dates position held; indicate transferable skills and abilities used on the job

□ accomplishments on your job; what problems did you face? solutions found?

□ contributions to the organization, i.e., ways your work helped increase profit, membership publicity, funding, motivation, efficiency, productivity, quality; saved time or money; improved programs, management, communication, information flow, etc.

□ quantitative or qualitative indicators that describe the results of your contributions or accomplishments, i.e., "increased sales by $80,000"; "reduced staff turnover by 20%"; learning or training that took place on the job that is relevant to your job objective

□ describe accomplishments in jargon of the field

Report Checklist

□ Is the title concise, descriptive, and original?

□ Is the abstract short, including key results?

□ Is the report separated into the appropriate subsections?

□ Does the abstract concisely highlight the report's major points?

□ Does the executive summary describe the purpose, major findings, conclusion, recommendations, and methodology used to reach the findings? Can it be read independently of the report?

□ Does the introduction state the purpose, the scope of the document? How you plan to present and discuss findings, and how the topic will be organized?

□ Are these subsections clear and appropriately labelled?

□ Do all figures and tables have captions and labels? Are all the figures clear?

□ Does the body of the report enable the primary audience to understand your findings, conclusions, and recommendations?

□ Do the conclusions and recommendations generate logically from the report's findings?

□ Does the report contain a large amount of technical terms? Are all the technical terms defined clearly in the glossary section?

□ Are the indexed terms cover key topics in the report? Are the indexed items alphabetically arranged?

1. Pay a visit to your school's career development office or browse their web page. Obtain a sample résumé from the office. Annotate and write a critical analysis of the résumé. Point out its strong points and how it can be improved in content, organization, and visual design.
2. Following the instruction in this chapter, please construct a résumé in response to an advertisement of a summer internship position. Send your résumé as an email attachment to your instructor.
3. P.A. Fitness is planning to open a new location in the college town. They hire a business consulting agency to research the feasibility of their business plan. Suppose you are on the consulting team and are in charge of writing the final report.
   a. Prepare an informal report that defines the scope of the final report, covering benefits, risks, and costs of establishing a new location in college town. Send this informal report to your supervisor via email.
   b. Considering your audience and purpose, what elements you would need to include in the final report?

Chapter 8

Workplace Correspondence (3): Proposals

Contents

CASE 170

GLOSSARY 170

TASKS 171

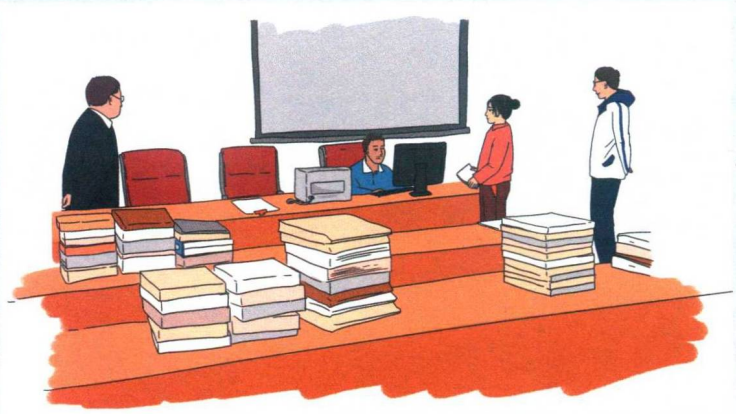
- What proposals do? 171
- Proposal structure 172
- Format of proposals 173
- Types of proposals 174

LANGUAGE FOCUS 187

GUIDELINES OR CHECKLISTS 188

EXERCISES 189

CASE



Abbey works full time at a charitable organization, and her main job is to write proposals to win financial support. While some of her organization's financial support comes from private donors, most of it is generated from grants. She mainly writes for requesting grant for funding for their proposed activities. As each proposal must compete with proposals from similar institutions, she has to work hard to make her proposal competitive.

GLOSSARY

proposal /prəˈpoʊzəl/ a formal suggestion or plan; the act of making a suggestion 提议；建议；动议

format /ˈfɔrˌmæt/ the general arrangement, plan, design, etc. of something 总体安排；计划；设计

grant /grænt/ a sum of money that is given by the government or by another organization to be used for a particular purpose（政府、机构的）拨款

literature /ˈlɪtərəʧər/ pieces of writing or printed information on a particular subject（某学科的）文献、著作、资料

qualification /ˌkwɑləfəˈkeɪʃən/ an exam that you have passed or a course of study that you have successfully completed（通过考试或学习课程取得的）资格

academic/educational/professional qualifications 学术 / 教育 / 专业 / 职业资历

internal /ɪnˈtɜrnəl/ connected with the inside of something 内部的；里面的

internal proposal /ɪnˈtɜrnəl/ /prəˈpoʊzəl/ 内部提案

external proposal /ɪkˈstɜrnəl/ /prəˈpoʊzəl/ 外部提案

solicit /səˈlɪsɪt/ to ask somebody for something, such as support, money and information; to try to get something or persuade somebody to do something 索求，请求……给予（援助、钱或信息）

solicited proposal /səˈlɪsɪtɪd/ /prəˈpoʊzəl/ 招标提案

unsolicited proposal /ˌʌnsəˈlɪsɪtɪd/ /prəˈpoʊzəl/ 非招标提案

deliverable /dɪˈlɪvərəbəl/ (usually pl.) a product that a company promises to have ready for a customer 应交付的产品

panel /ˈpænəl/ a group of specialists who give their advice or opinion about something; a group of people who discuss topics of interest on television or radio 专家咨询组；（广播、电视上的）讨论小组

a panel of experts 专家组

a panel discussion 专家小组讨论

roundtable /ˈraʊndˌteɪbəl/ (of discussions, meetings, etc. 讨论、会议等) at which everyone is equal and has the same rights 圆桌的；参与者权利均等的：

roundtable talks 圆桌会谈

For someone like Abbey who needs to write proposals but has no background or formal training in proposal writing, this chapter will be of some help. You will learn structure and format of proposal and how to make your proposal more persuasive. And you will learn some major types of proposals.

What proposals do?

A proposal is a written document to persuade the readers to approve, fund, or grant permission to do the proposed project. If you are a student working for your degree, you might write a

proposal to your supervisor for permission to conduct a study. If you are the director of human resources, you might write a proposal to the firm's vice president to request funding for a training program for employees. If you are an independent consultant, you might write to a firm for providing a project.

Whatever project you propose, you need to make the proposal persuasive to make reviewers believe that your plan is worthwhile, or the service or product you provide is useful. Then, how? Before accepting a particular proposal, reviewers look for persuasive answers to these basic questions:

- What is the problem?
- Why should we spend time, money, and effort to solve it?
- What is your plan to solve it?
- What benefits can you offer?
- Can you deliver what you promise?
- When will you complete the work?
- How much will it cost?

To make your proposal a winning one, you are suggested to:

- Study your audience and the situation.

  Getting to know the need of your audience and the current situation allows you to write a more convincing proposal.

- Collect as many resources as you can to support your proposed plan.

  If you can find appropriate literature, do not hesitate to cite it.

- Be accurate in any data you provided.

  If your reader discovers a mistake, you lose credibility.

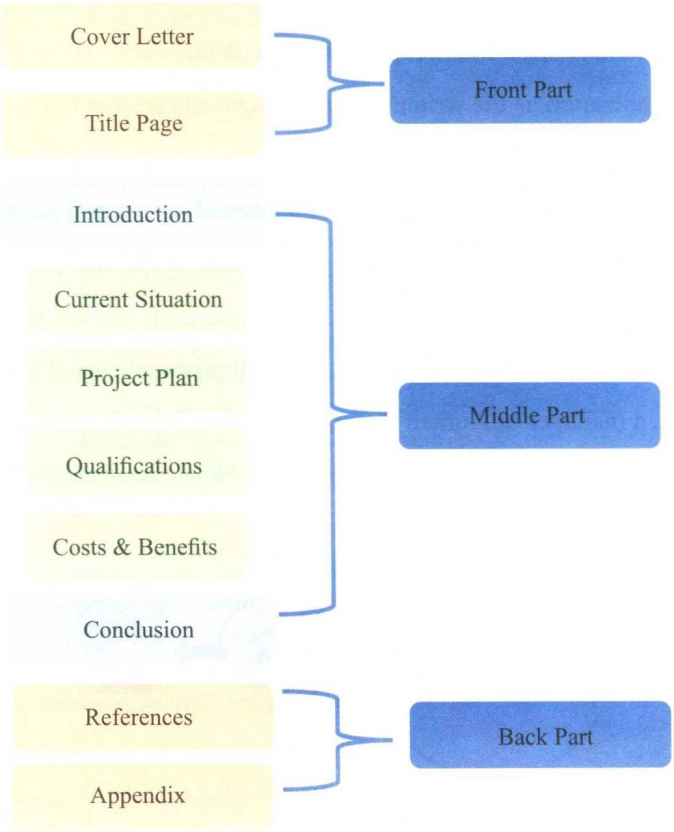
- Be realistic in your planning.

  Do not propose to complete a task in one week to make a sale when you honestly believe that it will take a month.

Proposal structure

Here is the basic structure for proposals, though you may alter the structure to meet the needs of your proposal's subject, purpose, readers and context of use.

The basic structure includes Front Part, Middle Part and Back Part. Front Part may include Cover Letter and Title Page. Middle part includes Introduction, Main Body and Conclusion. Main Body presents Current Situation, Project Plan, Qualifications, and Costs and Benefits. Back Part may include References and Appendix. Graphics, such as pictures, tables, and graphs, can be used throughout the body of the proposal.



Format of proposals

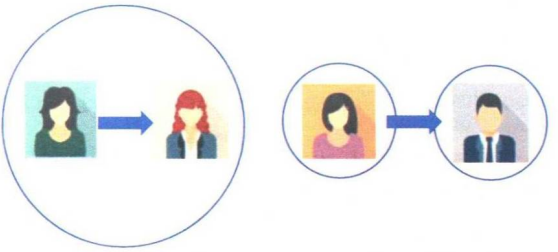
Some proposals require a standard format, whereas others are more flexible. Proposals vary substantially in length and format. They range from a page or two to several hundred pages. Often the scope of the proposal determines its format. A request for a small amount of fund might be proposed by e-mail or a brief memo. A request for a large amount, however, is likely to be proposed in a formal document such as a report.

Types of proposals

Internal proposals

In this section, we will be discussing features of internal and external proposals, and solicited and unsolicited proposals. Proposals are written by proposal writers to proposal readers. Depending on the relationship between writers and readers, proposals can be categorized to internal ones and externals ones. Internal proposals are documents written for readers who are within the same organization as the writer. External proposals are written for readers who are working in another organization or entity.

Please take a quick look at this proposal. Is it an internal or external proposal? Judging from the heads that this proposal is written by a team leader to the vice president of operations in the same company, it is easy to conclude that the sample is an internal proposals. While external proposal often sell products or services, internal proposals usually offer ideas or plans. For example, a manager of Human Resources write to Vice President for requesting funding for the training program of the new employees. Here, Sarah is proposing a good idea for cutting costs.



Internal Proposal External Proposal

The sample proposal is written in memo format. Internal proposal is often written in informal forms, such as memo and letter. From the background information stated at the beginning, we know that this proposal is a **solicited** one: each project team is asked to come up with one good idea for cutting costs. A solicited proposal is written in response to a request from the perspective reader, or requirements for proposal (RFP). An **unsolicited** proposal, however, is written with no RFP, and you need to make sure that the prospective customer has a need for ideas.

Then current situation is clearly described, and a project plan for the readers' consideration is offered and described step by step. After that, the proposal concludes by discussing costs and benefits of the plan.

JumperCom

Date: April 11, 2014
To: Jim Trujillo, VP of Operations
From: Sarah Voss, Lambda Engineering Team Leader
Subject: Cutting Costs

At our meeting on April 4th, you asked each project team to come up with one good idea for cutting costs. Our team met on April 7th to kick around some ideas. At this meeting we decided that the best way to cut costs is to expand and enhance the company's website.

Our Current Website

When we developed the current website in Spring 2008, it served our company's purposes quite well. For its time, the website was attractive and interactive.

Six years later, our website is no longer cutting edge—it's obsolete. The website

- looks antiquated, making our company seem out of touch
- does not address our customers' questions about current products
- does not address our customers' needs for product documentation
- is not a tool that our salespeople can use to provide answers and documentation to the customers
- does not answer frequently asked questions, forcing clients to call our toll-free customer service lines for answers to simple questions.

As a result, our outdated website is causing a few important problems. First, we are likely losing sales because our customers don't see us as cutting edge. Second, we are wasting hundreds of thousands of dollars on printed documents that the customers throw away after a glance. And, third, we are unnecessarily spending many more thousands of dollars on customer service representatives and toll-free phone lines. A conservative estimate suggests that our outdated website could be costing us around $400,000 each year.

Renovating the website

We believe a good way to cut costs and improve customer relations is to renovate the website. We envision a fully interactive site that customers can use to find answers to their questions, check on prices, and communicate with our service personnel. Meanwhile, our sales staff can use the website to discuss our products with clients. Instead of lugging around printed documents, our salespeople would use their tablet computers to show products or make presentations.

Renovating the site will require four major steps:

Step One: Study the Potential Uses of Our Website

With a consultant, we should study how our website might be better used by customers and salespeople. The consultant would survey our clients and salespeople to determine what kind of website would be most useful to them. The consultant would then develop a design for the website.

Step Two: Hire a Professional Web Designer to Renovate the Site

We should hire a professional web designer to implement our design, because modern websites are rather complex. A professional would provide us with an efficient, well-organized website that would include all the functions we are seeking.

Step Three: Train One of Our Employees to Be a Webmaster

• We should hire or retrain one of our employees to be the webmaster of the site. We need someone who is working on the site daily and making regular updates. Being the webmaster for the site should be this employee's job description.

Step Four: User-Test the New Website with Our Customers and Salespeople

Once we have created a new version of the website, we should user-test it with our customers and salespeople. Perhaps we could pay some of our customers to try out the site and show us where it could be improved. Our salespeople will certainly give us plenty of feedback.
At the end of this process, we would have a fully functioning website that would save us money almost immediately.

Costs and Benefits of Our Idea

Renovating the website would have many advantages:

- The new website will save us printing costs. We estimate that the printing costs at our company could be sliced in half— perhaps more—because our customers would be able to download our documents directly from the website, rather than ask us to send these documents to them. That's a potential saving of $300,000.
- The new website will provide better service to our customers. Currently, our customers go to the website first when they have questions. By providing more information in an interactive format, we can cut down dramatically on calls to our customer service center. We could save up to $120,000 in personnel costs and long-distance charges.
- Our sales staff will find the new website a useful tool when they have questions. When products change, salespeople will immediately see those changes reflected on the website. As a result, more sales might be generated because product information will be immediately available online.

A quick estimate shows that a website renovation would cost us about $40,000. We would also need to shift the current webmaster's responsibilities from part time to full time, costing us about $20,000 per year more. The savings, though, are obvious. For an initial investment of $60,000 and a yearly investment of $20,000 thereafter, we will minimally save about $400,000 a year.

Thank you for giving us this opportunity to present our ideas. If you would like to talk with us about this proposal, please call me at 555-1204, or e-mail me at sarahv@jumpercom.net.

[Source: *Pearson Technical Communication Today* (5th edition)]

Business proposals

Business proposals are documents used to offer specific goods or services at a defined cost. They are typically used by supportive enterprises that offer things other businesses need to operate and grow. In most cases, business proposals are external ones.

The proposal is submitted by Shania Baker, the owner of Baker Consulting, to propose conducting a guest satisfaction analysis for the Prestigio Hotel & Resort. Shania knew that the Prestigio marketing team relies on a third party to conduct customer satisfaction research annually for the neutral and objective results. This proposal is still a solicited one.

Then when we take a close look at this proposal, we can see there is an executive summary at the front, which suggests a formal proposal. The executive summary provides the most essential points from the proposal. Then the Current Situation describes the basic challenges that need to be addressed and solved. The Specific Objectives provides clear statements about outcomes of the proposed work. The Deliverables describes the items and services that will be provided. The Timeline clearly states when key activities will occur and when deliverables are due. The Pricing and Payment Plan states the pricing for products or services and expectations for payment.

Proposal to Conduct Guest Satisfaction Survey

for the Prestigio Hotel and Resort
Submitted by Shania Baker, Baker Consulting
October 1, 2016

Executive Summary

Baker Consulting proposes conducting a guest satisfaction analysis for the Prestigio Hotel and Resort. Baker Consulting will provide the following: (1) design and administration of a guest satisfaction survey; (2) a written guest satisfaction report; and (3) a guest satisfaction briefing to the marketing team. Prior to conducting the survey, the Prestigio Hotel and Resort will provide an email list of recent conference attendees and other requested information. The proposed price is $5,000, which includes a $2,000 up-front fee prior to conducting the guest satisfaction survey and a $3,000 final payment once the final guest satisfaction report is completed and delivered.

Current Situation

Guest satisfaction has always been the foundation for repeat business at the Prestigio. With so many online reviews of hotels readily available to meeting planners, achieving high guest satisfaction ratings is more important now than ever. Since 2010, the Prestigio has evaluated guest satisfaction and future

intentions among conference attendees with an annual survey to help determine priorities in improving guest satisfaction. In the past four years, the Prestigio has evaluated conference attendees' views in the following areas: overall satisfaction, intent to return, intent to recommend, conference meals, meeting rooms, and staff and service.

Past surveys of guest satisfaction have not addressed several areas of interest to the Prestigio: (1)guests' views of Internet pricing and the business center and (2) guests' actual use of conference services and amenities. Also, prior analysis of guest satisfaction has not differentiated guest satisfaction by gender and income.

Specific Objectives

1. Conduct a survey of conference attendees in the following areas:
   A. Satisfaction with conference services and amenities
   B. Actual use of services and amenities by conference guests
   C. Repeat business indicators: overall satisfaction, intent to return, and intent to recommend

2. Complete a guest satisfaction report:
   A. Provide complete analysis of each survey area
   B. Analyze based on income level and gender
   C. Provide realistic recommendations

3. Provide a guest satisfaction briefing to the marketing team

Deliverables overview

Baker Consulting will provide the following deliverables:
1. A guest satisfaction briefing and discussion. Baker Consulting will provide a written report, a 2-hour presentation and discussion, and a digital Tile with raw data from completed surveys.
2. A written guest satisfaction analysis. The report will include all survey findings. The report will be roughly ten pages.
3. Raw data from the online survey. Baker Consulting will provide a spreadsheet with all original survey responses.

The Prestigio Hotel and Resort will provide the following:
1. Two meetings between Baker Consulting and Prestigio Hotel and Resort to provide needed information for the research
2. Email addresses to conference attendees during 2016

Timeline

Date to Complete	Activity
November 15	Kick-off meeting at Baker Consulting office with the Prestigio marketing team(estimate: 1-1/2 hours)
December 15	Follow-up meeting to discuss survey design(estimate: 1 hour)
January 15	The Prestigio will provide all available email addresses of conference attendees during 2016
February 1	Guest satisfaction report and raw data provided to the Prestigio
February 15	Guest satisfaction briefing to the Prestigio marketing team

Pricing and Payment Plan

The following table summarizes the price for this project based on my standard rates for soliciting survey responses and completing customer satisfaction reports.

Activity	Rate	Total
Survey design and administration Data analysis Guest satisfaction report	Standard rate for 10-item survey $150 per hour (10 hours) $150 per hour (10 hours)	$2000 $1,500 $1,500
		$5,000

The total pricing for conducting the guest satisfaction research and creating a guest satisfaction report is $5000. This includes two payments: an up-front fee of $2,000 and a final payment of $3, 000 when the guest satisfaction report is delivered.

[Source: *Business Communication* (3rd edition)]

Research and development proposals

The research and development proposals ask for approval and funding to begin a study or an investigation. For instance, an environmentalist at a university might address a research proposal to request funds to study the effect of acid rain on a particular region. Research and development proposals are often solicited by institutions, including the National Science Foundation, the National Institutes of Medicine and so on. In other cases, research proposals might be submitted by students to ask for approval or fund for conducting an independent study or a thesis project.

Please take a quick look at this proposal. It is written by Tom Dewoody to his instructor for requesting approval to conducting a feasibility research for marketing dead western white pine. It is an internal proposal and is cast in as a memo.

This proposal opens with current situation and clear description of the problem. Then the possible solution is described with the scope of the proposed study and how the study will be done. Then the writer's qualifications for the study is given by citing a major reference. In the conclusion section, the writer asks for approval to begin the research.

To: Dr. John Lannon
From: Tom Sorrells Dewoody
Date: March 16, 20XX
Subject: Proposal for Determining the Feasibility of Marketing Dead Western White Pine

Introduction

Over the past four decades, huge losses of western white pine have occurred in the northern Rockies, primarily attributable to white pine blister rust and the attack of the mountain pine beetle. Estimated annual mortality is 318 million board feet. Because of the low natural resistance of white pine to blister rust, this high mortality rate is expected to continue indefinitely.

If white pine is not harvested while the tree is dying or soon after death, the wood begins to dry and check (warp and crack). The sapwood is discolored by blue stain, a fungus carried by the mountain pine beetle. If the white pine continues to stand after death, heart cracks develop. These factors work together to cause degradation of the lumber and consequent loss in value.

Statement of Problem

White pine mortality reduces the value of white pine stumpage because the commercial lumber market will not accept dead wood. The major implications of this problem are two: first, in the face of rising demand for wood, vast amounts of timber lie unused; second, dead trees are left to accumulate in the woods, where they are rapidly becoming a major fire hazard here in northern Idaho and elsewhere.

