Gestion de Projet Informatique

Partie 4 : Project documentation (English version)

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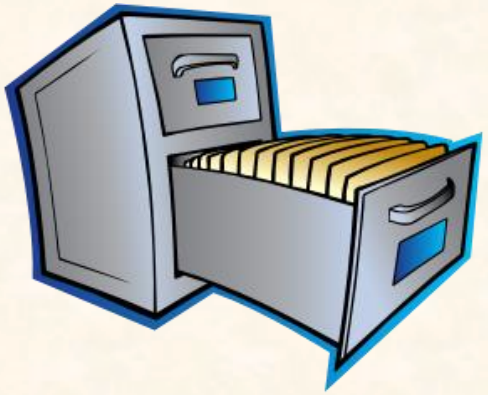
Do not document the program,
program the document !

Plan

- Introduction
- **Process** documentation
- **Product** documentation
- Document quality

Introduction

- All IT projects
  - A large amount of associated documents
  - Producing documentation → **costly work**



- Why documentation work is so important ?
  - A communication medium → team **members**
  - Information repository → **maintenance engineers**
  - Crucial for project **management**
  - Tell **users** how to use and administer the system

Introduction

- Who should act ?
  - Computer engineers
  - Professional technical writers
- When do we need to act ?
  - Before development
  - During development
  - After development

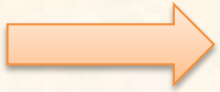
- What to do ? Two types of documentation
  - **Process and Product documents**

Process Documentation 1/3

- Objectives
  - Record the process of project development, management and maintenance.
- Visibility of process management
  - Project development involves similar **cognitive** tasks
  - Only way of the **visibility** : Use of process documentation
- Plans, estimates and schedules
  - To **predict** and to **control** the development process
- Reports
  - **How resources were used during the development process**

Process Documentation 2/3

- Standards
  - Set out how the process is to be implemented
  - Organizational, national or international standards
- Working papers
  - Ideas and thoughts of the engineers
  - Interim versions of product documentation
  - Implementation strategies
  - Identified problems



Rationale for design decisions

- Memos and emails
  - **Daily communications**

Process Documentation 3/3

- Major characteristics
  - Most of it becomes often **outdated**
  - Ex. Draw up a plan on a weekly, fortnightly or monthly basis
  - No longer be used after the system has been delivered

- Some useful exceptions
  - Test schedules : re-planning the validation of system changes
  - Working papers which explain the reasons behind design decisions (design rationale)

Product Documentation 1/6

- Objectives
  - Describe the delivered project product
  - Have a relatively long life
  - Must evolve **in step with** the product that it described

- 2 types of documentation
  - **User documentation**
    - Tell users how to use the software product
  - **System documentation**
    - For maintenance engineers