Proposed Solution

One possible solution to the problem of white pine mortality and waste is to search for markets other than the conventional lumber market. The last few years have seen a burst of popularity and growing demand for weathered barn boards and wormy pine for interior paneling. Some firms around the country are marketing defective wood as specialty products. (These firms call the wood from which their products come "distressed," a term I will use hereafter to refer to dead and defective white pine.) Distressed white pine quite possibly will find a place in such a market.

Scope

To assess the feasibility of developing a market for distressed white pine, I plan to pursue six areas of inquiry:

1. What products presently are being produced from dead wood, and what are the approximate costs of production?
2. How large is the demand for distressed-wood products?
3. Can distressed white pine as well as other species meet this demand?
4. Does the market contain room for distressed white pine?
5. What are the costs of retrieving and milling distressed white pine?
6. What prices of the products can the market bear?

Methods

My primary data sources will include consultations with Dr. James Hill, Professor of Wood Utilization,

and Dr. Sven Bergman, Forest Economist—both members of the College of Forestry, Wildlife, and Range. I will also inspect decks of dead white pine at several locations and visit a processing mill to evaluate it as a possible base of operations. I will round out my primary research with a letter and telephone survey of processors and wholesalers of distressed material.

Secondary sources will include publications on the uses of dead timber and a review of a study by Dr. Hill on the uses of dead white pine.

My Qualifications

I have been following Dr. Hill's study on dead white pine for two years. In June of this year I will receive my B.S. in forest management. I am familiar with wood milling processes and have firsthand experience at logging. My association with Dr. Hill and Dr. Bergman gives me the opportunity for an in-depth feasibility study.

Conclusion

Clearly, action is needed to reduce the vast accumulations of dead white pine in our forests—among the most productive forests in northern Idaho. By addressing the six areas of inquiry mentioned earlier, I can determine the feasibility of directing capital and labor to the production of distressed white pine products. With your approval I will begin research at once.

[Source: *Technical Communication* (14th edition)]

Conference proposal

A conference proposal is a stand-alone written document that proposes your presentation for a conference. Usually a conference proposal serves as a request to share scholarship, and it is independent from your written paper. The primary audience of a conference proposal is the reviewers and/or conference organizers. The secondary audience is conference attendees as the proposal—sometimes the abstract— will be listed in conference programs. The purpose of a conference proposal is to create a "research space" for the author(s) and to appeal to the primary audience so it will be accepted.

A typical medium-to-large academic conference usually has a program packed full of various forms of academic interactions, namely individual presentations, panel presentations, roundtables, workshops, and posters. As each type of presentation requires different level of information, be sure your proposal caters to the chosen type.

Type	Requirements/Conditions
Presentations	If you submit your proposal alone you will be placed here to deliver a presentation in about 15-20 minutes in length.
Panels	If 3-4 of your team members coordinate presentations around a central theme, the presentations will be placed here with each in about 15-20 minutes in length.
Roundtables	Talks here are addressed by several speakers on a central question from a variety of angles, and there is high interaction between the talkers and audience after the talks.
Workshops	Workshops are fully interactive with the audience and facilitate the audience in gaining knowledge and experience around the given topic.
Posters	Posters are designed to be viewed at anytime during the conference. There will also be dedicated time and space for the authors of the poster to interact with conference goers about their topic.

To make your conference proposal be selected, you should:

- Make sure to read the call for papers carefully to orient your topic to the theme listed in the call. You should take special note of the deadline and submit prior to the date.
- Make the topic you are proposing the one that you can cover easily within the required word limit of the conference call and within the limited time of conference presentation.
- Explain why your thesis is original and innovative as well as important to the development of the specific areas of your research.

Grant proposal

The grant proposals seek money from governments, public corporations and private foundations for a specified project. The money is called a grant for it requires no repayment as long as it is used to fund a project such as developing an online learning program for disabled children. Grants can be given to non-profit companies, charitable organizations, or educational facilities. In order to receive a grant, the proposal writer needs to carefully study the requirements or guidelines of proposal.

The sample listed here is a proposal by the Orchard Middle School in Orchard, VT to seek a grant to expand *Read to Succeed!* Program aimed to help at risk students increase their reading skills. In the Project Abstract, we can get a brief description of the project and its objects, as well as how the project will be evaluated to measure the success of it, that is, improve students' reading skills by one or two grade levels in this proposal.

The Statement of Need section should describe the problem that the project will attempt to address. Then the proposed project should be described to provide information on how it will be implemented. This section should also include information on any new assistive technology that will be used. Here, Kurzweil 3000 Assistive Reading Technology is introduced. Then, the goals or objectives of the project should be described in measurable to address the needs of the beneficiaries. Here the beneficiaries are the at risk students. Timeline is used to clearly show each involved activity and its deadline. In Budget, all expenses for the project should be included in a brief narrative of expenses along with a table of individual cost components. Evaluation section provides information that will be used to decide the effectiveness of the project. Staff and Organizational Information provides the staff qualifications, certifications and skills, and organization's capacity to implement and sustain the project.

Read to Succeed! Improving Reading Performance for At Risk Students

Project Abstract

The Orchard Middle School, in Orchard, VT is seeking a grant to expand our Read to Succeed! program with the objective of helping all of our at risk students increase their reading skills and read at grade level using the same classroom textbooks and materials as their peers. The objective is that by the end of the year the students will at least have doubled their reading speed and will have improved their reading skills by one to two grade levels. The Read to Succeed! program is based on the latest research on effective reading instruction. Funding in the amount of $16,504 is requested for staff training and to purchase the required software and hardware for the school's resource room.

Statement of Need

Orchard Middle School has 276 students, of which 59 have been determined to be at risk in their reading performance for a variety of reasons including learning disabilities, such as attention deficit disorder (ADD) and dyslexia, or other economic and language-based difficulties. Orchard Middle School is eligible for Title 1 funds, and if these students are not given an opportunity to improve their reading skills, they are, as studies show, more likely to be truant and drop out of school.

Program Description

The Orchard Read to Succeed! project will enable at risk students to improve their reading skills through utilization of five computers equipped with scanners and assistive reading software. Students using this innovative reading system will be able to utilize all their classroom materials, including textbooks providing them access to the general curriculum. The students will increase their reading speed and comprehension, which will help them obtain classroom subject proficiency. Included in the Read to Succeed! project will be a day of training for the reading specialist and classroom teachers on the features

and use of the Kurzweil 3000 software.

Kurzweil 3000 Assistive Reading Technology

Kurzweil 3000 software, from Kurzweil Educational Systems, uses a multi-sensory approach to help students with learning and reading difficulties. The Kurzweil 3000 was developed for people with reading difficulties caused by learning disabilities, such as dyslexia, attention deficit disorder (ADD) and other language-based difficulties. The Kurzweil 3000 is research-based assistive reading software developed with guidance from leading reading experts. It enables all children to access state and national curricula and conforms to today's research focused funding requirements.

With the Kurzweil 3000, a student with reading difficulties has access to textbooks and classroom materials displayed as an exact image on the computer screen. The text is then read aloud using the highest quality, most human sounding synthetic speech while highlighting words and sentences visually on screen.

One of the benefits of using assistive reading technology, such as the Kurzweil 3000, is that students are able to access classroom textbooks for increased access to general curriculum materials. This means they can use the same materials used in the classroom and the students are able to continue learning in the least restrictive environment. In addition to reading tools, Kurzweil 3000 includes audible tools to assist word decoding (syllabification and spelling), tools to assist with writing (spell-checking and word-prediction), and a tool that speaks and highlights pages from the Internet, opening up a whole world of knowledge. The Kurzweil 3000 can also be used for classroom and standardized test-taking, offering more independence for both the student and teacher.

Assistive reading technology has been shown (e.g., Heckler, L., Burns, L., Katz, L., Elkind, J., and Elkind, K. 2002 ; Elkind 1998) to help poor readers increase reading speed and comprehension, as well as increase attention.

References

Heckler, L., Burns, L., Katz, L., Elkind, J., and Elkind, K. 2002. Benefits of Assistive Reading Software for Students with Attention Disorders. Annals of Dyslexia, To Appear December 2002 Volume 52

Elkind, J. 1998. A Study of the Efficacy of the Kurzweil 3000 Reading Machine in Enhancing Poor Reading Performance. Portola Valley, CA: Lexia Institute

Wise, B. and Olson, R. 1995 Computer-based Phonological Awareness and Reading Instruction. Annals of Dyslexia 45:99-122

Elkind, J., Cohen K., and Murray, C. 1993. Using Computer-based Readers to Improve Reading Comprehension of Students with Dyslexia. Annals of Dyslexia, 46:159-186

Olson, R. and Wise, B. 1992. Reading on the Computer with Orthographic and Speech Feedback. Reading and Writing 4:107-44

Olson R., Foltz G., and Wise, B. 1987. Reading Instruction and Remediation with the Aid of Computer Speech. In D. Reinking (ed.) Computers and Reading: Issues for Theory and Practice, New York: Teachers College Press, Columbia University.

Goals & Objectives

The goal of the Read to Succeed! Project is to enable at risk students and students with learning and reading disabilities to improve their reading skills to the point where they can succeed in school and develop the reading skills that will prepare them for high school and post secondary education.

Studies have shown that poor readers, who are reading at a grade level or more behind, are more likely to be disruptive in the classroom, truant from school, and at risk of dropping out of high school.

The main objectives include:

1. Providing a measurable increase in reading speed, comprehension, and reading attention span. The objective is that the students will double their reading speed and increase their reading skills by one to two grade levels by the end of the school year.
2. Enabling poor readers to access the general curriculum through the use of assistive reading technology to scan and read their textbooks and other classroom materials.
3. Providing learning disabled students with a multi-sensory reading alternative that will help them increase their reading speed to the point they can read on their own.
4. Helping learning and reading disabled students stay in their regular classroom with their peers, so they can continue learning in a least restrictive environment.

Timeline

Activities	**Deadlines**
Submit Grant Proposal	October, 2002
Expected Grant Notification	December, 2002
Obtain Hardware and Software	January, 2002
Set up Kurzweil 3000	January, 2003
Training Session for Teachers	February, 2003
Student Introduction	February, 2003
Test Initial Reading Speed	February, 2003
Begin First 12-week Phase	March, 2003-May, 2003
Test Reading Improvement	June, 2003
Prepare Results Report	June, 2003

Budget

The budget includes funds for a Lab Pack containing five copies of Kurzweil Educational System's Scan/Read Color software, along with five computers and scanners. This will provide five independent assistive reading workstations. This will give students the greatest flexibility in using their textbooks and other classroom materials.

	Price	Quantity	Total
Kurzweil Scan/Read Lab Pack (Color) 5-Pack	$7,095	1 (5-pack)	$7,095

Software Maintenance Agreement (SMA)	$709	1 (5-pack)	$709
Epson 300 Scanner	$300	5	$1,500
Dell PC with Monitor	$1200	5	$6,000
Training	$1200	1 Day	$1,200
			Total: $16,504

*Note: Sample pricing is provided for demonstration purposes only. Please obtain current pricing from Kurzweil Educational Systems or your local representative.

Evaluation

Standardized reading tests will be conducted at the start of the Read to Succeed! program and again at the end of the school year to determine increases in reading speed and comprehension. Additionally, those students with ADD will be tested to determine increased reading attention rates.

Staff and Organizational Information

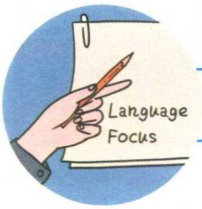
Jennifer Hazelton, Special Education Coordinator, holds a Bachelor's Degree in Special Education from Lesley College. Jennifer Hazelton has extensive experience working with students with severe reading difficulties and was responsible for implementing the successful pilot test program in 2001. She is proficient with learning technology, including computer hardware and software.

Sue Amberson, Speech and Language Pathologist, holds a Bachelor's degree from the University of Vermont and a Master's degree from Boston University. Sue Amberson is working with the students with severe learning disabilities and will be responsible for coordinating participation with classroom teachers. Joan Freeman, Principal, holds a Master's degree in Education from Colby College. Joan Freeman is providing support for this program and has taken responsibility for parental and community involvement.

Appendix

- Letter of Support
- Assistive Reading Software Efficacy Study
- Annual Report
- Manufacturer's Brochure

(Source: https://www.kurzweiledu.com/files/proof_resources_grant1.pdf)



LANGUAGE FOCUS

• How to talk about current situations?

Example 1: *In the past four years, the Prestigio has evaluated conference attendees' views in the following areas: overall satisfaction, intent to return, intent to recommend, conference meals, meeting rooms, and staff and service.*

Example 2: *Currently, Academic Technologies, which oversees all the computing functions in CMSU classrooms, has three sets of 100 clickers from Turning Technologies and two sets of 100 clickers from eInstruction.*

• How to talk about objectives?

Example 1: *The objective of this business proposal is to demonstrate how Acme Restaurant Group can resolve the problem of high event costs and inconsistent guest experiences for Acme Financial Planners by creating a partnership where we host all their dinner presentations in major markets where we have locations and they have events.*

Example 2: *The purpose of our proposal is to request authorization to study the baseline requirements, including faculty and student attitudes and lecture-hall infrastructure, for adopting clickers at CMSU.*

• How to talk about project plan?

Example 1: *Based on the needs identified above, the overall University master building plan, city and state codes and guidelines, and the timeline you have outlined, we propose to install a handicap-accessible elevator, starting at the underground parking garage level and terminating on the 4th floor, with the following conditions...*

Example 2: One possible solution to the problem of white pine mortality and waste is to search for markets other than the conventional lumber market.

• How to talk about qualifications?

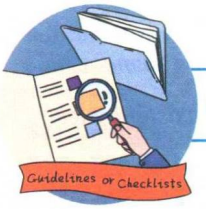
Example 1: *We are academically successful students who are qualified to perform this research and present our findings and recommendation*

Example 2: *I am familiar with wood milling processes and have firsthand experience at logging.*

• How to talk about costs and benefits?

Example 1: *The budget includes funds for a Lab Pack containing five copies of Kurzweil Educational System's Scan/Read Color software, along with five computers and scanners.*

Example 2: *This job should take 12 to 15 hours, unless we encounter subsurface ledge formations. My fee is $200 per hour.*



GUIDELINES OR CHECKLISTS

□ 1. Do you completely understand the audience's needs or problems?

□ 2. Do you know how to satisfy the needs or solve the problems?

□ 3. Do you offer a suitable plan or program that will reach the desired goal?

□ 4. Have you pointed out the benefits that the plan or program can offer?

□ 5. Have you addressed anticipated objections to your plan or program?

□ 6. Are you well qualified for in terms of experience and resources for carrying out the proposed plan or program?

□ 7. Do you credit all information sources and contributors?

□ 8. Has your organization completed other similar projects in a timely and satisfactory way?

□ 9. What makes your organization superior to the others who are also bidding?

□ 10. From a presentation perspective, is this proposal attractive and professional looking?

EXERCISES

1. Discussion:

Imagine that you have a good idea for having a new facility in your office and you write up a document explaining how it works and what are the benefits, and then end by urging management to purchase it. Is that a proposal? Please briefly explain.

2. Proposal writing

Assume your university has recently developed a grant program for student organizations. The goal of the program is to support academic research. A grant of RMB 3,000 would be awarded to the selected activities.

As the leader of your organization, you are writing a proposal to apply for the award. Your proposal is required to describe the current situation, the specific project plan that the grant money would support, your qualifications, timeline, and costs and benefits.

Chapter 9

Workplace Correspondence (4): Instructions

Contents

CASE 192

GLOSSARY 192

TASKS 193

- Preliminaries 193
- Common sections in instructions 196
- Visuals in instructions 201

LANGUAGE FOCUS 205

GUIDELINES OR CHECKLISTS 207

EXERCISES 208

CASE

Nathan, who is working for an IT consulting firm, is responsible for writing instructions of a digital system for customers' scheduled maintenance activities that describe how to perform the work and the timing for each action. Nathan's reader might be someone who doesn't know how to use the system, or someone who wants to use it more effectively. To meet the needs of customers, Nathan has to be very careful about the format of instructions, the amount of information provided, the use of graphics and technical jargon, readability and usability, etc.

GLOSSARY

jargon /ˈdʒɑrgən/ the technical terminology or characteristic idiom of a special activity or group 专用术语

usability /ˌjuzəˈbɪlɪti/ the quality or state of being usable 可用性

preliminary /prɪˈlɪməˌnɛri/ something that serves as a preceding event or introduces what follows 准备工作

specification /ˌspɛsɪfɪˈkeɪʃən/ a detailed precise presentation of something or of a plan or proposal for something, usually used in plural 技术规格；详细说明

troubleshooting /ˈtrʌblʃuːtɪŋ/ discovering why something does not work effectively and making suggestions about how to improve it 故障排除；检修

gerund /ˈdʒɛrʌnd/ a word ending in "-ing" that is made from a verb and used like a noun 动名词

visual /ˈvɪʒəwəl/ photographs, slides, films, charts, or other visual materials, especially as used for illustration or promotion, usually used in plural 视觉元素

icon /ˈaɪkɑn/ a graphic symbol on a computer display screen that represents an app, an object, or a function 图标

illustration /ˌɪləˈstreɪʃən/ a picture in a book, magazine, etc., or the process of illustrating something 插图；图解，图示

call-out /kɔl/-/aʊt/ a letter, number, or other device for identifying or calling attention to a particular part of an illustration 插图的编号

concurrent /kənˈkɜrənt/ operating or occurring at the same time 同时发生的

retrospective /ˌrɛtrəˈspɛktɪv/ directed to the past; contemplative of past situations, events, etc. 回顾的

One of the most common uses of technical writing is instructions—those step-by-step explanations of how to complete tasks. Seemingly so easy, but writing technical instructions that are clear and easy to follow is not an easy task. The instructions must be interpreted the same way by every reader. They must be understandable, and the intent must be clear. In this chapter, you will learn how to write effective instructions.

Preliminaries

Considering the audience and situation

First, define the audience of the instruction you are going to write. Defining your audience means defining its level of familiarity with the products and tasks, thus gaining a thorough grasp of your readers and their needs.

Then consider the situations in which the instructions might be used. Remember to put yourself in your readers' shoes when writing instructions. If the readers are at risk for injury or an accident, you are ethically obligated to warn your readers about the possible danger and tell them how to avoid it.

A good way to start is to answer the following questions:

- Who might read the instructions?
- Why are the instructions needed?
- Where will the instructions be used?
- When will the instructions be used?
- What materials and equipment will be needed?

- What could go wrong?
- What can be done to avoid the problem?

Understanding the product and the tasks

At the beginning of a project, it's important to determine the characteristics of the particular product and understand the procedure about which you are writing. In technical instructions, your understanding of the product and the procedure will make you better able to explain it to your readers.

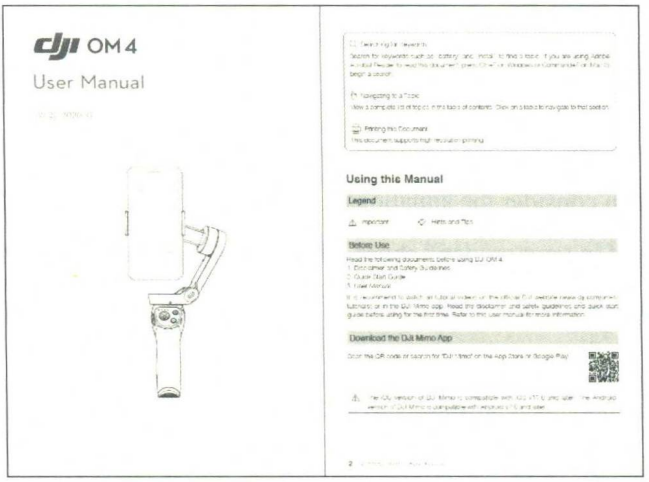
Use the following suggestions to understand the product and procedure better:

- Give yourself time to use the product or follow the procedure.
- Examine the procedure you are describing to determine the tasks.
- Watch a member of your target readers performing the task for the first time and take notes.
- Interview those who have completed the procedure and ask for suggestions.

Recognizing formats for instructions

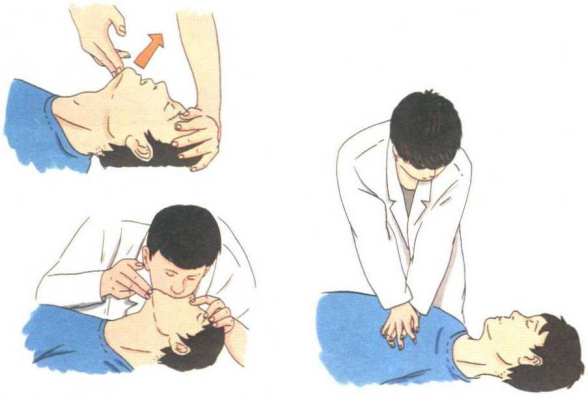
Instructions take various formats. The following are some of the most common ones:

- **Manuals** are the most comprehensive form of instructions, often containing instructions for using the product, descriptions, specifications, warnings, troubleshooting advice, etc. A manual likely includes some sections not found in other formats of instruction, such as a title page. A manual has a more elaborate front matter (e.g., *Overview of the Contents* and *Conventions*) and a back matter (e.g., *Copyright Page, Index,* and *Glossaries*).

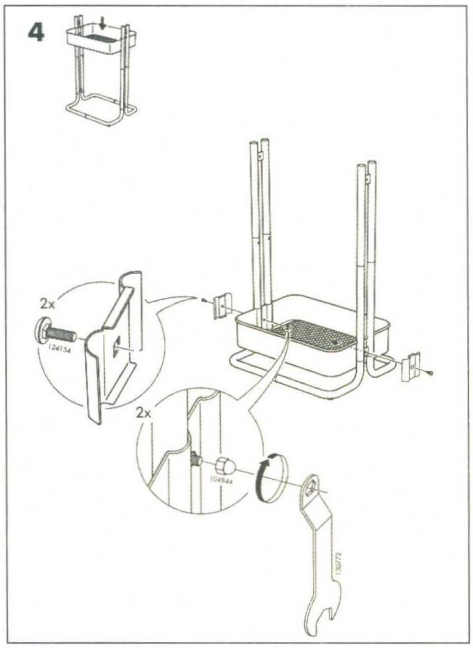


(Source:https://dl.djicdn.com/downloads/DJI%20OM%204/DJI_OM_4_User_Manual_v1.2_en1.pdf)

• **Quick reference materials** typically fit on a single page or a small card, focusing on basic steps for readers who only need enough information to perform the task.

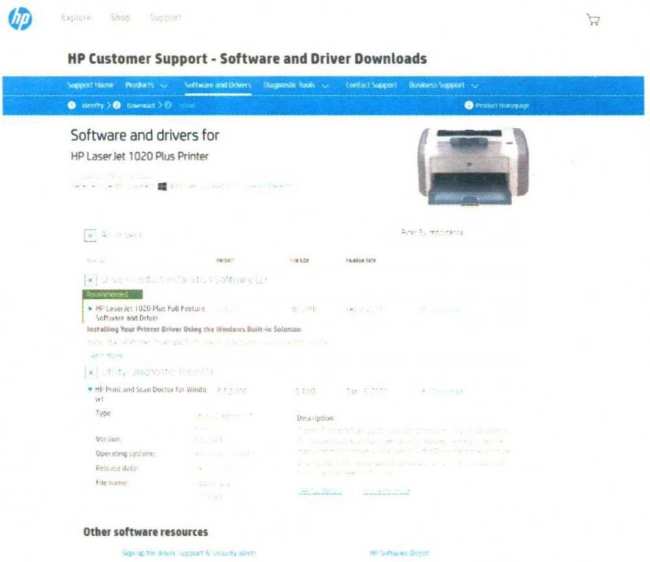


• **Assembly guides** are a common form of instructions found with consumer products that describe how to assemble parts into a final product. These guides can be one page or several pages long and usually rely heavily on visuals.



(Source: IKEA, https://www.ikea.cn/cn/zh/p/raskog-la-si-ke-shou-tui-che-bai-se-70376721/)

• **Web-based instructions** allow readers to click on links to explore more information beyond the basic instructions on the main page.

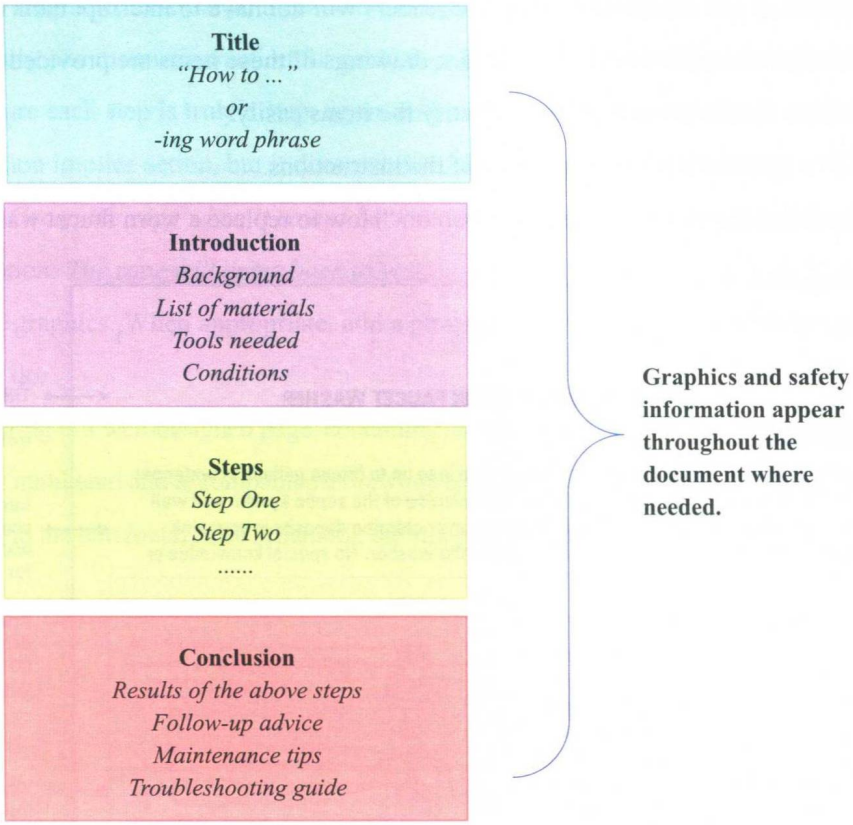


(Source: https://support.hp.com/us-en/drivers/selfservice/HP-LaserJet-1000-Printer-series/439423/model/3329726)

Think about how readers will be using the instructions when deciding on the format. Analyzing your readers will help you decide whether you should write a one-page set of instructions folded inside the package of the product, or a Web-based document that allows readers to link to the information they need. As always in technical communication, imagining how readers will use what you write will help you plan your document.

Common sections in instructions

Instructions can be brief or extensive. All instructions include steps of procedures and appropriate explanations to clarify the procedure. Most sets of instructions contain four elements: a title, a general introduction, step-by-step instructions, and a conclusion. But instructions often contain other parts as well, such as table of contents, definitions, a list of materials, graphics, cautions, and warnings. Whether to include these parts depends on the readers and the purpose of the instructions.



Title: A good title for instructions should be concise. Avoid noun strings like "K120 Solar Water Heater System Installation Instructions". Instead, use the following two forms:

- "How to", such as "How to Install K120 Solar Water Heater System".
- Gerund (-ing word phrase), such as "Installing K120 Solar Water Heater System".

Introduction: The general introduction provides the preliminary information that readers will need to follow the instructions safely and easily. The following points may be applied to your instructions:

- Indicate what the readers need in terms of knowledge and background to understand the instructions. Sometimes the age of the target readers needs to be specified.
- Give a general idea of the procedure and what it accomplishes. If the task is complex and the instructions are lengthy, state how much time may be necessary to complete the task.
- Indicate the conditions when these instructions should and/or should not be used. If the task involves risks and dangers, safety measures or other concerns must be stated clearly.

- State what items the readers will need for accomplishing the task. List necessary tools, materials and equipment so that the readers will not have to interrupt their work to look for something they need. Sometimes, drawings of these items are provided next to the names in order to help readers identify the items easily.
- Give an overview of the contents of the instructions.

The following is a typical introduction on "How to replace a worn faucet washer".

1

HOW TO REPLACE A WORN FAUCET WASHER

Title announces the document's exact purpose

Introduction

A leaking faucet, caused by a worn washer, can lose up to fifteen gallons of water per day. This loss can result in a higher water bill, overuse of the septic system and well pump, an increase in your hot-water bill, and rust or chlorine deposits in your sink basin. These instructions detail how to replace the washer. No special knowledge or skills are necessary.

Introduction provides appropriate detail for first-time readers

Overview

Brief overall description and principle of operation

The typical faucet consists of a round knob or a handle (Figure 1) which, when turned, causes the stem to screw down until the washer sits snugly over the seat. With the washer in place, the flow of water is stopped. A worn washer loses the ability to form a tight seal, causing a leak or drip to develop. Replacing the worn washer eliminates the leak.

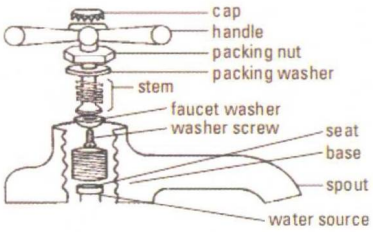


Figure 1. Typical faucet in exploded view

Visual reinforces the prose

Equipment and Material Needed

- pliers
- regular or Phillips (crossed head) screwdriver
- new washer of same size and shape as worn washer
- valve for shutting off water supply

Required items are listed

Note and Caution *These instructions only apply to faucets that have washers. Avoid using any excessive force on the threaded parts, because they are made of soft metal and could easily strip.*

Note and caution alert readers before they take action

Step-by-step instructions: The body section of a set of instructions is the step-by-step information. A step is the action that a reader performs. Steps have a consistent and unique structure. Use the following guidelines for writing steps:

- Number the steps. Make sure steps proceed forward in time. Give each step and substep in order.
- Present the right amount of information in each step. Place any necessary explanations

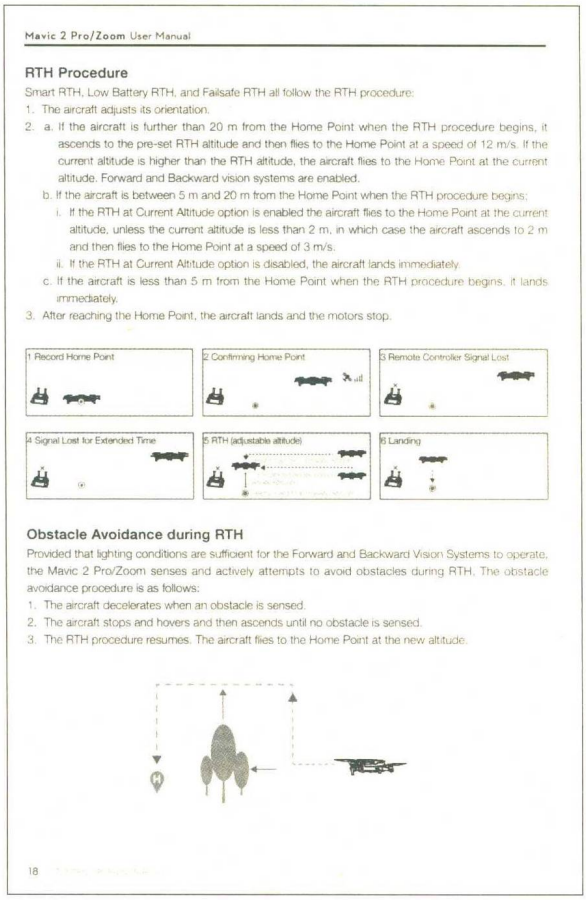
after the step, such as measurements, sizes, locations, time, and restatement in more familiar language, to show your readers exactly what to do.

- Write only one instruction/action for each step. Each step should define a single task.
- Make sure each step is truly a step, or an action. Do not confuse step and description. A description implies action, but it does not direct the reader to do something.

  Action: *Grasp the rope when it comes back to you.*

  Description: *The rope will come back to you.*
- Include graphics. When appropriate, add a photograph or a drawing to show the reader what to do.

The following is a well-designed page, containing an appropriate amount of information. Each step is clearly numbered and accompanied a drawing, expressing one action. The effective use of white space and the horizontal rules separating the steps make them easier to follow.



Mavic 2 Pro/Zoom User Manual

RTH Procedure

Smart RTH, Low Battery RTH, and Failsafe RTH all follow the RTH procedure:

1. The aircraft adjusts its orientation.
2. a. If the aircraft is further than 20 m from the Home Point when the RTH procedure begins, it ascends to the pre-set RTH altitude and then flies to the Home Point at a speed of 12 m/s. If the current altitude is higher than the RTH altitude, the aircraft flies to the Home Point at the current altitude. Forward and Backward vision systems are enabled.
   b. If the aircraft is between 5 m and 20 m from the Home Point when the RTH procedure begins:
      i. If the RTH at Current Altitude option is enabled the aircraft flies to the Home Point at the current altitude, unless the current altitude is less than 2 m, in which case the aircraft ascends to 2 m and then flies to the Home Point at a speed of 3 m/s.
      ii. If the RTH at Current Altitude option is disabled, the aircraft lands immediately.
   c. If the aircraft is less than 5 m from the Home Point when the RTH procedure begins, it lands immediately.
3. After reaching the Home Point, the aircraft lands and the motors stop.

1 Record Home Point
2 Confirming Home Point
3 Remote Controller Signal Lost
4 Signal Lost for Extended Time
5 RTH (adjustable altitude)
6 Landing

Obstacle Avoidance during RTH

Provided that lighting conditions are sufficient for the Forward and Backward Vision Systems to operate, the Mavic 2 Pro/Zoom senses and actively attempts to avoid obstacles during RTH. The obstacle avoidance procedure is as follows:

1. The aircraft decelerates when an obstacle is sensed.
2. The aircraft stops and hovers and then ascends until no obstacle is sensed.
3. The RTH procedure resumes. The aircraft flies to the Home Point at the new altitude.

18

(Source: https://dl.djicdn.com/downloads/Mavic_2/20190124/Mavic_2_Pro_Zoom_User_Manual_v1.8_.pdf)

Conclusion: Instructions often conclude by stating that the reader has now completed the task or by describing what the reader should do next. Some conclusions end with maintenance tips or a troubleshooting guide. Usually, the conclusion of a set of instructions has the following functions:

- Summarize the major steps to help readers review their performance.
- Describe the results of the procedure.
- Offer follow-up advice about what could be done next or refer the reader to further sources of documentation.
- Give tips on maintenance or advice about troubleshooting if anything goes wrong.

The following is an excerpt from a Troubleshooting Guide. Troubleshooting guides are often provided in a table format with three columns: problems, causes and solutions/corrections. Usually, the positive and constructive tone is used in the Guide.

RY10 Troubleshooting Guide

Below we have provided a common problems and solutions table. Be sure to consult this table should you experience any technical problems.

Description of Problem	Possible Causes	Known Solutions
The torch will not ignite or the torch will not stay lit	1) The fuel level could be too low 2) The propane cylinder valve could be partially or fully closed, which can restrict fuel flow 3) The pressure regulator valve may be in the off position or may not be providing sufficient fuel flow	1) Check and refill your fuel tank 2) Ensure your fuel valve is fully open. You can do this by turning the knob fully counter-clockwise 3) You may increase the pressure from the regulator by turning the knob clockwise
Crack filler is hot, but will not come out of the flow valve	1) Crack filler was left inside the melter from a previous job. This crack filler has solidified inside the flow valve and although the material in the kettle is melted, the material in the transfer tube and flow valve may not be. 2) There is a material blockage in the transfer tube or flow valve preventing crack filler from flowing which can be caused by dirt or debris inside the kettle or by old crack sealant which has lost its ability to melt from being reheated too many times	1) Allow the torch more time to heat up the flow valve until the crack filler inside begins to melt. Alternatively, you may heat up the valve using a propane torch assembly. 2) This is routine maintenance as described in the maintenance guide. Make sure your melter is cool enough to touch with gloves, carefully remove the valve control arm. Rotate the control valve forward (clockwise) about a ¾ turn and pull out of the transfer tube (this may require some force if the material is cold). Using a drill and a long 1" wire wheel, carefully clean all build up on the inside of the flow valve and transfer tube while being careful not to damage the original steel surface. Once clean you may put re-assemble the control valve and control arm.
Torch will not stay lit	1) The fuel level may be too low 2) The fuel tank valve or torch valve may not be fully open and therefore restricting fuel flow, or your regulator may not be providing enough pressure 3) The wind may be blowing out the flame.	1) Refill your fuel tank 2) Ensure your fuel tank valve and torch valves are fully open and use your regulator to increase or decrease flame strength 3) Move equipment to a less windy area or try turning equipment so that the torch is not facing the wind
Crack filler is melting really slowly	1) Incorrect crack sealant being used 2) Torch is not providing enough heat to melt the crack sealant 3) The temperature outside is cooler than normal slowing down the melting process 4) The wind is continuously blowing out your flame, not allowing your machine to build heat quickly	1) Double check that your using an approved crack sealant for use in direct-fire melters 2) Increase the fuel to your torch 3) No solutions, melting takes longer on cooler days 4) Move equipment to a less windy area or try turning equipment so that the torch is not exposed to the wind

(Source: https://www.asphaltkingdom.com/amfile/file/download/file/78/product/11/)

Visuals in instructions

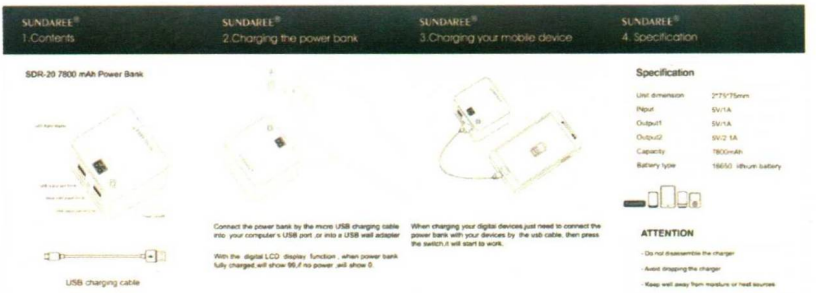
Visuals are crucial to instructions. They can not only show readers what to do, but also attract the readers' attention and help keep words to a minimum. Sometimes words simply cannot explain the steps clearly. Visuals are often critical to readers' ability to visualize what they are supposed to do.

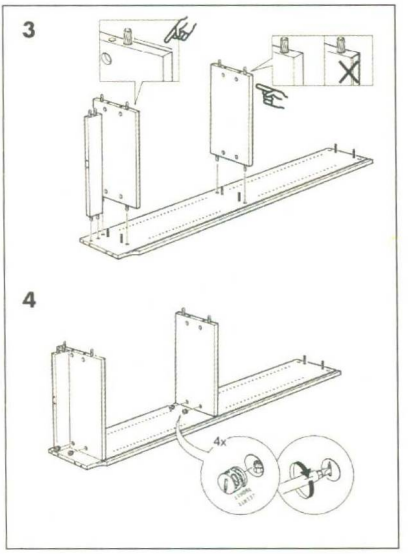
Types of visuals especially suited to instructions include icons, illustrations, diagrams, flowcharts, photographs, and prose tables. To use visuals effectively, consider these suggestions:

- Illustrate any step that might be hard for readers to visualize. The less specialized your readers are, the more visuals they are likely to need.
- Place the visuals in close proximity to the steps they illustrate and refer readers to the accompanying visuals. A simple statement like "See Figure 2" will notify readers that a graphic is available for this step. Don't make your readers flip pages to see the accompanying graphic.
- Parallel the reader's angle of vision in performing the activity or operating the equipment. Name the angle (e.g., side view, top view) if you think readers will have trouble figuring it out for themselves.
- Avoid illustrating any action simple enough for readers to visualize on their own, such as "PRESS RETURN" for anyone familiar with a keyboard.

Visuals can be used without words, too, especially for international audiences. Often called *wordless instructions*, these diagrams use clear, simple line drawings, arrows, and call-outs to let readers see how to perform the activity.

The first set of instructions contains both texts and visuals. The second one is a sample of wordless instructions.



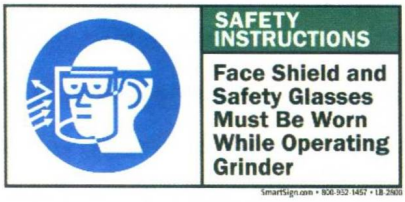


Safety information

Instructions often must alert readers to the possibility of hurting themselves, ruining their equipment, and screwing up the procedure. So safety information should be placed early in the documentation and in places where the readers will be completing difficult or dangerous steps. Inadequate notices of warning, caution, or danger are a common cause of lawsuits. Each hazard notice is legally required to (1) describe the specific hazard, (2) spell out the consequences of ignoring the hazard, and (3) offer instructions for avoiding the hazard. Usually, safety information should appear in two places:

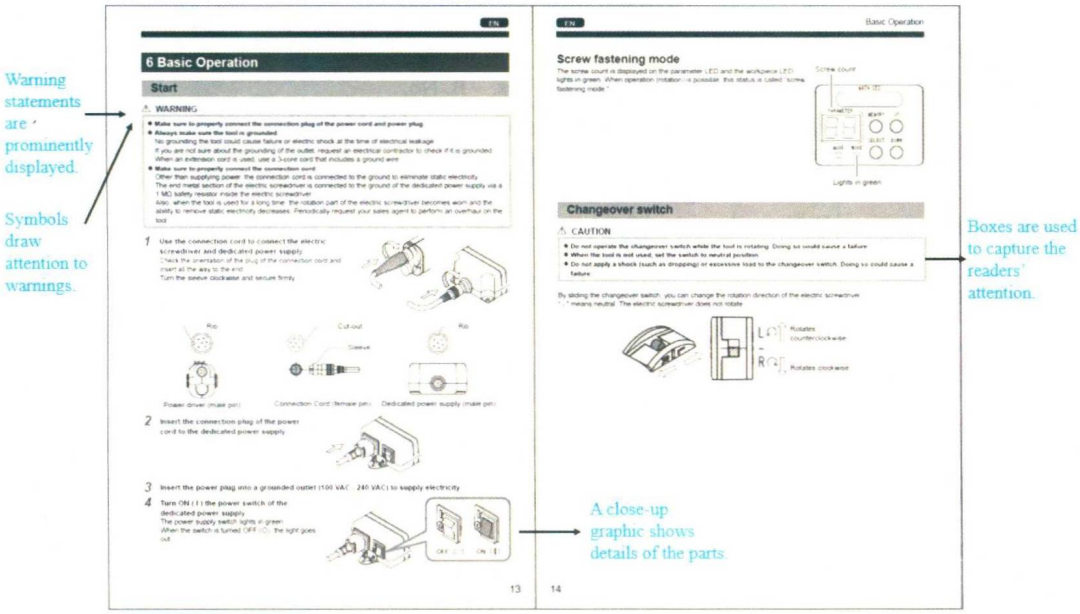
- If a hazard is present throughout the procedure, place the safety information between the introduction and the steps to make sure that readers are warned before they begin following the steps.
- If a hazard relates to a specific step, place the hazard statement prominently before the step so that readers can avoid damage or injury.