Product Documentation 2/6

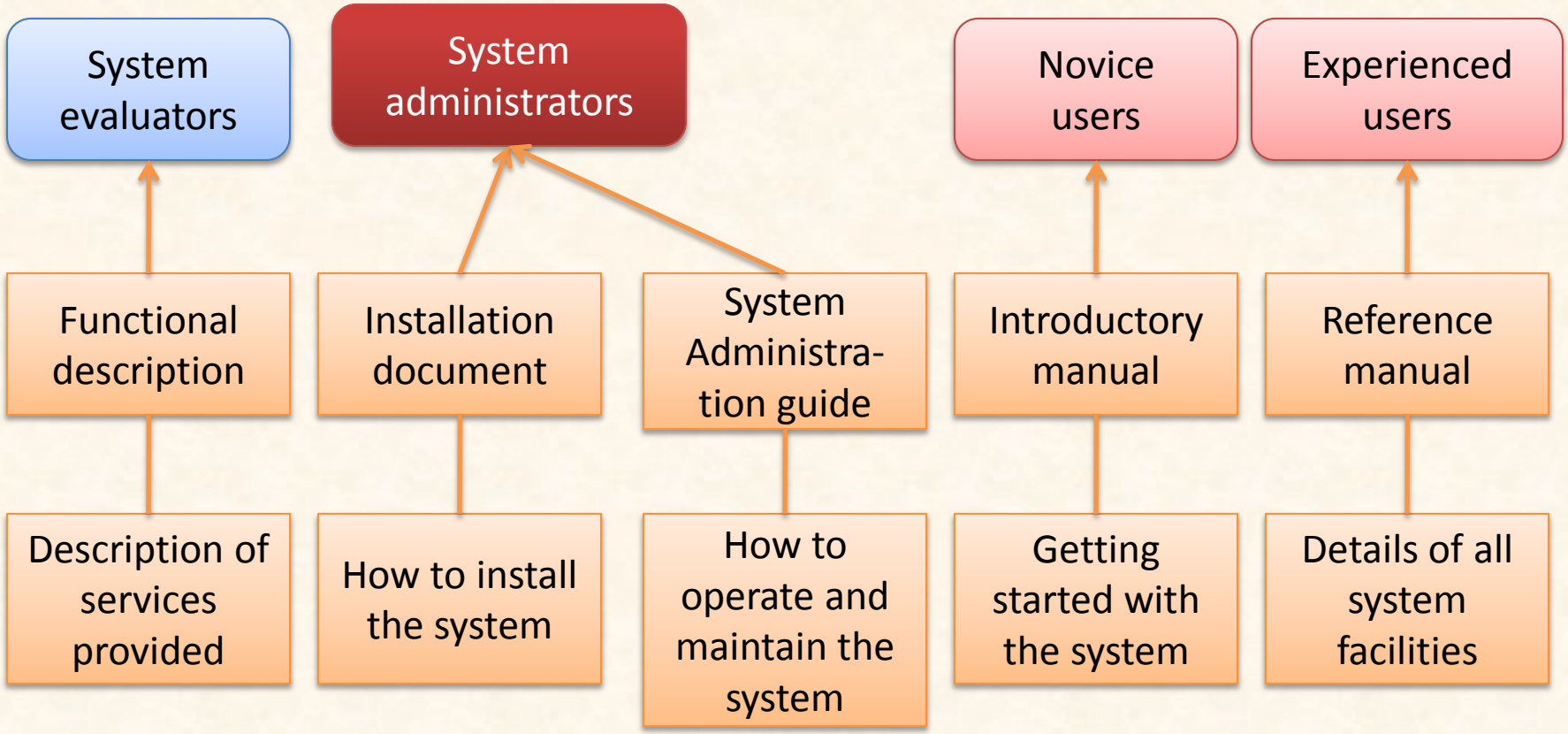
- **Functional description**
  - Outline the system requirements and describe briefly the services provided
  - Overview of the system
  - Users read the document and decide if the system is what they need
- **System installation document**
  - Provide details of how to install the system in a particular environment
  - Description of files making up the system
  - Minimal hardware configuration required
  - Automated installers
- **System administrator guide**
  - How to interact with other systems, hardware etc.

Product Documentation 3/6

- **Introductory manual**
  - Describe how to get started
  - Should be liberally illustrated by examples
  - How to recover from mistakes
- **System reference manual**
  - Describe the system facilities and their usage
  - Provide a complete listing of error messages
  - How to recover from detected errors
  - Don't be pedantic and turgid → but ensure **completeness**

Product Documentation 4/6

- **User documentation categories**



Product Documentation 5/6

- **System documentation**
  - All of the documents describing the system itself
  - From the requirements specification (scope statement) to the final acceptance test plan.
  - Design, implementation
  - Different types of tests
- **Attention**
  - **This documentation must be well structured TOO**
  - Un **overview** is needed, that can lead the reader into more formal and detailed descriptions of each aspect of the system

Product Documentation 6/6

- **System documentation content**
  - Requirements document and an associated rationale
  - Description of system architecture
  - Description of program organization
  - Description of each component in the system : functionality and interfaces
  - Code documentation ? → ideally self-documenting
  - A system maintenance guide
    - Known problems
    - Hardware and software dependency
    - How evolution of the system has been taken into account in its design → **extensibility**

Document Quality

- Problem
  - Too much computer system documentation is badly written, difficult to understand, out-of-date or incomplete.
  - We need well written technical ***prose***.
- Objectives
  - Document quality is as important as program quality.
  - **Many software engineers find it more difficult than producing good quality programs ☹**

Document Quality

- **Document structure**
  - **Definition** : ***The document structure is the way in which the material in the document is organized into chapters, and within these chapters, into sections and sub-sections.***
  - Each part of the document → **independent**
    - Allow each part to be read as a single item and reduced problems of cross-referencing when changes have to be made
    - Allow readers to find information more easily

Document Quality

- **Document structure : good practices**
  - All documents, however short, should have a cover page
  - Chapters, sections, subsections
  - An **index** needed if a lot of detailed, reference information used.
  - For different readers, different vocabularies

    → A **glossary** needed for defining technical terms and acronyms used in the document

Document Quality

- **Document structure : An example of cover page**

Support for System Design
Detailed Activities

Project : Your project name

Document ID : GPI-ProjectName-SD11

Version : 1.2 Date : February 1st 2013

Author : Your name

Inspected : Inspector's name Approved : Approver's name

Submitted to CM : No CM ID : N/A

Distribution : Project list

Confidentiality : Commercial

Keywords : System design, UML class diagrams

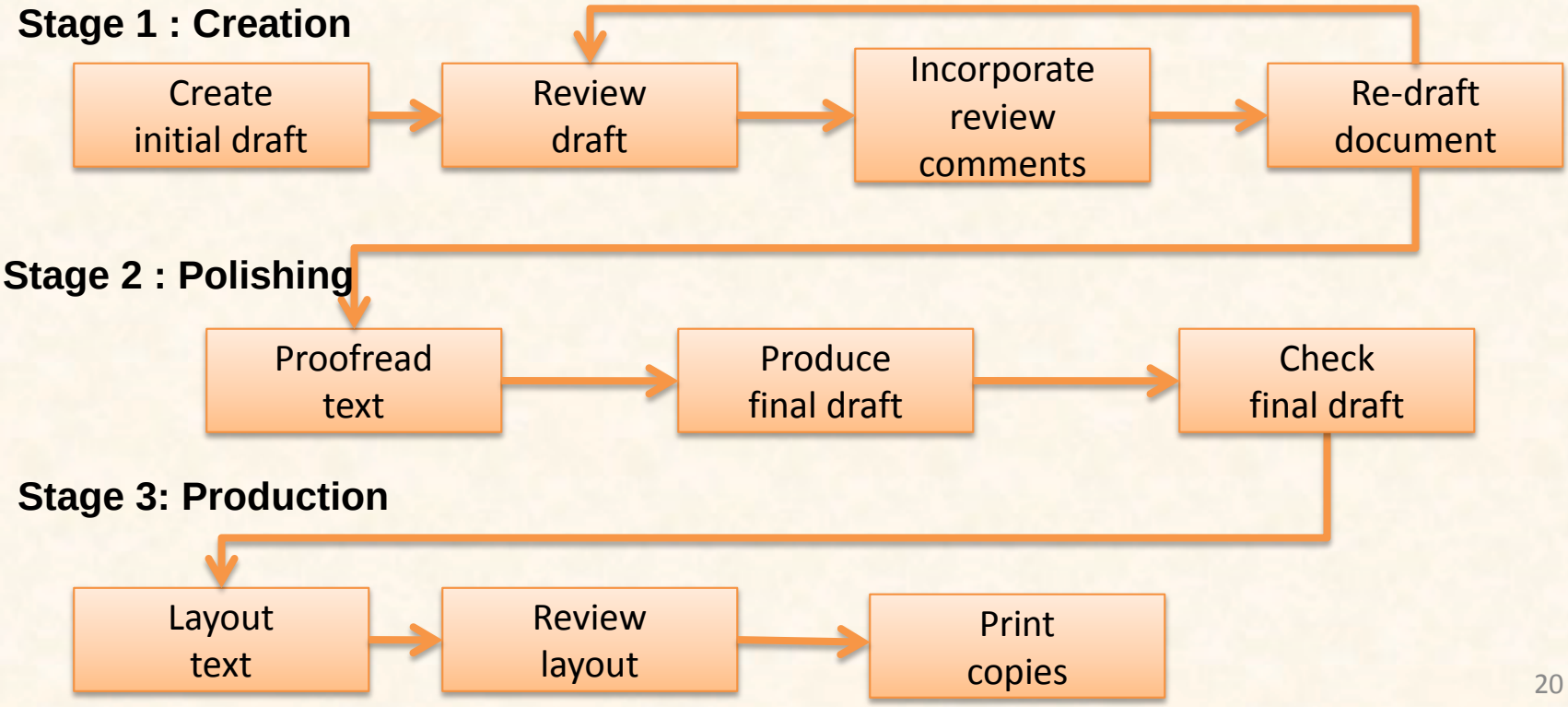
Document Quality

- **Documentation standards**
  - Objectives : To have a consistent appearance, structure and quality
  - **For your project, the appropriate standards are chosen and modified to suit your particular case.**
- **Standard categories**
  - Process standards
  - Produce standards
  - Interchange standards

This is NOT related to process documentation and product documentation !

Document Quality

- **Process standards**
  - Define the approach to be taken in producing documents.
  - Software tools used for document production



Document Quality