A common convention in technical writing is to use a three-level rating for safety information and warnings: Danger, Warning, and Caution.



- **Danger** signals that readers may be at risk for severe bodily harm or even death. This is the highest level of warning, and it should be used only when the situation involves real danger to the readers.
- **Warning** signals that the reader may be injured or the product may be damaged severely if the step is not done properly. To help readers avoid such risks, warnings are used frequently.
- **Caution** alerts readers that mistakes may cause damage to the product or equipment. Cautions should be used to raise readers' awareness of difficult steps and possible risks.

Because even the most emphatic verbal notice might be overlooked by readers, visual signals, such as symbols and icons, are used to direct readers' attention and highlight safety information. Don't be afraid to repeat yourself. A reasonable amount of repetition is effective. But don't repeat the same piece of advice in all steps because readers will stop paying attention to it.



Field Tests

When you have finished drafting your instructions, field-test the accuracy and clarity of your instructions. Ask someone who is not familiar with the task to follow your directions. Test participants typically are members of the target readers for your instructions. They can provide you with valuable feedback by noting wording that is not clear, steps that are out of sequence, or steps that have been left out altogether. If they come across problems with the instructions, it is likely that actual users will experience similar issues.

To administer a field test, which is also called a usability test, you need to select a test method. Concurrent testing and retrospective testing are two methods that evaluate how users can perform your instructions.

- **Concurrent testing:** You observe the participants reading and performing your instructions. You measure such things as accuracy, speed, recall, and attitude. As you observe them, note any steps that seem especially confusing and revise accordingly.
- **Retrospective testing:** You ask participants to complete a questionnaire or to answer questions about a task after they have performed it following your instructions. This method can help you evaluate readers' comprehension and attitudes and the clarity of the documents. A survey can include different types of questions. The following table shows survey questions for a retrospective field test.

Retrospective Test Questions	
Question types	Questions
Multiple choice	Was the instruction useful? A. Yes. B. No.
	After filing in the applicant's name, address, ID number, and contact information (Step 1~4), the next step was to A. Enter the age of the client. B. Upload a signed form. C. Select a delivery date.
Likert scale rating	I found the document unnecessarily complex. ○ Strongly agree. ○ Agree. ○ Neither agree nor disagree. ○ Disagree. ○ Strongly disagree.
Open-ended question	What was the most difficult section? Why?

Usually, a field test can use a concurrent test along with a retrospective test. These tests would strengthen the usability of your instructions, help you detect usability issues, and determine whether the purposes of the writing have been met. Based on the results of the field test, you should compile your data, list problems, and devise solutions.

LANGUAGE FOCUS

Writing instructions is different from, sometimes seemingly contradictory to, writing other documents. To write clear and easy-to-follow instructions, take the following tips:

Using the imperative mood

Begin each step with an action verb in the imperative mood. Instructions are written often as commands in the imperative mood and (whenever possible) present tense. As a technical writer, you need to get in your readers' face and get their full attention, which can be achieved by using the imperative mood. For example:

Press the Pause button to stop the display temporarily.

Avoiding using the passive voice in instructions

Read the following instruction:

The Pause button should be depressed in order to stop the display temporarily.

You may find the word *depress* in the passive voice seems weird in this sentence. And readers may wonder who is supposed to depress the Pause button. Without clearly stating the agent, the readers may think it is simply a reference to some existing state, or may wonder "Are they talking to me?"

Keeping the natural articles *a, an,* and *the*

Although conciseness is important in instructions, clarity is essential. Leaving out some articles (*a, an, the*), some pronouns (*you, this, these*), and some verbs can make your sentences short, but such sentences may result in telegraphic style and become harder for readers to

understand.

For example, the first version of the following instruction, omitting all articles, is confusing.

Version 1: *Place document in tray with printed side facing opposite.*

Version 2: *Place the document in the document tray with the printed side facing away from you.*

Using numbers to indicate the sequence

One good way to make instructions easy to follow is to divide them into short, simple steps in a proper sequence. Numbers can indicate the sequence of the steps clearly. Consider using the numbered- or bulleted-list feature of your word processing software to create sequenced steps. For example:

1. Connect each black cable wire to a brass terminal.

2. Attach one 4-inch green jumper wire to the back.

3. Connect the jumper wire to the bare cable wire.

Using short and logically shaped sentences

Use one short sentence for each step so that readers can perform one step at a time. If a single step covers two related actions, describe these actions in their required sequence. Compare the following two versions, and you can find Version 2 is more logical.

Version 1: *Before switching on the computer, insert the DVD in the drive.*

Version 2: *Insert the DVD in the drive; then switch on the computer.*

Another strategy is to simplify explanations by using a familiar-to-unfamiliar sequence. Put the step that is familiar to the readers first; thus your readers feel the step is not so hard. For example, Version 2 seems somewhat easier because most readers are familiar with "store information on a blank CD".

Version 1: *You must initialize a blank CD before you can store information on it.*

Version 2: *Before you can store information on a blank CD, you must initialize the CD.*

Parallel phrasing

Parallelism is especially important in instructions. By repeating grammatical forms, you can emphasize the step-by-step organization. Parallelism can also increase readability and continuity. All the steps should be written in identical grammatical form.

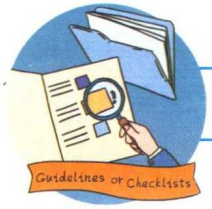
Not parallel	Parallel
1. In your house, you need to find a good place for your projector. 2. When the location is decided, install the screen. 3. Alignment image is a good tool to help you adjust your project. Find one. 4. Projecting the image; adjusting your machine. 5. Selecting the right picture mode.	1. Find the right location. The first step is figuring out where you're going to put the thing. 2. Set up the screen (optional). 3. Project an alignment image. 4. Adjust the projected image. 5. Select the right picture mode.

Phrasing instructions affirmatively

Readers respond more quickly and efficiently to instructions that are phrased affirmatively rather than negatively. Read the following two versions, and you can see that Version 2 is more direct and easily understood.

Version 1: *Verify that the lens is not contaminated with dust.*

Version 2: *Examine the lens for dust.*



GUIDELINES OR CHECKLISTS

- □ Define your readers and their purposes of reading your instructions.
- □ Understand thoroughly the product and the tasks.
- □ Identify where the instructions will be used and decide on the appropriate format for your instructions.
- □ Make sure you provide real instructions.
- □ Write steps in short chronological sentences and number all the steps.

□ Use active voice and imperative mood.

□ Include only one action per step.

□ Provide additional supplementary explanation of the steps as necessary.

□ Use effective visuals to illustrate any key actions or objects, and make certain they are located right beside or beneath the step they illustrate and properly labeled.

□ Include appropriate warnings and cautions.

□ Eliminate any ambiguity.

□ Field-test your instructions.

EXERCISES

1. Rewrite the following steps so that each begins with a verb in active voice and imperative mood.

a. If you want to prevent colors from running, you need to separate dark clothes from light clothes.

_____

_____

b. It is required that readers should read the passage and locate all nouns, which need to be underlined with a single line.

_____

_____

c. The user should press the AUTO DEFROST button if he wants to begin the defrosting process.

_____

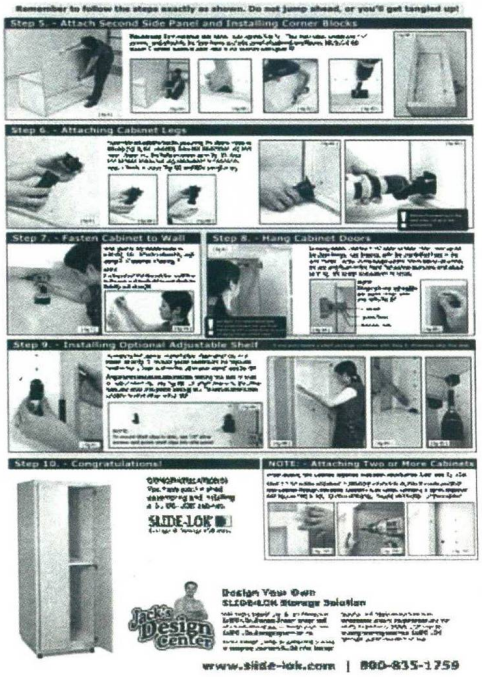
_____

2. Improve readability of the following instructions by revising the style and design of the instruction.

What can you do before jacking up you car?

Whenever a flat tire occurs, some basic procedures should be followed before the car is jacked up. If possible, your car should be positioned on as firm and level a surface as is available. The engine must be turned off. The parking brake should be set. The automatic transmission shift lever should be placed in "park" or the manual transmission lever in "reverse". The wheel opposite the one to be removed should have a piece of wood placed beneath it in order to prevent the wheel from rolling. The spare wheel, jack, and lug wrench should be removed from the luggage compartment.

3. Evaluate the effectiveness of the following instructions and suggest improvements. Fill in the following table with your comments, problems you detect, and your suggestions.



Your comments:
Problems with the instructions:
Your suggestions:

4. **Project**: Work in small groups. Write instructions for any of the following processes (or other process with which you are familiar). Analyze your readers, follow the guidelines and strategies you've learned from this chapter. Conduct a field test before you submit your instructions to your teacher.

   Suggested topics:

   • Using an app

   • Editing pictures in Photoshop

   • Creating a web page

   • Cooking a dish

   • Creating artwork

   • Registering for classes

   • Tuning a piano (or a chosen musical instrument)

Chapter 10

Structured Writing

Contents

CASE 212

GLOSSARY 212

TASKS 213

- A brief introduction to structured writing 213
- An example of structured writing 217
- Structured writing in DITA 219

GUIDELINES OR CHECKLISTS 226

EXERCISES 227

CASE

Kim is the leader of a documentation team in a medical equipment manufacturer. As her company's export grows, she finds herself overwhelmed by questions and requests about the technical documents they provide. Some clients keep calling her, asking for the up-to-date manuals once the software has been updated. Some clients are not happy with the quality of translation. Facing more and more pressure from both the clients and the manager, Kim starts to look for solution that can streamline her team's content creation process to meet the ever growing needs of customers in the oversea market.

GLOSSARY

structured writing /ˈstrʌktʃərd/ /ˈraɪtɪŋ/ a form of technical writing that uses and creates structured documents 结构化写作

DITA /ˈditə/ an acronym for Darwin Information Typing Architecture (DITA); a specification defines a set of document types for authoring and organizing topic-oriented information, as well as a set of mechanisms for combining, extending, and constraining document types 一种结构化写作的方法

task /tɑːsk/ intended for a procedure that describes how to accomplish a task 任务，(DITA 中的) 一种信息类型

concept /ˈkɑnsɛpt/ a type of topic in DITA, usually more objective, containing definitions, rules, and guidelines 概念，(DITA 中的) 一种信息类型

reference /ˈrɛfərəns/ referring to DITA topics that describe command syntax, programming instructions, and other reference material 参考信息，(DITA 中的) 一种信息类型

DITA map / ˈditə / /mæp/ a "route" for topics used to transform a collection of content into a publication; usually gives the topics' sequence and structure DITA 信息地图 (或保留英文说法 DITA map)

XML /ɛks-ɛm-ɛl/ stands for eXtensible Markup Language; it's a markup language designed to store and transport data XML 语言

single-sourcing /ˈsɪŋgəl/-/ˈsɔrsɪŋ/ also known as single-sourcing publishing, is a content management method which allows the same source content to be used across different forms of media and more than one time 同源发布或同源开发

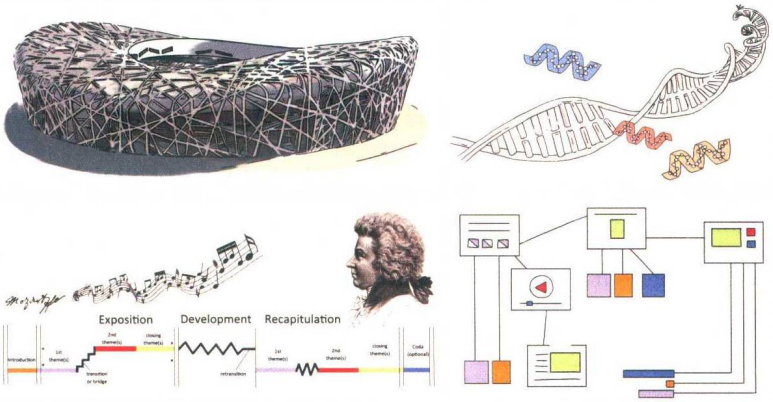
data reuse /ˈdeɪtə/ /riˈjuz/ using the same data more than one time in the process of document development; also called "content reuse" 内容复用，数据的重复使用

information product /ˌɪnfərˈmeɪʃən/ /ˈprɑdəkt/ a digital document where data and information are structured in a specific format to instruct, educate, or guide the consumer in order to meet a predefined purpose 信息产品，多为专门开发的旨在帮助或指导消费者和客户的文档

A brief introduction to structured writing

Structure and structuring

What is structure? Structure is the arrangement, combination, or organization of elements in a system, as well as the relationship between the elements.



Structures are everywhere, and they exist in both material and abstract forms.

An architectural structure is a material one, referring to the elements such as beams, slabs, and columns and spatial system that can bear loads. Architectural structures can be further categorized. For example, given the material used, architectural structures can

be divided into concrete structure, masonry structure, steel structure, light steel structure, wood structure, composite structure, etc. As regard to the exterior look, architectural structures can be divided into high-rise structure, multi-layer structure, single-layer structure, etc.

In biology, structures exist at all levels of organization: atomic, molecular, cellular, tissue, organ, organismic, population, and ecosystem level. Arguably the most recognized biological structure is the double helix structure in a molecule of DNA. The two strands of double-stranded DNA store the same biological information.

Musical structure, sometimes also coined as music forms, is the structure of musical composition. Elements such as pitch, timber, and duration can be combined into higher level elements like motifs, phrases, and sentences, which subsequently can be formed into larger structures. On top of that, single-movement exists. For example, in classical music, the sonata form is "the most important principle of musical form, or formal type, from the Classical period well into the 20th century."[1]

In computer science, the famous formula, "algorithm + data structure = program", was proposed by Niklaus Wirth, winner of the Turing Award and father of Pascal. In this formula, the (data) structure refers to the relationship between data elements.

The so-called structuring refers to a series of processes of classifying and sorting out a bunch of messy things. Structure makes our world clear and tidy, and classification is a way for humans to understand the world. Humans are naturally inclined to classifying things. When facing with a large amount of information, our brain will automatically start to put things in different categories. A large amount of unclassified information overwhelms people, but a structured design helps people look beneath the surface. Many of us are troubled by organizing things at home. Don't panic when you step into a messy room. Try to organize stuff into categories: shirts-coats-underwear, spring/fall-winter-summer, and so forth. Thus, you are turning your everyday housework into a scientific process, which exactly is the essence of structuring.

1 Source: *The New Grove Dictionary of Music and Musicians*

Structured writing

Before we start talking about structured writing, we firstly should clarify one thing: in structured writing, we "structure" the content, not the form of writing. Structured writing itself does not necessarily involve in the use of writing tools designed to implement this type of writing. In essence, it is about principles and methodology of content creation with a purpose of creating well-structured content.

The structure of the content refers to the level and order of the modules of the content in a publication, such as books and training materials. Interestingly, your content always has a certain structure regardless your intention to structure it, though a structure that has not been carefully organized might showcase some loose and chaotic in organization. For example, a book contains basic structure elements, such as a cover, chapters, and back matter. Some elements, such as a cover and back matter, only appear once; some elements, such as chapters, subsections, and paragraphs, appear repeatedly.

By removing the main content of an article, we will have the structure left. Let's take a recipe book for example. A recipe book contains many dishes and recipes. Though each dish has its own cooking method(s) and ingredients, the structure of the recipes remains the same. A recipe book is a product of technical writing; therefore, we consider it a technical document. Likewise, in other technical documents, a definitive purpose and detailed and strict rules about content also prevail. Through structuring the content, different parts of a technical document can be integrated. In fact, other fields of writing also implement structured writing in content creation, for example, narrative writing. The difference is that narrative writing has a more flexible and loose structure, hence it is more literary. Well, we won't be covering this topic in our textbook.

As we have discussed in the previous section, structuring the content is a process of sorting things. It helps you answer the questions of *what*—the definition, *how*—the organization, and *where*—sorting and arrangement. Like organizing your house, structured writing is a process of arranging your content: defining, organizing, sorting, and collating.

Structured writing applies strict regulations on all aspects of content. For example, you are writing an annual report at the request of your boss, and you will be asked to include specific information in the report. Another example is syllabus writing. While your instructor is writing the course syllabus for the upcoming new semester, key information, such as logistics,

required textbooks, calendar, assessment, and *homework policy*, are indispensable.

The primary stage of structured writing is usually carried out on "templates" that have been carefully structured and defined to complete the task. A scattered and disorganized template surely does not serve structured writing.

The next stage is cutting and reorganizing content, which can be called structuring content. Put it another way, structured writing requires modularizing, semanticizing, associating, and standardizing a large amount of content. It is a standardized content creation methodology. The larger the amount of content, the more effective the structuring can be. The essence of structured writing design is logic and common sense—through embedding scattered information, data, content, etc. into a framework and designing content modules that can be understood by users.

In general, structured writing usually has the following characteristics:

- Meeting the needs of specific user and always taking the user's perspective.
- Effort being spent in the early stage of structural planning, and the writing process is like blank filling.
- Standardized writing.
- Writing content module, not the entire document
- Applying strict rules and regulations on writers with regards to content creation, definition, structures, and attributes.

In a structured technical writing project, technical documentation engineers or content architects are requested to participate in the early stage, and they should also develop a good understanding of user's needs and product's functions so they can propose feasible plans to develop designs and information matrix between content modules and product/project. Later, content update should also proceed in accordance with their plans. We need to note that designing content structure can be done only once; the subsequent updates of products/documents can take a bottom-up approach as information architects need to update only the new information. If the new information is constructed in modules, then simply replacing the old modules will suffice.

For technical writers who are seeking advancement in their career, we suggest mastering the following abilities:

- Carrying out structured thinking.
- Proficiency in user analysis and research capabilities.
- Competency in formulating content strategy according to the company's business goals, user/group characteristics, and in-depth understanding of products and domain knowledge.
- Understanding of industry trends and advanced technologies; studying content management, information design methodology, industry best practices, etc.
- Competency in leading content planning, design and deployment at the company-level, and planning of the overall release channel for technical content.
- Leading construction of content system and process optimization at the company-level.
- Providing a consistent strategy for translation and localization.

An example of structured writing

The following content is retrieved from the AJE Author Resource Center, which mainly introduces *Nature*'s requirements on the structure of abstracts.

Original title: *Make a Great First Impression: 6 Tips for Writing a Strong Abstract*

Author: Sarah Conte

In some ways, an abstract is the most important part of your paper.

Firstly, when journal editors make decision on whether to accept your paper for reviewing, abstract is the first thing they read. Similarly, when your work is finally published, abstract is the first part that the readers read. Many databases only include abstracts and apply restrictions on the access to the full paper. In this case, abstract is the only part ordinary readers can access.

Therefore, every author should carefully consider the writing of abstracts. How to succinctly convey your research? How to highlight the most important points? How to attract and persuade journal editors, reviewers, and readers? Here are our suggestions:

- Provide an introduction to background information that leads to your statement of

research goals/objectives

The first three sentences in your abstract must let the reader know why you are doing this study.

• Briefly describe your approach.

Your abstract should summarize research methods; excessive details are not necessary.

• Clearly describe the most important findings of the research.

People read your abstract to understand your findings. Therefore, the result should be the longest and most elaborated part of the abstract; provide as much detail as possible.

• State the conclusion concisely and avoid exaggeration.

The last two sentences of the abstract should be used to summarize the key information of the research: your conclusion. State your main findings as concisely as possible. If you have other interesting secondary findings to share, you can also mention them. Finally, consider writing a statement about the theoretical or practical significance of your work, and/or how your work promotes the development of the entire field. This will help readers understand more clearly the importance of your findings.

• Things to avoid in the abstract

The abstract should be the summary of your research, so it usually has a strict word limit. It is not easy to summarize all the important aspects of the work you have done in a paragraph of 250 words or less. However, knowing what issues should be avoided when writing an abstract can make this job a little easier. The abstract should NOT include:

– Lengthy background information

– Reference

– Details of routine lab procedures

– Details of statistical methods or software used (unless this is the focus of your research)

– Undefined abbreviations or acronyms

– Results or discussions that will not be covered in the paper

Published: 05 May 2005

The bipolar mitotic kinesin Eg5 moves on both microtubules that it crosslinks

Lukas C. Kapitein, Erwin J. G. Peterman, Benjamin H. Kwok, Jeffrey H. Kim, Tarun M. Kapoor & Christoph F. Schmidt

Nature **435**, 114–118(2005) | Cite this article

3168 Accesses | **430** Citations | **2** Altmetric | Metrics

Abstract

During cell division, mitotic spindles are assembled by microtubule-based motor proteins[1,2]. The bipolar organization of spindles is essential for proper segregation of chromosomes, and requires plus-end-directed homotetrameric motor proteins of the widely conserved kinesin-5 (BimC) family[3]. Hypotheses for bipolar spindle formation include the 'push–pull mitotic muscle' model, in which kinesin-5 and opposing motor proteins act between overlapping microtubules[2,4,5]. However, the precise roles of kinesin-5 during this process are unknown. Here we show that the vertebrate kinesin-5 Eg5 drives the sliding of microtubules depending on their relative orientation. We found in controlled *in vitro* assays that Eg5 has the remarkable capability of simultaneously moving at ~20 nm s^{-1} towards the plus-ends of each of the two microtubules it crosslinks. For anti-parallel microtubules, this results in relative sliding at ~40 nm s^{-1}, comparable to spindle pole separation rates *in vivo*[6]. Furthermore, we found that Eg5 can tether microtubule plus-ends, suggesting an additional microtubule-binding mode for Eg5. Our results demonstrate how members of the kinesin-5 family are likely to function in mitosis, pushing apart interpolar microtubules as well as recruiting microtubules into bundles that are subsequently polarized by relative sliding.

Published: 05 May 2005

The bipolar mitotic kinesin Eg5 moves on both microtubules that it crosslinks

Lukas C. Kapitein, Erwin J. G. Peterman, Benjamin H. Kwok, Jeffrey H. Kim, Tarun M. Kapoor & Christoph F. Schmidt

Nature **435**, 114–118(2005) | Cite this article

3168 Accesses | **430** Citations | **2** Altmetric | Metrics

Abstract

During cell division, mitotic spindles are assembled by microtubule-based motor proteins[1,2]. The bipolar organization of spindles is essential for proper segregation of chromosomes, and requires plus-end-directed homotetrameric motor proteins of the widely conserved kinesin-5 (BimC) family[3]. Hypotheses for bipolar spindle formation include the 'push–pull mitotic muscle' model, in which kinesin-5 and opposing motor proteins act between overlapping microtubules[2,4,5]. However, the precise roles of kinesin-5 during this process are unknown. Here we show that the vertebrate kinesin-5 Eg5 drives the sliding of microtubules depending on their relative orientation. We found in controlled *in vitro* assays that Eg5 has the remarkable capability of simultaneously moving at ~20 nm s^{-1} towards the plus-ends of each of the two microtubules it crosslinks. For anti-parallel microtubules, this results in relative sliding at ~40 nm s^{-1}, comparable to spindle pole separation rates *in vivo*[6]. Furthermore, we found that Eg5 can tether microtubule plus-ends, suggesting an additional microtubule-binding mode for Eg5. Our results demonstrate how members of the kinesin-5 family are likely to function in mitosis, pushing apart interpolar microtubules as well as recruiting microtubules into bundles that are subsequently polarized by relative sliding. We anticipate our assay to be a starting point for more sophisticated *in vitro* models of mitotic spindles. For example, the individual and combined action of multiple mitotic motors could be tested, including minus-end-directed motors opposing Eg5 motility. Furthermore, Eg5 inhibition is a major target of anti-cancer drug development, and a well-defined and quantitative assay for motor function will be relevant for such developments.

[Source: Kapitein, L., Peterman, E., Kwok, B. et al. (2005) The bipolar mitotic kinesin Eg5 moves on both microtubules that it crosslinks. Nature 435, 114–118.]

Structured writing in DITA

What is DITA?

DITA is the abbreviation of "Darwin Information Typing Architecture," which is an open standard for the community supported by OASIS. It is proposed by IBM. DITA is an XML-based system, and it is a tool-independent development method for creating, organizing, and managing content. Using DITA can solve the problem of single-sourcing and data reuse in development.

Basic concepts in DITA

The core concept of DITA is structured writing based on topics, and each topic is an independent dita file. The topic here refers to a specific unit of information used to describe a single task, concept, or reference information. By "specific" we mean that the granularity of the topic division can solve a single actual problem or illustrate an independent theme.

Topic-based structured writing is a method of content creation. It enables content to be built around the same topic. The created topics can be combined or grouped according to certain rules and can also be referenced in different documents. The rationale behind topic-based writing is typical structured thinking, completely different from the linear structure of

writing we have seen in a book or narrative. DITA treats a topic as an independent content module that contains specific content and has a clear purpose. A topic only deals with one single concept, or completing one task, or referencing one source. The topic is self-contained, requiring readers to understand its meaning even without context.

DITA has three basic types of topic: concept, task, and reference. Each information unit in DITA serves as an independent reusable topic and is stored in the topic repository without context.

A **concept** answers the question of "what," introducing background and other general information about the product or service and providing users with much-needed information before using it.

Here is an example of concept programed in XML[1]

```
<concept id="concept">
    <title>Bird Songs</title>

<shortdesc>Bird songs are complex vocalizations used to attract mates or defend
territories.
<conbody>
    <p>Bird songs vary widely among species, from simple songs that are genetically
imprinted to complex songs that are learned over a lifetime.</p>
    <example>
        <p>Flycatchers know their songs from birth:</p>
        <ul>
            <li>Flycatcher songs are simple sequences of notes.</li>
            <li>Flycatcher songs never vary but are unique to each member of the Flycatcher
family.</li>
            </ul>
        </example>
    </conbody>
</concept>
```

1 Source: https://www.oxygenxml.com/dita/1.3/specs/langRef/technicalContent/reference. html.

A **task** answers the question of "how to," using a clearly defined structure to describe the methods and steps required to accomplish a specific goal. Tasks include context, preconditions, steps, expected results, examples, next steps, etc.

Here is an example of task programed in XML[1]

```
<task id="sqlj">
  <title>Creating an SQLJ file</title>
<taskbody>
  <context>Once you have set up SQLJ, you need to create a new SQLJ file.
  </context>
  <steps>
      <step><cmd>Open...</cmd></step>
    </steps>
  </taskbody>
</task>
```

A **reference** provides tips on related facts. In the case of technical information, references are often used for command prompts in programming languages.

Here is an example of reference programed in XML[2]

```
<reference id="refexample">
  <title>A reference topic</title>
  <refbody>
    <refsyn>Describe command or api syntax here, possibly
using synph or syntax elements markup for explicit
definition of syntax or prototype construction.</refsyn>
    <section><title>Some section title</title></section>
    <properties>
      <property>
```

1 Source: https://www.oxygenxml.com/dita/1.3/specs/langRef/base/topic.html

2 Source: https://www.oxygenxml.com/dita/1.3/specs/langRef/technicalContent/reference.html

```
            <proptype>type</proptype>
            <propvalue>value</propvalue>
            <propdesc>description</propdesc>
        </property>
    </properties>
  </refbody>
</reference>
```

This classification of three types of topics is very useful because it covers the objects in technical writing. Technical writers can categorize the content they are working on, and all the structured content later can be easily managed as single reusable units through content management system. Writer can select and combine multiple topics in different contexts, and the arrangement and processing of topics can generate a variety of documents. The newly generated documents can take various forms: it could be a topic that needs to be updated and reviewed, a collection of information that should be embedded in the user help application, or a single chapter in a booklet.

In addition to the three main types, DITA also defines other topics (including *general, troubleshooting, glossary,* and other topics) to cover content that the main topics cannot do. For more detailed DITA subject specifications, please refer to the online DITA specification document at https://www.oxygenxml.com/dita/1.3/specs/index.html.

Here is an example of a general topic programed in XML[1]

```
<topic id="topic">
<title>Some little topic</title>
<body>
        <p>Here's a little topic.</p>
        <ul>
        <li>Some item</li>
        <li>Another item</li>
```

1 Source: https://www.oxygenxml.com/dita/1.3/specs/langRef/base/topic.html

```
        </ul>
    </body>
    </topic>
```

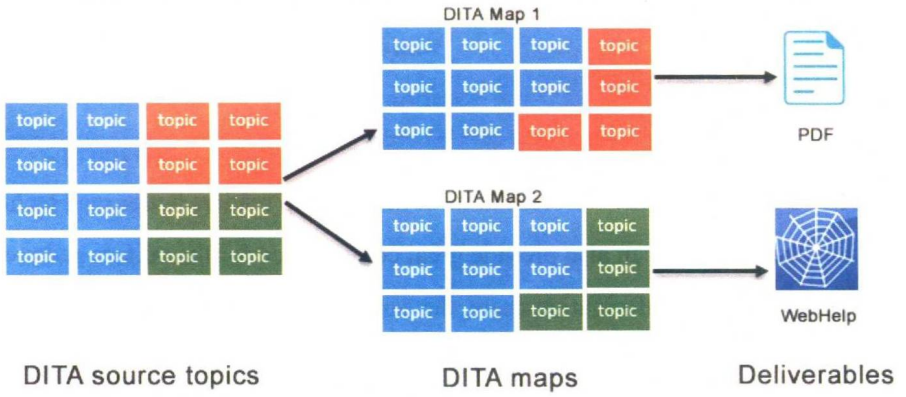
The value of DITA is not only reflected in its ability to help readers better read technical documents, but also in that it can also provide great convenience for the editors and creators of technical documents. For information users, the carefully created, subject-based content can greatly improve the searchability, navigability, and usability of documents. For the document development team, the topic-based creation method can also support reusing and rapid reorganization of information, as well as convenient file management and more flexible links.

In addition, DITA, just like other structured writing methods, can enhance content consistency. In DITA, once a topic is completed, it must be reviewed and approved by subject experts. By reusing topics from the same source, DITA guarantees the consistency of topics. No matter how many times the content is published, one review is enough, which reduces workload of subject experts. Moreover, DITA automates the delivery of topics, which also effectively saves time and costs of publishing. In addition, the combination of DITA topics is very flexible: it can be a part of a large-scale information product, or it can be released separately, such as a section in a software help system. You can not only use DITA to publish task-based content, but also publish related content such as help information embedded in the software. A single topic can also be sent to translators for translation before the entire content piece is completed, which shortens the time for translation and thus reduces the time for publishing to global customers. Since the content is pure text, no typesetting is needed and it saves money.

Development process in DITA

The process of a professional document team using DITA for document development roughly follows the following steps:

1. The information architect designs the document outline and creates the DITA map file and topic file according to the outline;
2. The writer is responsible for writing content of each topic;
3. Publish content by using DITA map and topics



An example of DITA map

DITA map refers to an XML-like file that organizes DITA topics and other content resources in a certain structure, with ditamap as the file name suffix. A DITA map can be regarded as a catalog file linking specific topics. It describes the levels and relationships between topics and defines the content structure of the published products.

Here is an example of a DITA map file in XML[1]

```
<map id="mybats">
  <title>Bats</title>
  <topicref href="bats.dita" type="topic">
    <topicref href="batcaring.dita" type="task"></topicref>
    <topicref href="batfeeding.dita" type="task"></topicref>
    <topicref href="batsonar.dita" type="concept"></topicref>
    <topicref href="batguano.dita" type="reference"></topicref>
    <topicref href="bathistory.dita" type="reference"></topicref>
  </topicref>
</map>
```

1 Source: https://www.oxygenxml.com/dita/1.3/specs/langRef/base/map.html

Lightweight DITA

Lightweight DITA, abbreviated as LwDITA, is a lightweight DITA standard. Compared with DITA 1.3, LwDITA has the following characteristics:

- Fewer element types
- Fewer attribute values of elements
- The content model is stricter
- Fewer features
- New multimedia element types

In addition, one of the biggest features of LwDITA compared to DITA 1.3 is that it can establish mappings between XML, HTML5, and Markdown files. That is, LwDITA supports the creation of content mappings composed of topic files written in three different markup languages. In short, using LwDITA, you:

- can experience a more concise and lightweight DITA;
- do not have to worry about the "forcible consistency" of the file format if you are working with technical writers with different format preferences;
- easily convert and publish source files written in different markup languages

A brief comparison of DITA and DocBook

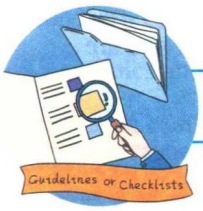
DITA and DocBook are two common standards in the field of digital publishing. Both solve the problems encountered in the process of document delivery by defining standardized document description rules. For different types of delivery publications, DITA and DocBook each have their own strengths, but they also have their own limitations in practical applications.

DITA solves the problem of structured description and content reorganization of publications, supports production of multilingual versions, and is suitable for technical manual publications with strict restrictions on format. However, DITA cannot achieve perfect style rendering, and for complex publications with integrated content and format, it is difficult for DITA to define and divide topics, definitions and divisions. Therefore, DITA is not a good option for book publishing as the cost and difficulty are relatively high.

In comparison, DocBook is suitable for general publications, and documents are easy to organize and typeset. However, DocBook content is organized in sectional paragraphs and due

to the lack of content mapping mechanism of DITA, DocBook cannot achieve content division and reorganization with a granularity as refined as DITA topics. For documents whose content needs frequent modification, Docbook is also inadequate.

DITA and DocBook focus on delivering technical information, but DITA focuses on delivering topics while DocBook focuses on delivering books. DITA provides information classification based on topic-level granularity, allowing authors to organize and describe specific areas of information. In the process of generating information reuse in multiple document formats, a high degree of consistency in content can be maintained. In terms of the output format of the final deliverables, DITA can generate most of the publishing delivery types, such as PDF, CHM, and HTML. As for DocBook, the commonly used delivery formats are PDF and HTML, and additional function plug-ins are needed if other output formats are requested.



GUIDELINES OR CHECKLISTS

Before your company looking for a DITA tool, it's important to understand DITA itself and find out if it's right for you. Here is a quick guideline for you to start:

- □ Does my organization reuse content? (e.g., do we reuse content between products or different types of publications like training manuals and marketing materials)?
- □ Do we deliver content in multiple languages?
- □ Do we publish to different types of audiences and users?
- □ Do we struggle to maintain consistency (e.g., terminologies and writing styles) between documents?
- □ Do we have difficulty keeping documents up to date?
- □ Do we have problems keeping documents in a shared location (e.g., a single source or a cloud storage place)?
- □ Do we deliver content in multiple formats (print, PDF, help, web, mobile, etc.) from a single source?

If you have more than one "yes," DITA might be the solution for your organization. The more "yeses" you get, the stronger your case for DITA.

EXERCISES

1. Can you think of a document you have created that is structured writing? How did you write it? Will you construct it in a different way after reading this chapter?
2. Your university has renovated a few "smart classrooms" and equipped them with advanced technologies. However, many instructors are struggling with the use of new technologies in these smart classrooms. You are considering creating a quick guide for the projectors. Please use DITA framework to write one concept, one task, and one reference.

Chapter 11

Methods in Technical Document Development and Assessment 1: User Research

Contents

CASE 230

GLOSSARY 231

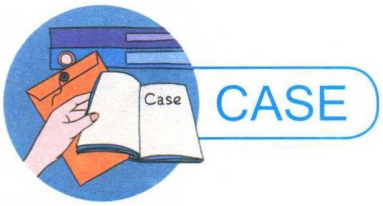
TASKS 238

- Product-centered vs user-centered research 238
- User research defined 239
- How to do user research 240

LANGUAGE FOCUS 253

GUIDELINES OR CHECKLISTS 254

EXERCISES 256



You are a technical writer at a company that primarily communicates with its customers electronically because they live in many different places and your company provides its services via internet applications. Thus everything you write is digital.[1] There are, however, some local users who may prove useful for user research purposes.

You have been asked to build a digital company store. It would be a small part of the application your company sells, but selling merchandise with the company logo on it appeals to your boss. When you were told about the project, you asked, "What items should we sell?" and were told, "t-shirts, water bottles, you know, branded merchandise." You admire and respect your boss. But her directive is vague. Moreover, she has assumed that a digital company store is a good idea.[2] Why? Does she think it will make money? Is that the goal? Does she think it will get the brand out into the world where people who do not use the application will see it and be intrigued, thus increasing sales of the application itself? Is that the goal? Does she think it will increase user engagement with the application? Is that the goal? What would success look like to her and how would you measure it?

At this point you might want to interview your boss, to find out what her goal is so you have a better chance of meeting it.

If she wants the company store to make money, then you need to know what to sell and how to sell it. If she wants to increase user engagement, rather than selling merchandise, perhaps you should offer it as a reward for spending more time on the app or maybe using more features of it or both? If she wants to get the logo out into the real world where people who do not yet use the application see it, become intrigued, talk to the person who has the water bottle or whatever, and thus become a customer, then new sales of the main app is the

1 All writing today is digital. It's no longer just words but images, photographs, graphs, buttons, menus and videos. Technical writers are far more than just writers and so rather than speaking and thinking in terms of documents it makes sense to think in terms of digital information products.

2 So did you because you asked "what" instead of "why."

goal and the purpose of the "store" is to create influencers who will promote the product for the cost of a branded water bottle or tea infuser or t-shirt or whatever. Each of those goals is measurable, so in each case you could report the success of the effort.

But she just handed you a directive and walked away. So you need to research how to design and implement a digital company store, keeping in mind that the research results may send you back to your boss with disappointing or perhaps just pivotal news. Where do you start? Should you start with the stock? With the shopping cart? Or with your company's users?

A/B testing /eɪ///bi/ /ˈtɛstɪŋ/

Randomly providing different information products to users to discover which one works best. Websites often test landing screens this way. Some potential users see one screen while others see a different one and the design that gets the most people to click through to the inside is the one chosen. Any information product the success of which can be readily measured is a good candidate for A/B testing. You may offer more than two alternatives, A/B/C testing and so on. A/B 测试

branching question /ˈbrænʧɪŋ/ /ˈkwɛsʧən/

Often the answer to one question suggests others. If a person says he does not buy logo-branded merchandise, you need to stop asking questions of that person. If he says he does, then you would branch to ask what kinds and of those who say which kind there might be subsequent questions to follow up with. Branching questions save respondents' time. You do not want frustrated or fidgety subjects. 分支问题

confidence level /ˈkɑnfədəns/ /ˈlɛvəl/

How certain you are that your results are accurate when you administer a survey or questionnaire? A reliable survey will have a confidence level of 95% or better. If you know who your potential population is and you know that you have gathered information from more than half of them, then you have greater confidence than if you do not know who the potential population is and so have no idea what percentage your informants represent. 置信水平（统计学术语）

convenience sample /kənˈvinjəns/ /ˈsæmpəl/

A population composed entirely of people who just happen to be available. Psychology experiments in America, for example, almost always have study participants drawn from university psychology

classes because the people performing the experiments teach hundreds of students a semester. To make getting subjects easier, there is often a participation requirement, institutionalizing the practice of having subjects between the ages of 18 and 22, from relatively affluent backgrounds, often from the same part of the country, undergraduates from X university, in other words. The problem with a convenience sample is that they are not randomly chosen and they may not be representative of a wider population. 便利抽样的群体

ethnography /ɛθˈnɒgrəfi/

A branch of Anthropology where the researcher goes to live for an extended period of time among the research subjects in order to discover how those people experience their world. While prolonged immersion is impractical in a business setting, the goals of ethnography are consistent with user research in general, in particular the goal of understanding the other person as they understand themselves and not as they seem to an outsider. It doesn't matter what you think of your product. What they think based on what they do with it is what matters. 人种志（一种研究方法，多用于用户研究、人类学、社会学研究）

focus group /ˈfoʊkəs/ /grup/

A group of people invited to the same space at the same time to discuss something. Typically such a group would represent the same user type, but you could have a wider array of representatives. The idea is to brainstorm ideas or get quick feedback on some ideas with an immediate follow up opportunity. Focus groups can be an efficient way to gather information but group-think can provide compelling evidence for what turns out to be a bad idea. Also if one person in the group is inclined to lead, the others may follow and thus your data will be skewed in the dominant's direction. Since people like to be agreeable, it's possible the first idea floated will get positive attention and so inadvertently keep other ideas from surfacing. If you are leading a focus group, you need to start broad and inclusively and narrow the focus slowly. 焦点组，一种用户研究方法

heuristic analysis /hjʊˈrɪstɪk/ /əˈnæləsəs/

A design method based on what expert users say about how a product should be designed. They may be industry experts or they may simply be experts for that particular product. The benefit of the heuristic method is that it is fast and efficient. The risk is that the experts' assumptions and beliefs may not coincide directly with the target users'. 启发式分析法

interview /ˈɪntərˌvju/

Face-to-face question-driven conversation where the interviewer records the answers for further analysis later. Recordings should be transcribed, for coding purposes, so you can identify themes and ideas repeated by many users in a particular user group. Often it is best to have two people doing the interview, one to ask the questions and engage naturally with the interviewee and one to record the conversation. You can't listen and fiddle with your equipment simultaneously. Watching closely and listening carefully at the same time is also challenging. The questions should be scripted in advance

and while you need to let the conversation happen like an organic conversation, you also need to make sure each participant gets asked the same questions phrased in the same way because how you phrase a question can influence how it gets answered. The order matters as well. For example, if you ask a series of questions the answer to which is always going to be "No", you might be putting your subject in a negative frame of mind. If you ask them to talk about what you know is a positive experience, you are cheering them up and so likely to get a more optimistic answer to the next question. You do not want to bias your data, even inadvertently. 访谈法

Likert scale /ˈlɪk.ərt/ /skeɪl/

A method for measuring subjective impressions on a scale from zero to full or low to high. Typically people use an even number of graduations on the scale so that people can't choose a non-committal middle score. If, for example, you offer 5 graduations, your respondents will tend toward 3. If you offer 4 or 6, then people have to pick a side.

Example: On a scale of from 1 to 4 where 1 is not helpful and 4 is very helpful, how to do you rate this section of this book?

1----------2----------3----------4

To get truly insightful information from this method of subjective measurement, you need to label each option: 1 = not helpful, 2 = somewhat helpful, 3 = helpful, 4=very helpful. You also need to know precisely what differentiates "somewhat" from "not very". Thus Likert scales are often a good place to start, but a bad place to stop. You almost always need to follow up with a questionnaire to find out what didn't work for them that led them to say somewhat helpful, what worked and what didn't. The only time a Likert scale is useful on its own is when the options are unambiguously different. A classic example is the ☺☹ you might see at the exit of a bathroom in an airport. Different cultures and different people within the same culture have different ideas of cleanliness, but there's enough overlap to make a simple yes or no useful, especially if you have more than just a few data points. 里克特量表（一种非常常用的心理测量量表）

leading questions /ˈlidɪŋ/ /ˈkwɛsʧənz/

A statement disguised as a question. For example, asking "You found the recent changes to module C helpful, right?" is leading. "Were the changes in module C helpful?" is not leading. However, even the improved version needs some work. Which changes specifically? If there were several changes the question didn't differentiate and so you do not know precisely. If you ask someone, "How has the canteen food improved?" You are assuming that they think or are willing to accept that it has. Assumptions can create leading questions, so inspect the assumptions. Also keep in mind that an innocent question can turn another innocent question into a leading question. The order matters.