- **Stages of document preparation**
  - ***Document creation***
    - Initial input of the information in the document
    - Supported by word processors and text formatters, table and equation processors, drawing and art packages
  - ***Document polishing***
    - Improve the writing and presentation of the document
    - Make it more understandable and readable
    - Supported by on-line dictionaries, spelling checkers, etc.
  - ***Document production***
    - Prepare the document for professional printing
    - Supported by desktop-publishing packages, artwork packages and type styling programs

Document Quality

- **Product standards**
  - Apply to all documents produced in the course of the project development.
- Good practice
  - Document identification standards
  - Document structure standards
  - Document presentation standards
  - Document update standards
- **Attention**
  - **User documentation should be presented in a form appropriate to the user rather than the project !**

Document Quality

- **IEEE standards for user documentation (1/2)**
  - Identification data
  - Table of contents
  - List of illustrations
  - Introduction : purpose, summary of the contents
  - Information for use of the document
  - Concept of operations : explanation of the conceptual background to the use of the system
  - Procedures
    - Directions on how to use the system to complete the tasks → designed to support
  - Information on system commands

Document Quality

- **IEEE standards for user documentation (2/2)**
  - Error messages and problem resolution
  - Glossary
  - Related information sources
  - Navigational features : allow readers to find their current location and move around the document
  - Index : a list of key terms and the pages where these terms are referenced
  - Search capability : for electronic documentation

Document Quality

- **Writing style**
  - Standards and quality assessment are essential
  - However, it depends much on writer's ability
  - Objectives : construct clear and concise technical prose

- Principles
  - **Written work must be written, read, criticized and then rewritten until a satisfactory document is produced**
  - Technical writing is a craft rather than a science