You can get "data" supporting any kind of nonsense just by asking the right people the right questions in the right order. You can, but of course you shouldn't. 引导性问题，暗示性问题

margin of error /ˈmɑrdʒən/ /əv/ /ˈɛrər/

The range the survey results will fall between if your confidence level is accurate. If you've seen fifty frowny faces show up on your dashboard in the last fifteen minutes, how confident are you that the bathroom needs cleaning? And what are the chances the bathroom will not actually need cleaning when you go to clean it? 误差范围

mental model /ˈmɛntəl/ /ˈmɑdəl/

Assumptions a person has about how something works and therefore how to use it. If a person sees an American or Canadian light switch, they will know to flick it up for on and down for off. What if the switch is mounted sideways? Well, if it still looks like a switch, they will know to flick it right for on and left for off. If it's reversed, feedback will instantly explain. If the switch doesn't look like a switch at all but is where one will tend to find a switch, then a person will assume it is one and try to figure out how it works by trial and error. If you have traveled internationally, you will know that switches vary almost as much as shower attachments do. If you design things, you need to know how people expect them to work and accommodate those expectations in some way. As a researcher, your goal is to discover users' mental models and to use that knowledge to design and test the usability of your information products. A classic example is feedback. When a user interacts with an information product, pushes a "button", for example, they expect it to behave like an actual button would. If they upload something, they expect confirmation of receipt. If you do not provide feedback, a user will suspect something is wrong and likely repeat the action, which clutters your data and frustrates the user. 心智模式

N value /ɛn/ /ˈvælju/

The number of people who actually responded to a survey or questionnaire as contrasted with the number of surveys or questionnaires you sent out. The higher the N, the more representative your sample. N 值，指提供有效作答的被试数量

observational research /ˌɑbzərˈveɪʃən(ə)l/ /riˈsɜrʧ/

A form of research where the researcher goes to the subject's personal space, their natural habitat, as it were, and unobtrusively watches them do what they do. While you can record screen-based tasks remotely, ideally you are co-present with at least some of your subject so you can get a three dimensional feel for what their work life is like. You want to know what it's like to be them while they are using your product, to the extent such a perspective is possible. Observational research can be expensive, and it is invasive and time consuming. But it can yield important insights. If, for example, you were researching users of your logoware shopping cart and you went to a user's dorm room and saw not one logoware product, you might figure the problem that user represents has nothing to do with the shopping cart or the product descriptions. It looks as though they dislike products with logos on them. 观察研究

personas /pərˈsoʊnəz/

A persona is a research-based representation of a segment of your users, depicted as a real person. The research upon which a persona is based is typically done through client feedback, questionnaires, surveys, focus groups, and interviews. The information gathered should make it possible to predict behavior. A persona is not a stereotype. It is not a character, and even less a caricature. A persona is a concrete generalization that accurately represents the data derived from an audience segment. Businesses use personae to make sure that everyone writing for the company – or designing for the company – has a clear sense of who they are writing to and working for. Persona descriptions tend to be attached to a photograph of an actual person. I've seen life-size cardboard cutouts with note cards taped to the wall around them. More common, though, are photos. The goal is to get a real sense of actual people with specific problems and attitudes so that as you write you do not just write for some abstract, disembodied, and undifferentiated "user". （人物、群体的）画像

prototype /ˈproʊtəˌtaɪp/

A mock up or model of a product or service. A prototype might be high fidelity, looking and feeling almost like the real thing, or low fidelity, like a drawing or even a simple sketch. The idea is to make something that another person can interact with sufficiently for you to test whether or not it makes sense to someone else and they understand how they would use it. A prototype should be easy, quick, and cheap. If you are planning to sneak a bit of a sales pitch into the research or if the product you are developing is very complex, you will want to go with a high fidelity prototype. If the setting is casual, if you know the representative user pretty well, you might just sketch out what you have in mind.（产品的）原型

qualitative research /ˈkwɑləˌteɪtɪv/ /riˈsɜrtʃ/

Research that produces data in the form of narratives which provide insight into how an individual thinks about something or feels about something. If you have many narratives and you can find common themes, then you can generalize to a larger population with a bit of confidence, but if you have only one respondent, or no discernable themes among many respondents, then all you have is anecdotal evidence, not generalizable at all. 定性研究

quantitative research /ˈkwɑntɪˌteɪtɪv/ /riˈsɜrtʃ/

Research that produces numerical data, statistics typically. Quantitative data is precise if the questions that produced it and the range of possible answers offered are precise. That precision can be powerful, especially if the number of respondents (the N) is relatively large. 定量研究

questionnaire /ˌkwɛstʃəˈnɛr/

The questions you ask of people whom the survey identified as relevant for further research. You use the survey to identify potential users and, if possible, also to group users into general types. Then you use the questionnaire to look more closely at each user group and to locate people who will let you observe and interview them. 调查问卷

representative sample /ˌrɛprəˈzɛntətɪv/ /ˈsæmpəl/

An unbiased cross section of a total population. It is foolish to assume that all users of an app are alike. But how many significant variations are there? How many users would you need to survey to feel confident that you have identified all of the salient variations? 代表性样本

sample size /ˈsæmpəl/ /saɪz/

The total population is the number of people who can respond to a survey or questionnaire. If you have 1000 customers, your total population is 1000. The sample size is the least number of people you need to survey or question in order to know you have understood the population as a whole. If you are working in a digital environment, you can send a survey to all users inexpensively and so you do not necessarily need a sample size. However, even electronically you can't interview everyone. So you need to settle on a representative sample size before you start interviewing. The questionnaire should help with that. 样本量

survey /ˈsɜrˌveɪ/

A survey is a research instrument used to acquire general demographic and other kinds of statistical information (age, gender, location, profession, experience, etc.) and to discover what further questions need answers. In the context of user research for information products, you use a survey to identify as many relevant users as possible, so you have a large pool of users to send your questionnaire to. You may also be able to use the questionnaire to locate user groups, although you may need a questionnaire for that. In a digital environment, an initial survey may be unnecessary as the user data might identify the groups and the individuals you can follow up with. In our extended example of the logoware shopping cart, you could tell from the passively collected data who used the shopping cart, who didn't and who tried to but didn't complete the transaction. Given those three populations, you could then send each a different follow-up questionnaire to gain specific insights into the different user types. 调查，调查研究法

task analysis /tæsk/ /əˈnæləsəs/

Any research designed to describe a job as a step by step process. Task analysis should be done by both having informants describe what they do and by watching them do it. People are generally not very good at self-reporting, and so watching can verify, but watching is also important because some important things may only be visible to an outsider. In an electronic environment, you could think of a link path as a task analysis, first they click this, then this, then this. But watching someone actually click the links, as opposed to just seeing the evidence that they had, might tell you something the link trail alone can't. Also, if you are there to see them click on links, you can ask them questions or ask them to think out loud as they click. 任务分析

testable hypothesis /ˈtɛstəbl/ /haɪˈpɑθəsəs/

A statement that research can prove either true or false, either absolutely or with a great enough

probability that further money might be spent on further research or no money wasted. 可检验的假设

think aloud protocol /θɪŋk/ /əˈlaʊd/ /ˈproʊtəˌkɑl/

Asking a person to say what they are thinking as they do something can give you insight that observation of behavior alone can't provide. Since speaking while doing something can alter the way a person does the task, and can interfere with doing it correctly, a plausible alternative is to video the subject performing the task and then ask them what they were thinking at each stage as you watch the replay together. 出声思维报告、有声思考法

user research /ˈjuzər/ /riˈsɜrʧ/

Any process designed to collect and analyze data to understand how information products can help an intended user do what they are trying to do (or in our case what you want them to do – buy branded things in a company store). You need to know: what the job is, who does it, how they do it, in what situations (does the documentation need to be water proof? Do you need different kinds for different kinds of users, etc.), under what emotional load? You also need to know how to measure the information product's success, which requires defining "success" in a measurable way. 用户研究

user-centered design /ˈjuzər/-/ˈsɛntərd/ /dɪˈzaɪn/

Building a product from the users' perspectives rather than from the engineers' or the accountants' or the marketing teams' perspectives. 以用户为中心的设计

user-experience research /ˈjuzər/-/ɪkˈspɪriəns/ /riˈsɜrʧ/

An ethnographic research method using surveys, questionnaires, interviews, task/observational analysis, prototyping, and usability testing to find out how people feel about a product or service while using it. The goal is to discover how a user experiences a product in order to find ways to improve the product. This process is often referred to as UX, and the expression "UX" is often used for all kinds of user research and sometimes for usability as well. 用户体验研究

usability research (also usability testing and sometimes just usability) /ˌjuzəˈbɪlɪti/ /riˈsɜrʧ/

Any research method that shows you how easy it is to make a product do what it is supposed to do, a way to avoid user errors in advance and user frustrations and phone calls down the road. The difference between usability research and user-experience research is that the former cares only about whether or not any given user can make the product do what it is supposed to do while the latter is focused on understanding what the user feels and perceives while using the product, recognizing that not all users are alike. Usability is a sub-set of user-experience research. 可用性研究

Product-centered vs user-centered research

A well-designed product (or information product) has no learning curve. Just looking at it tells you how to use it. Using it is effortless. You can forget about it and concentrate entirely on the work it is specifically designed to facilitate. Well-designed products leave you feeling good about yourself because they help you do your job well. And that makes you feel good about the product in return, if you stop to think about it.

Well-designed products are rare because not everyone does everything in the same way and the people who make products do not always understand how the people who need them use them or in some cases even who those people are. The carpenter's hammer is a good example. If you look for a hammer made in America in the 1970s, you will find they are all the same, partially because they were mass produced on single-purpose equipment but also because it was assumed that the only people who needed to hammer nails were carpenters and all carpenters were men with average-sized hands.

In the not so distant past, products were designed and created by engineers who had a particular job in mind, a specific sense of how to do that job, and assumptions about who would be doing that job. Once the product worked to the engineers' satisfaction, it was assumed others who needed to do the same job would find the product similarly useful and so it was sold as is. A product designed from the designer's point of view will work only if everyone who needs it uses it the way the designer intended. This was why technical writers in the past wrote documentation to accommodate the user to the product. In user-centered industries, technical writers engage in research prior to production so the product accommodates the intended users, their perspectives on the work and their ways of doing it.

Nowadays, carpenters' hammers come in different weights and lengths, partially because digital manufacturing techniques are more flexible but also because the *differences within the hammer-buying population are better understood*. Such understanding comes from user research.

User research defined

User research is the process of discovering how a product will be used by the people who will use it. Ideally that research is done before the product goes into production. The goal is to know who the intended users are and how they work and how they think, or at least what relevant assumptions they have about how the product is supposed to work (known as a mental model, *so the product can be designed specifically to facilitate the work those people do in the ways they do it*).

If we took a product-centered approach to our digital company store, we would find an on demand printing company, send it our logo and stock our virtual store with images of all the different merchandise that could have our logo printed on it. Then we would create or buy a shopping cart and check-out process. And then we would sit around hoping stuff sells. Perhaps when the first quarter sales reports came in we would see that only some items sold and so we might mass produce those to reduce costs. Or we might discover that sales are non-existent and the enterprise was a waste of time.

But we are not product-centered; we are user-centered. We do not want to start with the store. We want to start with the users. Research isn't cheap, but it is cheaper than producing and attempting to sell a failed product.

How to do user research

User research can be expressed as a linear process, but it may be non-linear in practice. Some steps may be unnecessary in some cases. In some cases you might need to repeat a step several times to get enough information to successfully perform the next step. And given a digital world, where continuous refinement based on continuous learning from user behavior and experience is the norm, user research tends to be more loop than line.

If you have the time and resources for a full-on research initiative, your user-research paradigm might look like this:

1. Identify the problem (or goal)—you might need to interview users or observe them using an existing product
2. Discover potential solutions (or ways to achieve the goal)—look at what other companies are doing, consult your own experience (see heuristics in the Glossary), and then focus directly on your company's users
3. Survey all possible users (all is only possible if you are selling an app. If you are selling a physical product, you need a representative sample. See the Glossary)
4. Create and distribute a questionnaire based on the survey results
5. Observe different kinds of users experiencing the problem perhaps in different ways
6. Analyze what each kind of user does, do a step by step (task) analysis
7. Interview a representative of each different kind of user to verify what you think you observed and what they reported
8. Create a prototype solution
9. Test it with each of the different user groups
10. Refine the prototype (and refine your understanding of each group if observing each in action told you something)
11. Repeat if necessary
12. Report the results and recommendations to those who will produce the product

What is the problem or the goal and what are the different ways it might be solved or achieved? Survey the prospective users to see which approach will work best and segment the potential population into user groups, since not all users need the same features or think about the work in the same way nor even do the same work in some cases. Design a questionnaire

the answers to which will provide insight into how each user group works and how they think while also identifying those willing to let you observe them do what they do. Design a prototype. Ask the representative of each user group to test the prototype while you watch. Ask them to identify things they like and do not like while you observe their experience of the prototype. Then redesign and retest if necessary. Finally, report the research results and make recommendations to those who will put the product into production (or cancel the project if that's what the evidence indicates should be done. Research entails risk. You do not always find what you were hoping to find).

The full user-research process assumes you have direct control throughout. However, in most work settings you will not. You will need to take the research results generated by each step to your boss and convince her to let you take the next step. User research is relatively new, and not all companies are willing to engage in it deeply or pay for it fully. So you will probably need to work fast and cheap and anticipate resistance. Regardless of how your company values research, you will also need to tailor the process for the circumstances.

If you need to ship a product quickly, for example, you might use a paradigm like this:

1. Survey to identify the problem
2. Questionnaire to identify possible solutions
3. Prototype for testing purposes
4. Test to see how well prototype works for the intended users
5. Refine if necessary
6. Report to get proposed solution into production

In other words, find out what people think they need. Verify that is what they need. Build a prototype and test it to make sure it does what's needed and is as easy to use as it might be and then get the solution approved for production.

If you were asked to build an app to help people perform a set of tasks for which there was as yet no product, you might use this user-research paradigm:

1. Task Analysis—find out how people do what they need to do and each of the different ways it can be done
2. Prototype
3. Test
4. Refine prototype

5. Report

What you do and the order you do it in are almost always determined by where you start. If the product is already in production, you need to find out how people are using it. There are successful, unsuccessful and unintended uses. There are also usability errors and user errors, and knowing the difference is critical to refining user experience. You also want to know how users feel about using the product. Then based on what you learned you would recommend changes to the product.

If the product is just an idea aimed at helping people do something you know they are already doing, then you need to start by observing people doing that thing to make sure you know all of the steps involved and how each step is or can be performed. You also need to discover all of the different ways people might do the same thing. You would then verify your task analysis by interviewing potential customers, to make sure that what you saw was what they were actually doing and to discover their expectations about how the product should work, as well as their frustrations and wishes for enhancements. Enhancements are dangerous territory. Just because people want something doesn't mean you should make it happen. People often do not really know what they want, and sometimes giving it to them will actually diminish their experience of the existing product. More isn't always better. In the next section we will use the company store example to illustrate each of the elements of user research relevant to our current case.

Identify the problem

You were told to build a virtual company store. That's the goal. You are not sure why your boss wants a company store, but you've not had the opportunity to get clarity from your boss so you've designed a research process that will test the viability of the goal while gathering information that can be used if the goal proves viable or suggest an alternative if the results indicate an alternative is necessary.

Survey: Identify the potential population. Your potential population is all existing users, but they are busy doing what your product helps them do. They may resist participating, so you want to make participating as quick and easy and as attractive as possible. You want to interrupt your users as little as possible and still learn what you need to know about who they are and how they think.

You might ask, "Would you buy a company-branded hat from us?" But that's a hypothetical question rather than a real one, and so the responses you get will not be entirely useful because people do not answer hypotheticals as they do real questions. That question is also a complex question, two questions that look like one. 1) Would you buy anything with our logo on it? 2) Would you buy a hat with our logo on it? Because we asked a complex question, we do not know how to interpret a no response. Does "no" mean nothing with our logo on it or just "no" to a hat with our logo on it? A more effective question would branch. "Would you buy merchandise with our logo on it?" If no, end. If yes, "Would you buy a hat with our logo on it?"

Even asking "Would you buy merchandise with our logo on it?" isn't perfect because the answer is only relevant to the company store research. If you are going to interrupt all of your users, you need to get the most broadly useful information possible.

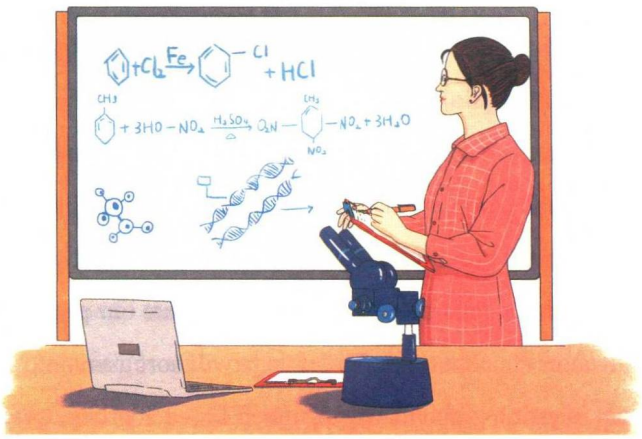
So it is better to start with a general-population filter: "Rate our product on a scale from 1 to 10" (see *Likert scale* in the Glossary). The ratings will sort users into 10 groups and you can then ask follow-up questions specifically designed for each group, questions that will help understand what distinguishes an 8 from a 10. If that kind of precision is impossible, the characteristics typical of those in the range from 8 to 10 might still be useful.

You hypothesize that users who give a rating of 8 or better are the users most likely to buy something from your company store because they are the most satisfied with your product and it seems plausible that the more satisfied a person is with a product, the more closely they identify with it and therefore the more likely they are to buy something with the company's logo on it. If that proves the case, you can focus your further research on the 8s, 9s, and 10s, keeping the rest as potential sources of information for other research projects.[1] However, an untested hypothesis is just an assumption. You need to verify your assumptions.

It's important to realize that because your company sells digital products, its server logs contain a great deal of user information and so it might be possible to segment your users without surveying them. You might be able to learn, for example, that the 9s and the 10s

1 The users who rate your product a 7 or an 8 might be struggling to use it or it might lack features they want. Knowing those user needs would enable product improvements. At the moment you are focused on testing the company store idea. But the more general usability information may be very helpful to others in your company or to you later on.

spend more time on the app than the 8s and the 7s who spend more time than the 6s and 5s. What can you infer from that and how might you test the inference? You might learn the opposite, that the higher the rating the lower the time on app. What does that tell you? The app is more of a tool than an experience. People like it because it helps them get a job done; its value is instrumental. Is that consistent with the company's perception of its product? If not, can subsequent research suggest an alternative approach?



Questionnaire: Once you know how each[1] of your users (your potential population) feels about your product, you can group them according to their ratings and then ask different questions of each group. You can use a questionnaire to test your hypothesis that 9s and 10s will purchase products whereas the others will not.

You can also use the questionnaire to ask if they are *willing and* able[2] to work with you to develop your product, which sounds nicer than, "be a research subject," although that's what they would be. You need to locate your next level respondents.

---

1 You will not get everyone to respond unless you lock a user out until he rates the application, which risks infuriating your user and skewing the rating left. The number of respondents you get is referred to as your N (see the Glossary), and the size of N relative to the entire population tells you how reliable your data might be.

2 Just because they say they will doesn't mean they can or that they actually will. So, of those who say they are willing you need to ask questions that will tell you if you can rely on them. You will need to know where they live and how much time and what times they might have. It might help if you knew if they had been a subject before, since sometimes past behavior predicts future behavior. Maybe knowing what they do for a living will help you. People who work in marketing are much more likely to be a subject in a research project, for example.

Unless your company is willing to pay for the costs of your business trips, you may have to select your subjects from the users who live where you work (see "convenience sample" in the Glossary). Video conferencing and screen capture offer only a facsimile of what you can learn through on-site observation because you can only see what the lens focuses on. You see the object separated from its context, the flower instead of the garden.

So, what questions might you ask of each user group to discover if your company store will be viable? You could just ask, "Would you buy a product?" but that is hypothetical. What could you do that might get your users to do something from which you could infer their potential interest in your company store? Keeping in mind the fact that users are not crazy about filling out questionnaires, you might want to do some more passive data gathering, to better understand the situation and to identify those who might be willing to answer some questions directly. Maybe we need more data before we start asking targeted questions.

Prototype / Usability analysis: When writing happened on paper we called this part of the writing process a rough draft. You wrote down your thoughts and shared them with a trusted and informed colleague who could show you where the gaps were, where you made unwarranted assumptions, where you needed more details, where fewer, and so on. In the digital world, we need a prototype for this same purpose of refining an information product because information products are not just words. They have buttons and menus and images and more. A prototype can be a simple sketch or an almost working model, depending on time, resources, and the situation. [1]

Because you are communicating digitally, your prototype can gather passive data, data acquired without a user's direct awareness.