Document Quality

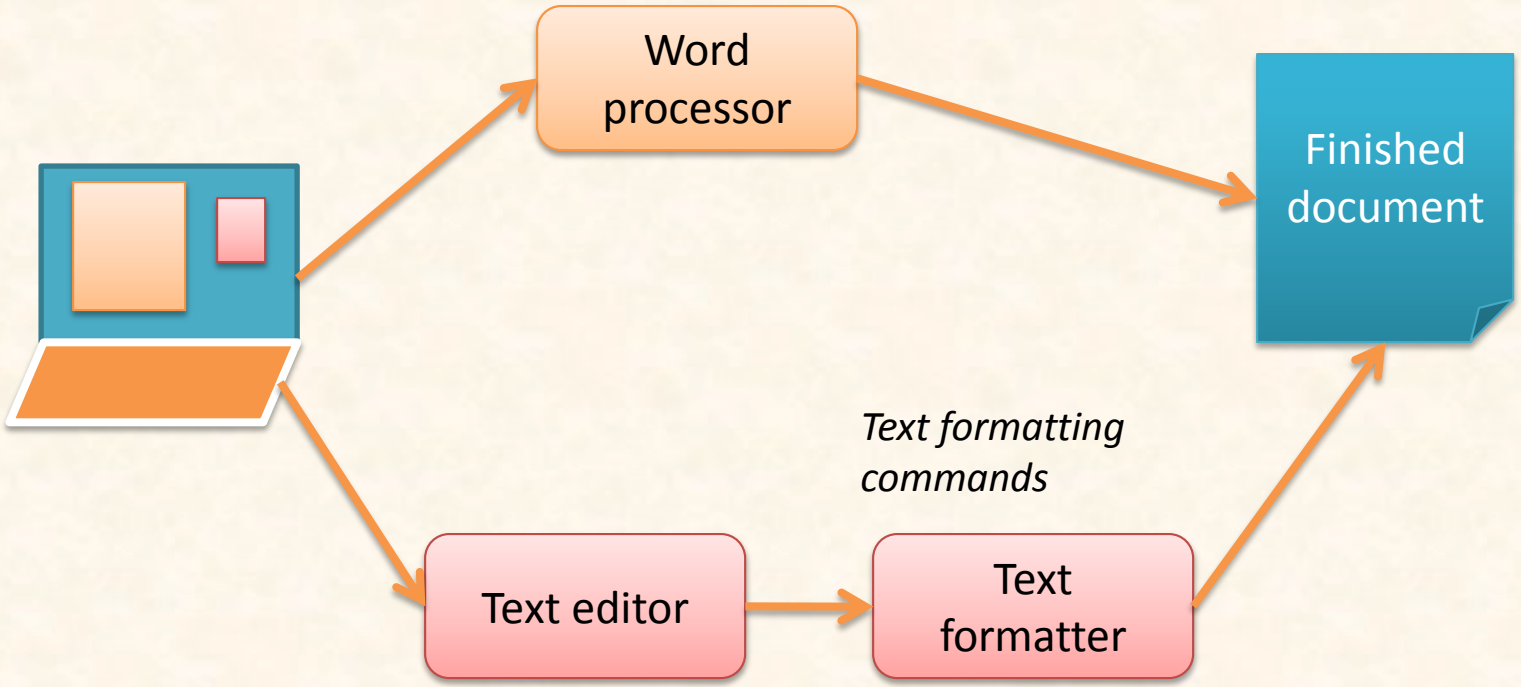
- **Writing style : good practices 1/2**
  - Use active rather than passive tenses
  - Use grammatically correct constructs and correct spelling
  - Avoid long sentences which present several different facts
    - **Ex. You can find on our intranet Web site a PDF file that mentions an important issue that we discussed at the staff meeting earlier this month which should be taken into account by all of you as soon as possible in your daily development work, because if not it will reduce our team productivity.**
  - Keep paragraph short (**max. 7 sentences**)
  - Do not be **verbose** : quality is more important than quantity

Document Quality

- **Writing style : good practices 2/2**
  - Be **precise** and define the terms that you use
  - If a description is complex, **repeat** yourself
  - Make use of **headings** and sub-headings
  - **Itemize** facts wherever possible
  - Do not refer to information by reference number alone

Document Quality

- **Interchange standards**
  - Electronic format or paper format
  - Common usage : Adobe Portable Document Format (PDF)
  - Microsoft Word can be used when draft modification needed



Today's activities

Presentation to do by Doc (EN or FR)

- **A planning for documentation work**
  - What documents to write ?
  - Who will write them, when to write ?
  - Who will inspect and approve?

- **Démonstration Release 1**
  - Présentée par MOA devant l'enseignant et toute l'équipe