You could create a handful of inserts for the regular app, say an image of a hat with a logo on it and another of a water bottle and one of a tea infuser. Then you could have each insert appear randomly among all users, from the 1s to the 10s to see if a specific group is more inclined to click through. You anticipate the 9s and 10s will be prevalent, but you might be wrong and the inserts may tell you.

If 7s and 8s click through as often as the 9s and 10s, you have a wider set of users to consider. If the 3s click through more often than any other group, you need to learn more about

1 Not that you have any spare time, but if you did you should teach yourself how to use some prototyping software or a graphics package you can use to create screen images.

the 3s, and probably revise the whole "love of product = buy logo-branded merchandise" assumption.

So, users see an image of some kind of merchandise with your company logo on it. What should they see if they click through? An offer to buy? If you decide to go that way then of course you have to have the merchandise and the purchasing process in place. And that in turn would suggest an avenue of further research. You could sell them the product, keep track of the number of sales, and decide based on that whether they store is viable. If they clicked on a product, saw an invitation to buy and declined, you might want to ask those people why they declined or perhaps offer them a different product the next time. If you noticed from the logs that some of the people put an item in the cart but failed to check out, then you might want to see what kept them from completing the task.

Another option might be to offer that product for "free" in return for helping with the company store research. This would simply be an invitation to participate in a further questionnaire or perhaps a focus group (see *focus group* in the Glossary) or perhaps a phone interview.

Or you could offer a challenge to increase their use of the app in return for the merchandise if they meet the challenge? It might make sense to offer different users different options and see what attracts the most interest (see A/B testing in the Glossary). You need, in other words, to develop a research method for finding out more from those users who were sufficiently motivated, for whatever reason, to click through.[1]

You accepted your boss's directive to build the company store without questioning the goal, but your user-research process has given you the opportunity to test your boss's goal while also figuring out how to achieve it if it proves viable. If you discover that a large number of users who click through are more interested in accepting a challenge than in buying merchandise outright, you might want to go to your boss and suggest that as an alternative to the store. The goal would become increasing engagement using merchandise as a lure. Maybe if you increase engagement you will create more 9s and 10s and then be ready for a store. If nearly no users said they wanted to buy something, then you need to go to your boss with that data. Successful research can produce undesirable data.

---

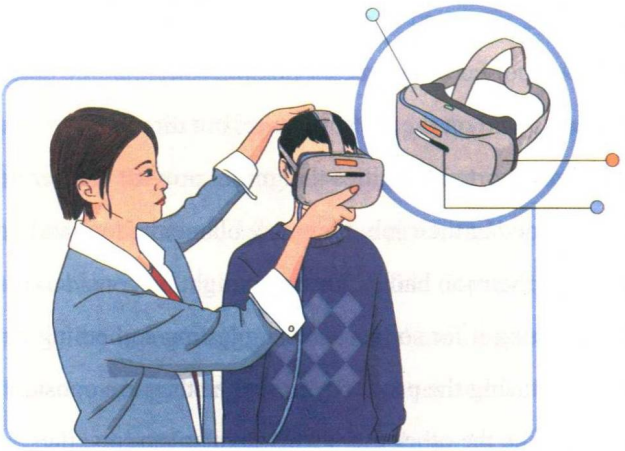
1 You could have presented these text/images to your entire potential population rather than starting with the Likert test. What would be the benefit of that approach? And what would it cost?

Observational analysis: Self-reporting (answers to surveys and questionnaires) alone is unreliable; you need to observe at least one representative from each user group to verify what was reported in the questionnaire. You might be able to use the user logs to verify what respondents said on the questionnaire, but direct observation provides the opportunity to discover unreported activities that might provide further insights. For example, if a person isn't very good at their job, they may blame the tool and you wouldn't know unless you saw them doing their job badly.[1] Or there might be considerable lag between initiating a process and completing it for some users, suggesting something wrong with the product, but when you watch them using the product you realize they are constantly being distracted by their children because unlike the other users who are also parents, these people are working from home. Could you redesign the application so using it takes less continuous effort? That's a question for a different research project. While you are being careful to stay focused on the primary question being researched, also keep in mind that while you are looking at each subject as a representative of a group, there might be idiosyncrasies and you need to identify them as such so they do not distort your design plans.

A secondary benefit of direct observation is that you may discover that your users use your product in unexpected ways. The people who designed the first email programs, for example, were focused on sending messages. But over time they learned from their own use and from talking with other users that people use their email client as an archive, and thus an email client that had robust search functions and archiving capabilities would be greatly preferred. Unintentional functions may be opportunities for product enhancement. Not everyone who is shopping is ready to buy. Window shopping is as much a thing in the digital world as it is in a world with actual windows. That insight led companies to design wish lists as an extension of the original shopping cart experience. Not only could potential buyers quickly relocate something that had interested them but the company could use the lists to target advertising and perhaps offer discounts.

1 Users who rate the application 8 or better are not likely part of the population who use the application badly, but you asked all users to rate from 1 to 10 so you could look closely at the 3s and maybe find people who struggle with the product and from them learn how to make it easier for them use. Maybe for your next research project.

At the same time, direct observation can distort a user's experience because normally they do not use your product with you watching them. You need to make your subjects comfortable and confident, and you need to make the experience the same for each.



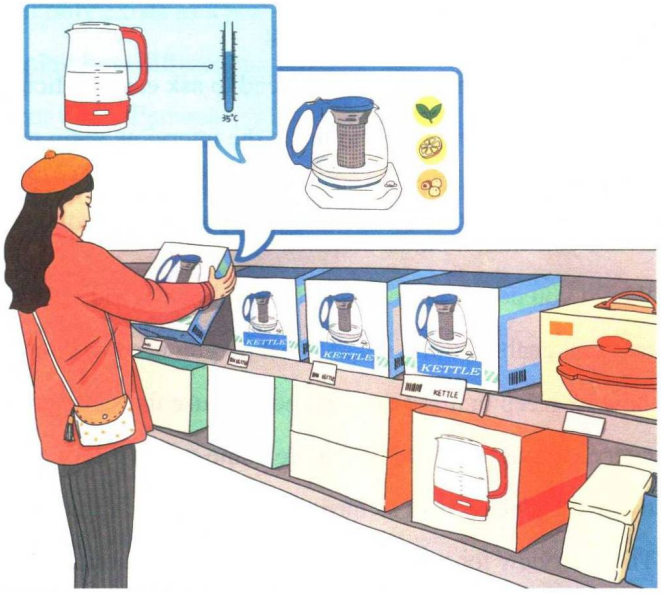
Observational analysis is invasive. You are going into someone's personal space and watching them. Obviously you need his permission, you need to coordinate time and place, and you need to make sure he knows exactly what will happen and what is expected. You need to get permission for everything you want to do while there, like filming, recording, and taking still images. All of these parameters take careful planning and consistent follow through. Each observation should be identical in process, where the only differences are attributable to the different individuals being observed. This too is difficult to accomplish and takes careful planning and precise execution.

What about the company store? If our early prototype of images with products on them leading to an invitation to buy showed the most promise, then we would want to know they could complete the buying process and if they weren't, we might want to ask a few users to let us watch. Or we could just ask them what went wrong, but then we would only have self-report to go on. When would that be enough and when would you want to follow up? What kind of observations might be relevant?

Task analysis: Because technical writing was born out of the need to explain to a diverse audience with a range of abilities and experiences of how to do something, technical writers have in the past been focused on writing instructions and procedures, what used to be manuals and then became help files and then videos that let new users watch the experienced users do what the product does. If you watch enough people do something, you can identify the steps

they always take and the order they take them in. That information can tell you a great deal about how to layout a screen or otherwise design information, what to tell them and when to tell them as well as how to hide the esoteric information from novices until they are ready to use it. And so on.

You do not necessarily need observational analysis to perform task analysis. You can simply ask people to report what they do, but people are notoriously bad at self-reporting. They forget steps. They imagine non-existent steps. They say things they think you want to hear. They say things to make themselves look good or to save face. And they do not always know what they are doing even as they are doing it. They may also use different words to name the same actions. All of these problems can be addressed by observing people using your app.



Consider for example that you work for a company making digitally enhanced electric kettles. There are two thoughts about how to design the temperature control panel. One way is to let users choose a temperature. The other is to let them select the kind of tea they want to drink. Which is better, assuming you can only have one method? If you could make a working prototype of each, you could place them in the break room and have someone sitting in the room watching to see which one gets used more. Or you could survey potential buyers. What would you ask them? Which do you prefer? Well, that is not a great question because you will not know what they mean by "prefer." A better approach might be to ask if they know what temperature is best for different types of tea. Is water for green tea better at 70 degrees Celsius or 80?

What about pu'er And jin jun mei? If most of your potential users have no idea how to answer these questions, then they do not know how to select the best temperature for the kind of tea they prefer and so may over or under heat the water. Does that matter to your company? Should you guide them to the best decision by designing the control panel to have types of tea instead of numeric controls? Or should you leave the temperature control numeric and include a paper chart of optimal temperature per type of tea? Ultimately, of course, this decision may be a technical or perhaps a purely business decision: which method is more practical?

Interview: Interviews provide an opportunity to gain insight into how people think and, if they happen on site, how they live. Even if the interview happens over the phone, your goal is to engage that person in a conversation and gain insight into how they think and how they feel about the product you are researching.

When you interview users, you need to ask each participant the same questions in the same order and yet you need to make the interview seem natural, seem like a conversation rather than an interrogation or even an interview really – you do not want them on their best behavior, you want them as themselves.

Would you do the interview over the phone or via video chat? Would you set up in place, observation enabled interviews? What do you need to know and what is the most efficient way to know it? Keep in mind that you need to use the same process and ask the same questions for every interview you do. If you do some onsite interviews, phone calls and video chats, you need to represent the data as three different sets of data.

The interview for the company store might be something like: We see that you are interested in the water bottle with the company logo on it. Can you tell us why? A bot could initiate this exchange and either complete it or hand it off to a technical writer for completion. If it's a bot, then you will need to write out all the interchange scenarios you can anticipate. That, of course, is its own technical writing process.

During an interview it is a good idea to ask a simple question and then just sit there quietly waiting for an answer. Do not elaborate or refine the question before the user has a chance to answer. You need to resist the urge to lead them to a specific answer. You can think of lots of

reasons why they might want that bottle but you only care about what their reason is.

The Research Report: In the most general terms, there are two kinds of user-research reports: internal and external. The internal report immediately applies what has been learned to a further investigation and may be something as brief as a number from a survey or it might be what was learned from watching a few people fumble in the same way with a prototype. Internal research reports are instantly persuasive because the audience, the researchers, are directly engaged in the information gathering and have authorization to respond immediately.

External user-research reports need to be persuasive because they are asking others within the company to accept the results and change the product accordingly. Change can be a very big ask. Even if the product is entirely digital, a redesign may not be trivial and there will almost always be some people who prefer the old way, for whatever reasons.

What an external report looks like also depends on what stage in the design process the researcher enters. If the product still only exists as a prototype, then a report might include personas as a way of clearly explaining how different user groups will use different features or even the same features in different ways. Personas give everyone working on a project a concrete sense of audience, of who they are serving.

If the product is already in production, then the report might focus on how user information is being gathered as preparation for the next iteration of the product, so that the relevant people are ready to hear the results when the time for the next iteration comes.

Summary

User research seeks to discover what users do, how they think about what they are doing, where they struggle, where they excel, and what they want. The research findings are then used to design (or redesign) a product that will delight as well as serve its intended users.

Keep in mind that user research is relatively new to most companies and the cost of the process can keep companies from fully endorsing (paying for) it. You may need to figure out how to do small bits and pieces, maybe ask fewer questions, maybe be content addressing a couple of different answers. Because most digital products are undergoing constant development, user researchers often keep a list of participants who are willing to regularly engage in the research. This saves time but can lead to skewed results. The most willing are

not necessarily the best.

Things to consider are cost, intrusion on your users' privacy and work space, time, and what you will be able to do with the information you get back.

User profiling or user persona?In the most general terms, user research consists of the following steps:

1) What do you need to know in order to do what you want to do? Create a testable hypothesis. Or go fishing for possibilities before narrowing your research topic to something testable.
2) Create a survey that you could send to all potential users that would tell you how to segment the general population into user groups so you can ask more targeted questions: if this, then that.
3) Name and describe the groups that the survey identified.
4) Design a questionnaire to provide group specific insights into group attitudes and behaviors and to identify users who could be useful and willing subjects. [1]
5) Create an observation protocol, the procedures and practices you will follow for each observation. Remember each should be performed in the same way. Also remember that observation is invasive and you need to set your subjects at ease.
6) Write the interview questions you would ask each subject after each observation.
7) Observe the subjects.
8) Interview the subjects.
9) Organize and visualize the data you have gathered throughout the research process into a report with recommendations for product changes.

1 The open-ended version of this question, how often do you use our app, will give you many variations on the same thing. You want a close-ended question in cases like this, where all people who use the app X times provide exactly the same data.

LANGUAGE FOCUS

Writing open-ended questions

A close-ended question is one that has an absolute answer, a yes or no answer or a number.

Is pu'er best infused at 70 degrees: yes or no?

On a scale of 1 to 5, how important is having a water bottle with you at all times during the day?

An open-ended question asks the interviewees to provide their own words.

(closed) *Do you always carry a water bottle?*

(closed) *If yes, have you ever left home without one?*

(open) *If yes, how did that make you feel?*

Writing clear, unambiguous questions

Whatever questions you ask, you need to make sure they are unambiguous and unbiased, otherwise the data they yield will be useless.

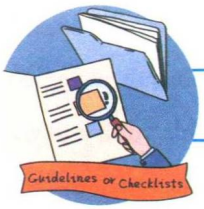
Ambiguous question: *Do you prefer pu'er or Jin Jun Mei?*

Unambiguous question: *Because you said you prefer darker teas, do you prefer dark tea like pu er or black tea like jin jun mei?*

Writing unbiased questions

Biased question: *what problems did you have with our competitor's product?*

This question both assumes the respondent has had experiences with the competitor's product and that they were negative. This question encourages respondents to think negatively about your competitors and assumes they have knowledge of them. Both assumptions are biases.



GUIDELINES OR CHECKLISTS

When creating a survey

Many words have multiple meanings and many common words can mean different things to different people. **Avoid ambiguity**. Just because you know what you mean by a word or expression doesn't mean everyone thinks it means the same thing. If you asked, "Did you have a positive experience?" and 40% said yes and 60% said no, you do not know why the yeses said yes or the nos said no. Worse, there may be different reasons for saying yes. Define positive and define negative. You could do a check-all-that-apply response as a way of getting more precise information. Sometimes the meaning will be unambiguous but how a respondent represents that meaning might differ. Consider a question like "When were you born?". If you gave 5 people a blank space to answer that question, you might get 5 different representations of date, month and year. You could get: April 12, 2000; 4/12/2000; 12/04/2000; 18 years ago today. To make sense of all of those variations you would have to rationalize the data, translate each answer into the same format. That would be time consuming and error prone by hand. A computer program could do the translation quickly, if you have the code, but it's simpler to restrict how an answer can be formatted.

Do not ask open-ended questions unless your entire population is quite small. If you ask 1000 people what they think about something, you will need to read and codify 1000 different prose passages. It is much better to ask close-ended questions. You will get numbers instead of words.

Before you send the survey out

Have you got a big enough recipient list to ensure that you will get a useful number of respondents. If the potential number of all users is 1000, and you know this because that's how many users you currently have for your newest app, then that is certainly big enough, but how many of those users will fill out the survey? Is there any way you might improve participation without turning participation into compliance? What's the least number of respondents you need to get a representative sample?

Once the survey data come back, design the questionnaire

What user types did the survey identify and what questions might you ask that will help you refine those types? The questionnaire also needs to identify who is willing to be a subject and who among the willing are your best candidates.

Does your questionnaire have any leading questions?

Any ambiguous questions?

Do you have the right mix of open-ended and close-ended questions?

Remember that the more open-ended questions you ask, the richer your data potentially is and the more time you will need to spend coding the answers and seeking commonalities. You will also have less certain numbers. If you ask a yes or no question, you have certain numbers. If you ask why, you will have to discover the numbers in the words.

Once the questionnaire data is in

Identify who among your users of each type you can observe as they use your product.

Write a description of the company you represent, the product you are researching, the goal of the research, exactly what the subject can expect of the observation, how long it will take, where it will take place, what will be done with the data acquired and what protections and rights the user has. Remember that you are entering someone's personal space. He needs to feel confident that he should let you in.

Do you have the necessary recording equipment?

Do you know which questions from the questionnaire you want to illuminate?

Bring a colleague to look after the recording and provide a second perspective.

Once the observational analysis is done

Modify the prototype to address what the research identified as places for improvement and test again.

EXERCISES

There are two different approaches to practicing what this chapter taught, depending on how much class time was given to this chapter. The first assumes that this chapter is very significant to the course. The second set of exercises is for classes that have spent a relatively brief amount of time on this chapter.

1. SET 1 (if this chapter is significant to your course and you have spent a considerable amount of time learning it)

   a. Where you start a user research project depends on what you know already. If you know the potential population, then start by surveying them to identify segments. If you have the segments, perhaps by looking through the server logs or from previous research projects, then go straight to the questionnaire to identify users you can observe and interview. For the observation phase you need something to observe, so you will need a mock-up of a company store. This could be as simple as a photograph and a description of several different products that you ask your subjects to look at and read and say what they think about what you have offered. Or you might mock up a more elaborate experience with an actual shopping cart and ask the subject to select the item that appeals to them most and go through the process of buying it. Then you would interview them to find out why they chose the item and what they were thinking as they went through the whole process and what their general impressions were. Then revise the app.

   b. Alternatively, since this is a hypothetical situation, you could begin by describing your application and the kind of store you've been asked to create and then design a survey that you would send out to the imagined general population of users. Then you would design a couple of follow up questionnaires based on the responses you imagine might come back. Then you would ask fellow students for volunteers to role play users and have them look at a mock-up and talk about what they think as they use it.

2. SET 2 (if you just spent a relatively brief amount of time on this chapter)

a. Consider your classmates as friends. You want to organize a party sometime during the semester. Your total population is all class members. Design a questionnaire to find out what the party theme should be, what should be served, what day and time, and whatever else you think you would need to know in order to please the greatest number of classmates. Represent that data you get back in a chart that clearly indicates your findings. Then tell the class when the party will be held and what the theme is and ask how many plan to attend. The more say yes, the better you did.

b. Look at five or six different apps or websites that sell company related products (t-shirts, water bottles, etc.) Write a report that generalizes what you saw and recommends what you think your company store should look like. Use whatever graphics program you are familiar with, create a mock-up of the screens that users would see if they were buying something from your store.

c. Design a Likert scale questionnaire that would provide the authors of this textbook with information that would help them revise it for the next edition.

Chapter 12

Methods in Technical Document Development and assessment 2: User Personas and User Profiling

Contents

CASE 260

GLOSSARY 262

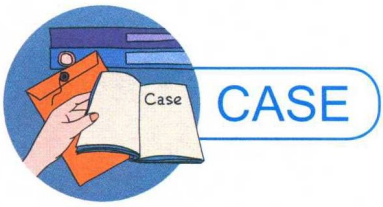
TASKS 266

- Overview 266
- A persona template 268
- A closer look at our case 269

LANGUAGE FOCUS 273

GUIDELINES OR CHECKLISTS 273

EXERCISES 274



You have been hired as a technical writer by Beimei Best Apartment, a small company that is now four years old. The founder has written an apartment locator application specifically for Chinese people planning to study at an American university. A user indicates what university he or she plans to attend and then fills out a questionnaire designed to identify his or her requirements and provide enough personal information for the app to identify the best apartments. For an additional fee, a broker will arrange a lease. Testing over the past four years proves people really want the service the app can provide, but many users have been unhappy with the experience of using it. Worse yet, many users were disappointed by the apartments it selected.

User experience research (UX) and user profiling have indicated that the questionnaire is too long and complicated and also problematic because some students do not know enough about where they are going to know how to answer some of the most important questions. "Do you want to live close to public transit?", for example, was commonly answered with "yes." But public transit in many American cities is almost useless unless you live in exactly the right places. So the only accurate answer to "Do you want to live near public transit?" is a very unhelpful "it depends." As a result of the questionnaire's imperfections, your company's call center is too busy and the brokers who help clients get a lease are having to deal with frustrated and sometimes even angry clients. You need to improve the questionnaire's accuracy while reducing the number of questions it asks.

There are three people on your team: the UX researcher, the User Profiler, and you, the Technical Writer. Your job is to synthesize the research your colleagues give you into a set of personas, data-based simulated users that everyone can understand and empathize with, so they have a sense of working for actual people rather than just an undifferentiated mass of anonymous users.

Your UX colleague has spent a great deal of time surveying, interviewing, and observing users in an effort to understand what people think the app can do for them, how they think

the app works, what they think about the questions it asks them, and how they feel about the results they get. The UX researcher has discovered that not all users are alike and yet they are not all different either. This makes it difficult to know how to redesign the questionnaire because a change that helps one user might hinder another. This discovery has helped you realize that the app needs multiple questionnaires, each one tailored to a specific kind of user. Now you need to identify the kinds of users you have.

Helpfully, the User Profiler has analyzed the server logs and discovered something interesting. Two users can answer the questionnaire in the same way and yet have very different satisfaction ratings. In other words, the accuracy of the questionnaire varies by user. Further research indicates that the more a user knows about his or her intended university and its location, the more satisfied he or she is with the results. Thus you realize that some users need to know more about where their intended university is located before they fill out the questionnaire. This means you need some funnel questions that will decide which subsequent questionnaire a given user will see. You also realize you need to make the questionnaire customizable by the user, perhaps showing a user these features when a given result does not please them. So, for example, perhaps a user can increase the radius of the search if apartments in the district that interests them are not pleasing. Or perhaps they can increase the amount they are willing to spend if their goals are unrealistic. You do not want all users to see all of these options at once because too many options lead to decision paralysis. You want to reveal customization to some users.

Your inferences are confirmed by the call center data and broker interviews. You need funnel questions and then multiple questionnaires, each one tailored to fit a different kind of user with customizable features revealed when a user does something indicating they will be pleased by the option to customize. In order to help everyone on your team think precisely about what questions to ask which users, you need to find a way to represent each user type and for this you need to develop a set of personas.

American universities /əˈmɛrəkən/ /ˌjunəˈvɜrsətiz/

What follows is a very rough sketch of the kinds of American universities most Chinese students are likely to attend. This knowledge will facilitate the persona creation process. There are hundreds of universities in America. But there are five basic categories. The Ivy League refers to the eight most prestigious universities. These are world-class institutions that are highly competitive and very expensive. They are for the most elite students. The land grant universities (also known by the abbreviation "aggies") were set up in the 1800s to research and teach agricultural methods. Each is located in a town at some distance from the state's capital. While these universities are diverse, they typically appeal to students who want to study agricultural methods. Polytechnics or "techs" are engineering universities. There are a few famous ones that many students from around the world want to study at. These famous techs are expensive and scholastically very demanding. They are for students who want to study applied sciences, engineering, software development, entrepreneurship, and so on. The fourth category is the state university. Each of these is located in the state's capital. They are often not as prestigious (or as expensive) as the state's other big universities, though some are justifiably famous for some areas of study. They typically appeal to students who want to study business or arts or sciences and want to experience life in an important American city. The fifth type of university is the prestigious private university. These are not Ivy League schools but they are exclusive and expensive all the same. They are for wealthy students who have done well scholastically but not distinguished themselves sufficiently to get into Harvard or Yale. 美国大学

audience, intended /ˈɑdiəns/, /ɪnˈtɛndəd/

The people who use your product or service, often referred to as "users." Because the word audience might refer to anyone at all, technical writers tend to talk in terms of intended audiences and to segment each intended audience into types so that a message can be tailored for each type. Each type is called a persona. 目标受众、读者

audience, segment /ˈɑdiəns/, /ˈsɛgmənt/

Intended audience members grouped by goal or role or some other significant characteristic that defines how they will use the application or document as opposed to how other audience segments will. If all users use the product in the same way, segmentation is not necessary. But if a product will be used by different people in different ways, then the product has to be designed to accommodate those significant differences. 受众人群划分

caricature /ˈkɛrəkəʧər/

A grotesque representation of an individual that exaggerates a prominent trait for the amusement of the audience at the expense of the person caricatured. Caricatures are often used in propaganda campaigns, where the individual cruelly portrayed stands in for a group of people of a specific national or ethnic identity. When creating personas you want to be very sure you are not exaggerating any features. You are looking for common denominators. 一种漫画的形式

decision paralysis /dɪˈsɪʒən/ /pəˈræləsəs/

People find it harder to decide if they have too many options to choose from. This is why for years Apple only offered iPhone in one of two colors. Part of creating an effective customer service is giving them only the options they most care about, unless you want to distract or confuse them for some reason, which is almost always unethical and should be avoided. 决策瘫痪

empathy /ˈɛmpəθi/

The sensation of knowing what someone else is feeling. In English we say that you cannot judge a person until you walk a mile in his or her shoes. In the software industry in America they say you have to eat your own dog food (a company that does not use its own software clearly has no faith in its product and no direct experience of it). Successful product development requires user-centered design. People who know a great deal about something, like those who work for the company that makes it, see it very differently from those outside the company, the people who you need to sell the product to. You need to know how users see it and what it is like for them to use it. 共情（能力）

funnel questions /ˈfʌnəl/ /ˈkwɛsʧənz/

Questions intended to stream users in different directions based on the answers given. They segment the intended audience into broad categories, each of which can be further segmented and refined by subsequent questions that only members of that segment see. In our case, the first question or two should identify how much a user knows about the city they are about to relocate to. If they know nothing, they get a very different questionnaire than if they have been there before. 漏斗式提问

narrative /ˈnærətɪv/

A story, typically with a beginning, middle, and end. Some kind of conflict is introduced in the beginning that gets resolved in the end. A persona narrative is designed to give technical writers and designers a concrete sense of who they are working for, what conflicts or struggles such users experience, and how best to solve those problems for people like them. 叙事

persona /pərˈsoʊnə/

A simulated user, a fictional person, composed out of accurate generalizations from data left by all users with the same or very similar goals, circumstances, attitudes, and requirements. Writers develop personas to avoid unfounded assumptions that lead them to write to stereotypes or caricatures and yet

still understand their audience as composed of individuals rather than undifferentiated and universal users. They also use personas to foster empathy. See the section of TASKS for more details. （用户）画像

predictive analytics /prɪˈdɪktɪv/ /ˌænəˈlɪtɪks/

Using data to predict what a person will do next. Businesses use this methodology to target advertising and to curate information for specific user profiles to better meet that users' needs and expectations. Because most people are creatures of habit and convention, remarkably (even disturbingly) accurate predictions are possible. 预测性分析

prime directive /praɪm/ /dəˈrɛktɪv/

The goal towards which all action aims, the unifying principle of all decision making. 最高指导原则

server logs /ˈsɜrvər/ /lɔgz/

The data that is gathered by the software that provides a user access to a digital product. By default, this data consists of the browser used, the location of the user, time, date, length of access, origin and exit as well as the trail through the site. Using cookies, small bits of code installed on the user's computer (or phone), and purchasing data from other companies, it is also possible to develop a highly detailed digital history of a user. If a user signs up and provides personal data as part of signing up, then that data too becomes part of the data stored in the server logs and can be used to draw even more accurate inferences about what a user is doing, and therefore perhaps how a product might be improved for them. 服务器日志

stereotype /ˈstɛriəˌtaɪp/

A biased representation of person or people based on over generalizations regarding visible traits, manner of dress and speaking, national origin, language (dialect and accent) and public behavior. Stereotypes usually have some small truth to them but they are distorted and are always doubtful when applied to a single individual. Not all Chinese people play the cello and are good at math. But many can and are. Not all American boys play football and are rude, spoiled, and selfish. But many do and some are. Not all Canadians are polite hockey players. 刻板印象

type /taɪp/

A generalization from a dominant trait that is used to group individuals. All recent college graduates, for example, can be cast as a type in that most of them are looking for a new job, ready to move, find a life partner, and so on. To the extent that a person is of a type, what is true of that type will be for the most part true of them as well. All students who want to study in a foreign country are alike in some knowable ways. But of course they are all different in different ways as well, and some may not conform to the type very well. （群体中的）类型

usability testing /ˌjuzəˈbɪlɪti/ /ˈtɛstɪŋ/

The process of watching how a user interacts with a product to determine how they think it works and how successful they are in making it do what they want it to do. Do the labels make sense? Does the user know when to push which button? Are they ever confused about something or uncertain about what is happening? And so on. The purpose of usability testing is to ensure people can use the product efficiently and effectively. （文档或产品的）可用性测试

use case /juz/ /keɪs/

A narrative that describes and explains in detail how a specific individual encountered a problem and how it was resolved. If the resolution was already available in the application, then that use case suggests changes to the documentation or, more likely, how a solution is signaled to a user. If the solution doesn't already exist and the problem is one likely encountered by other users, then the product needs to be modified. Given enough use cases, it is possible to generalize to a set of users. 用例

user-centered design /ˈjuzər/-/ˈsɛntərd/ /dɪˈzaɪn/

The practice of designing and building products from the intended users' point of view rather than from the perspective of the engineers or the materials experts or the accountants. In truth a successful product has to accommodate many points of view, but how people who want to buy it perceive and use it is critical to sales. 以用户为中心的设计

user profile /ˈjuzər/ /ˈproʊˌfaɪl/

A collection of data relevant to an actual user. Each person who uses an app leaves a trail of passive data and provides data directly when filling out questionnaires or responding to polls or challenges and other such invitations to reveal themselves. Often a user profile also includes data on that person culled from other sources, other apps as well as various corporate and in some cases governmental agencies. Whereas a user profile relates to an actual user, a persona is a simulated user created by amalgamating data from many user profiles. 用户档案

user profiling /ˈjuzər/ /ˈproʊˌfaɪlɪŋ/

Applying various statistical methods to user profiles to group users into types. User profiling combined with user experience research provides the data required to create personas. User profiling also refers to the practice of predicting what a given user will do in the future based on what users like them have done in the past. 用户类型构建

Overview

How a person interprets a message is directly related to his or her identity, social role, and context of reception. An accountant does not respond to a sales data report the way a marketer does. The people who control the supply chain read it differently too, as do the salespeople. Customers do not care at all about sales data, although investors do. A technical writer sees all messages from each of the possible perspectives because he or she has to communicate effectively with everyone. To understand a message from all perspectives requires knowing your audience well. "Know your audience" is a technical writer's prime directive.

In the pre-literate past, an audience consisted of a group of people who coexisted in time and place. If you were not present when a speech was given, you did not hear the message directly; you were not a part of that audience although you were still a member of that community. To know such an audience meant living among its members, asking thoughtful questions, listening carefully to each answer, and figuring out how to weave various opinions and perspectives into a single coherent message that could be successfully presented to everyone simultaneously.

Once writing replaced speaking as the primary channel of transmission, the constraints of time and place were eliminated and "audience" became "audiences." A written message can be read by anyone literate in that language at any time in the future and in any place they happen to find the message. The word "audience" came to refer to a range of different kinds of readers: those who needed to act on the message (intended recipients); those who needed to catalogue the message (librarians); and those who wanted to learn from past messages (scholars). There were also readers who might just happen on a message. Thus there were intended readers, those with a specific need the writer was trying to meet, and unintended readers, those with whom the writer might also want to communicate or not, as in the case of a coded message. If a document was lengthy and needed to be read by many different

people, each with a different purpose, then writers would break the document into sections and address each section to those readers: abstract, executive summary, background, research findings, recommendations, conclusion, notes and references. Each of these sections was written with specific types of people in mind, assuming that very few people would read everything and some people would form their impression of the whole based on only one part.

With digital communications, "audience" consists of any individual who happens to be using the app. Each of these people has in common with the others a goal or set of goals that the app is supposed to fulfill, but each user acts independently, unless the app is specifically designed to connect users (like dating apps and neighborhood forums). Because apps are dynamic, they can modify their messages based on user behavior and thus those who write for apps need a way to decide what modification should result from what kinds of behaviors and how to use past behavior to predict how best to anticipate upcoming needs.

Even though all users share one goal, find the best apartment to use our example, what "best" means is different for each person. What is "best" to one user is inconvenient to another, ugly to a third, and completely irrelevant to anyone who does not want to live in that part of that city. Our objective is further complicated by the fact that people can apply the same thought process and arrive at different conclusions. It is also possible for two people to arrive at the same conclusion by different thought processes. The people in our audience, our intended users, are all the same, and yet each is also unique.

If we were going to communicate directly with each person using the app, we would need an army of workers, but the purpose of an app is automation or at least partial automation. Directly addressing each user personally is inefficient. Fortunately, it is also unnecessary.

We can segment our users into types based on shared characteristics (intended university, available rent money, transportation options, space requirements, temperament, tastes, etc.) and then refine our understanding of each type of user by asking questions both before and after leases get signed in order to identify level of satisfaction. A given outcome can thus be traced back to how questions were answered along the way. Eventually we should be able to ask fewer questions and get better predictions about what apartment will satisfy a given user.

Each user type is represented by a persona, a data-based simulation of a user that seems like a real person but which exists only virtually. A persona is a personification of data. The purpose of a persona is to foster empathy, to make all members of the company feel as though they

are communicating with actual people, each with specific and different needs and ways of working, rather than a mass of undifferentiated users all doing the same thing in the same way.

Personas are often presented as a photograph of a person (although AI simulations are possible), with a list of "biographical facts," activities, goals, fears, frustrations, and so on, details that bring the simulation to life. A persona also has a defining narrative. A story that explains its problem in detail and how it uses or wants to use the app to solve that problem.

Most technical writing companies and divisions within companies have a collection of personas prominently displayed, each one representing a specific audience member type, reminding their writers who they serve and what kind of struggles they need to anticipate and resolve or at least address in advance. These personas need to be revisited and updated or refined periodically to ensure their efficacy and to be certain that they accurately represent current users.

A persona template

A generic persona might look something like this:

Picture of persona	Biography	Level of Engagement
[Large enough to see the face in detail as well as some details about how they are dressed, adornments, make up, hair, perhaps a background that indicates the kind of space they occupy and the people/things around them while they are using your product or app. The goal is to make someone looking at the picture have a concrete sense of whom they are writing to.]	Name: Age: Education: Marital status: Parental status: Places lived:	Frequent: Regular but infrequent: Occasional: Rare: Installed but never used:
	Occupation	**Narrative**
	Job title: Income: Debt: Length in current position: Aspirations: Fears:	What problem are they trying to solve? •What is their dominant mood or •default state of mind? •What is the setting? •What do they expect? •What pleases them? •What frustrates them?
	Interests	**Miscellaneous**
	Hobbies: Activities: Vacations: Form of transportation: Favorite music, tv shows, games, etc. : Languages:	Anything else that yields insights into how people like this think, act, and live.

A closer look at our case

Our app has been in use for four years now, and thus we have thousands of use cases, data about specific individuals using our app and feedback about how successful their experience was. The one thing we know that applies to all users regardless of type is frustration at being asked so many questions. So we need to streamline that process. We need to reduce the number of questions we are going to ask and find some way to make sure we are asking only the right questions for each audience segment.

The questionnaire data tells us that our users are, in general, young (18-25), educated, middle or upper middle class if not elite class, and ambitious. They are open to new experiences. They are, relative to young people who do not study abroad, mature, self-possessed, good with foreign languages, and smart. This kind of information is useful because we can use it to make predictions about what kind of housing might appeal to such people. But we need more. For one thing, we need to know what money a person plans to spend and what apartment they can get for that much of money in the city or town they want to live in. We also need to know what kinds of sacrifices they will need to make given where they need to live. One-thousand American dollars a month will get you much less in a large city than it might in a small town, for example.

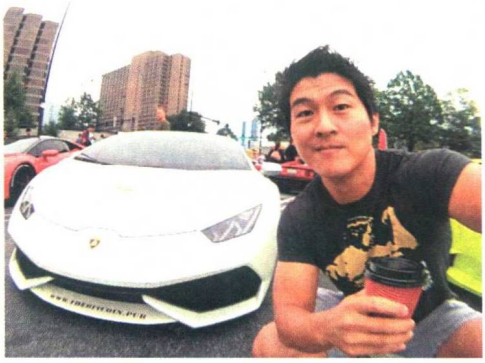
Our user profiles consist of Chinese students who have gone to America to study at one of the hundreds of universities in cities and towns. We know who studied at which university, in which department, where they lived, how much they spent per month, how long they stayed, and how satisfied they were with our app and the apartments it identified for them. We have hundreds of these user profiles. To make this historical data predictive, we need to find ways to generalize from it.

Our use cases provide a list of every American university attended by a Chinese student who used our app in the past 4 years. If we used this list to create personas, we would end up with hundreds of personas. We need far fewer because a small audience of strangers is no better than a large audience of strangers. We need to create the illusion of dialogue for both our users and our writers and designers. To simplify our data, we think first about taking the top 10 most popular universities, but we worry that if we do, the students who want to attend one of the many others will receive an ill-fitting questionnaire. We notice that the top twenty

universities all fall into one of five types. So we decide to make a persona for each of the five types of university.

Thus our cast of personas will be constructed out of generalizations from past students, one group of which attended one of the Ivy League universities, another for those who went to a technical university, a third for those who went to a land grant university (these are America's agricultural universities), a fourth for those who went to a state university, and a fifth for those who went to a prestigious private university that is not one of the Ivy League universities.

Thus we can have five personas: The Ivy Leaguer, The Techie, The Aggie, The Statie, and The Posh.[1]



Basing our personas on data rather than assumptions and biases is critically important. If we do not use real data, we risk creating stereotypes that will be scandalous and also useless.

At this point we have five data-based personas. We also know that user satisfaction is a function of knowledge of the city or town they plan to move to so we can modify each of the five personas to include three additional distinctions. Using funnel questions we can discover which users:

1 Posh is a British word that means elite, aristocratic. A posh person is rich, well-educated, well-spoken, and well-dressed.

1) know a lot about where they are moving

2) know a few important things but nothing much in detail

3) know nothing

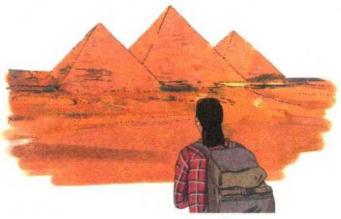
And so we would send all user 1s destined for an Ivy League university directly to the questionnaire designed for them, all user 2 Ivy Leaguers to a different questionnaire, and all user 3 Ivy Leaguers to some helpful information about the town their Ivy League is in before we send them their specific questionnaire. And so on.

In the end we will have three questionnaires for each of the five personas, although of course any given user will only ever see one custom fit questionnaire. We plan to make these questionnaires dynamic in the future. In other words, eventually we want to use real-time data to modify what a given user sees when he or she answers a question or provides a response that we know indicates the response that people like her are looking for at such moments.

Once we have our personas, we need to develop ways of sharing them with the company, so that the writers and designers and perhaps even the software engineers have the illusion of helping real people solve a finite set of real but elastic problems.

We could create a web page for each persona. Down the road we might want to have our app offer users a community experience since their participation would give us even more data specific to students at that university. Or we could create life-sized cutouts and place them in the hallways of the offices or seat them at the table in a conference room. Many approaches are possible. Be creative. At very least we should have a template that provides some consistency of presentation among the different personas and an efficient way of sharing and quickly reviewing each persona.

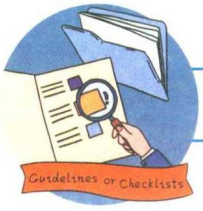
Ivy Leaguer, Type 1

Well-traveled Ivy Leaguer	Biography	University
	Name: Zicheng Zhang Age: 23 Education: Marital status: Single. Parental status: 0. Places lived: Student dormitory (not quite satisfied); leased apartments	University: Yale Place: New Haven, Connecticut Climate: *Kinds of apartments:*
	Occupation	**Narrative**
	Job title: Graduate student looking to enter the field of anthropology Income: A modest university stipend and family money Debt: None Aspiration: To become known for her taste in art and culture Fears: Safety; living in a place she will be ashamed to show to friends, fellow students, and other members of the local art community	A well-traveled Ivy Leaguer who has been to America, to New York and Los Angeles. She has also seen Yale and knows a bit about New Haven. She is excited and confident, but she is also very particular and while she does not know precisely what her options are, she knows what she wants and what she does not want.
	Interests	**Miscellaneous**
	Hobbies: Tennis, swimming Vacations: The Caribbean; somewhere exotic Form of transportation: Driving Favorite music, tv shows, games, etc. : *Hamilton*; *Game of Thrones* Languages: Mandarin Chinese, Cantonese, English, French, German, and Japanese	Zicheng wants her apartment to be her harbor after a long day; she would also occasionally turn it into a social place for her and her friends. She loves re-decorating the place when she moves in.

LANGUAGE FOCUS

Here is a list of words that you can use to describe someone's personalities (mostly positive and neutral ones). Use them on the user persona.

brave	chatty	clever	easy-going	friendly
grumpy	hard-working	honest	kind	lazy
loud	lucky	mean	moody	nasty
neat	nervous	nice	polite	popular
quiet	rude	selfish	serious	serious
shy	silly	smart	tidy	unlucky
wise	emotional	enthusiastic	determined	decisive
artistic	annoying	cautious	bossy	aggressive
affectionate	Open-minded	conservative	reserved	outgoing



GUIDELINES OR CHECKLISTS

□ Personas need to be shared with everyone in the company. Make sure they exist in an easily reproduced format.

□ Avoid stereotyping. Is your persona truly based on data? If a persona somehow got out into the world outside your company, would that be a problem? If you shared your persona with someone who truly fit the profile, would they be offended? Would they happily recognize themselves in the persona?

□ Personas need to be updated periodically, as new data becomes available, to be sure they aren't out of step with reality. How often should you revisit yours?

□ Because personas are supposed to be an ongoing process, in addition to the profiles themselves you need to document the process you used to create them with enough detail that you could successfully pass on the task to whoever replaces you when you move to a new position. As a technical writer, the archive of your work practices becomes a significant part of your legacy.

EXERCISES

1. Practice thoughtful generalization from observation of many people coexisting in one place. Perhaps spend some time in the main canteen on campus or in a parkland where students tend to congregate. See if you can identify groups and then list characteristics that make a person a member of that group. You might find inspiration on Douyin.

2. Working in a group, identify an application that all of you use and compare notes about how each of you uses it. Can you distinct ways of using it? Can you create a persona for each user type?

3. Create four personas, one for each of the kinds of universities we identified above. You should spend some time researching one American University of each kind to see if you can develop a sense of what kinds of students go there. Since you will have little if any actual data, these personas will have to be creative. You might substitute the American universities for Chinese universities that have students you know more about.

模块式教材结构
实践型教学案例
实用性写作技能
综合型能力培养
立体化教学资源
国际化编写团队

南京大学出版社
淘宝天猫旗舰店
njdxcbs.tmall.com

ISBN 978-7-305-24433-9

9 787305 244339 >

定价:69.00元

[General Information]
书名=英文技术写作＝TECHNICAL WRITING
页数=274
SS号=15132610