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Proposals, Progress Reports, & Professional Journals

“You persuade a man only insofar as you can talk his language by speech, gesture, tonality, order, image, attitude, idea, identifying your ways with his.”

–Kenneth Burke



Learning Objectives

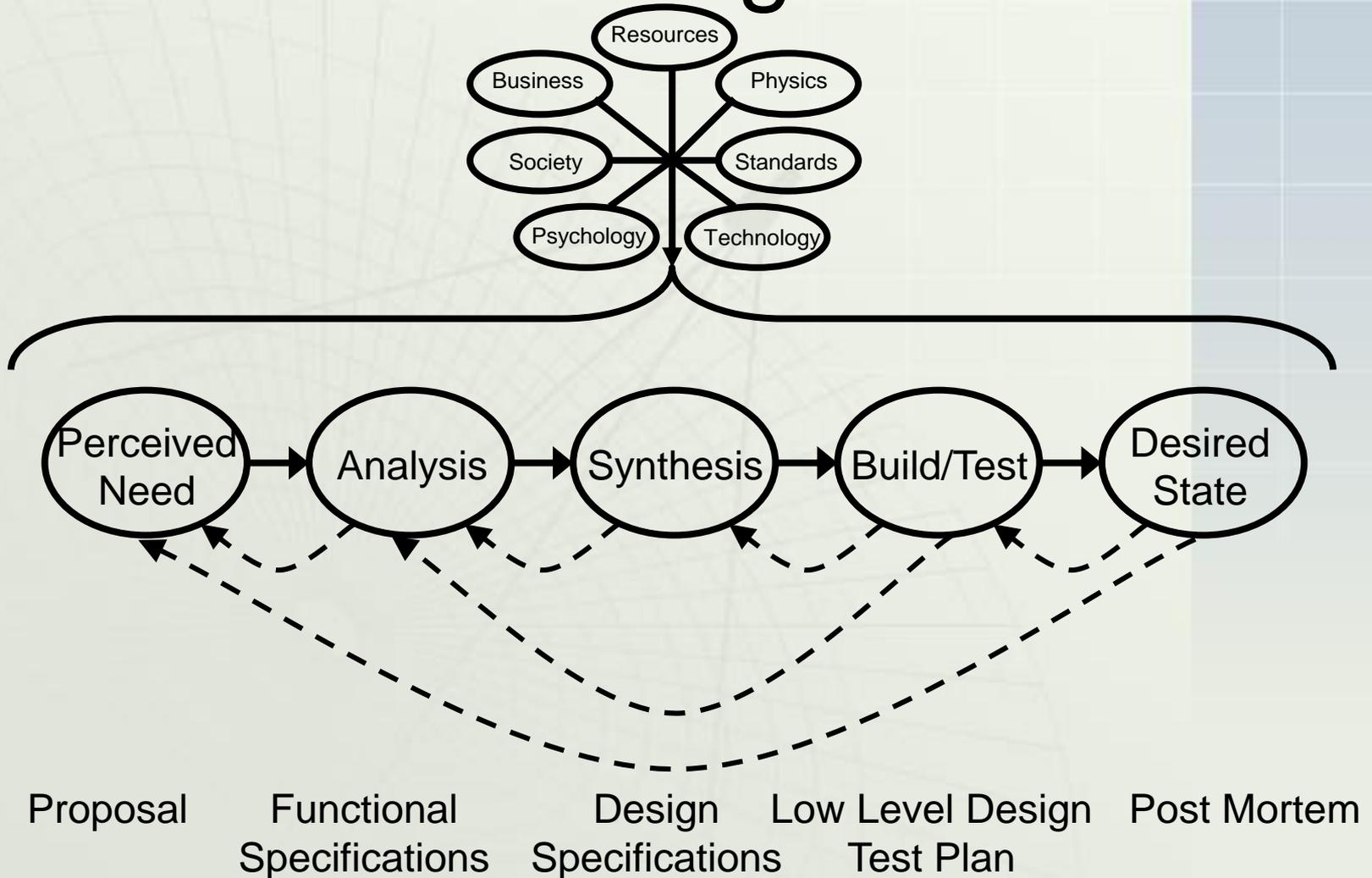
By the end of this module, you will have a basic understanding of the following:

- How documentation is related to the engineering design process.
- How to write proposals and progress reports.
- The differences between executive summaries and abstracts.
- The basics of professional journals
- Agendas and meeting minutes

	DEFINITION	ANALYSIS	DESIGN	PROGRAM/BUILD	SYSTEM TEST	ACCEPTANCE	IMPLEMENTATION	
ACTIVITIES	<ul style="list-style-type: none"> BUSINESS QUALIFICATION PROPOSAL ORDER REVIEW 	<ul style="list-style-type: none"> FUNCTIONAL SPECIFICATION 	<ul style="list-style-type: none"> SYSTEM DESIGN 	<ul style="list-style-type: none"> MODULE DESIGN CODING/BUILDING MODULE TEST 	<ul style="list-style-type: none"> TESTING INTEGRATION 	<ul style="list-style-type: none"> ACCEPTANCE TEST PROCEDURE 	<ul style="list-style-type: none"> OPERATION WARRANTY POST-PROJECT REVIEW 	
	X 2							
OBJECTIVES	SYSTEM REQUIREMENTS	WHAT THE SYSTEM WILL DO	HOW SYSTEM WILL WORK	WHY SYSTEM WILL WORK	SYSTEM WORKS	HANDSHAKE & FINAL PAYMENT	COMPLETION	
BENEFITS	<ul style="list-style-type: none"> QUALIFIED PROSPECT TECHNICAL & MANAGEMENT PERSONNEL ACCEPTANCE 	<ul style="list-style-type: none"> WELL-DEFINED SYSTEM CREDIBILITY 	<ul style="list-style-type: none"> TECHNICAL DEFINITION 	<ul style="list-style-type: none"> TESTED MODULES 	<ul style="list-style-type: none"> INTEGRATED SYSTEM 	<ul style="list-style-type: none"> MAINTAINABILITY USER SATISFACTION 	<ul style="list-style-type: none"> OPERATION INTEGRITY STATISTICS FEEDBACK HISTORY 	
OUTPUTS	<ul style="list-style-type: none"> REQUIREMENTS ANALYSIS DOCUMENT PROPOSAL PRELIMINARY PROJECT PLAN 	<ul style="list-style-type: none"> FUNCTIONAL SPECIFICATION WORK STATEMENT ESTIMATES PROJECT PLAN TOP LEVEL DESIGN DEVELOPMENT PROPOSAL 	<ul style="list-style-type: none"> DESIGN SPECIFICATION ACCEPTANCE TEST PLAN REVISED ESTIMATES REVISED PROJECT PLAN 	<ul style="list-style-type: none"> MODULE DESIGN SYSTEM TEST PLAN TECHNICAL MANUAL OPERATOR'S MANUAL USER'S MANUAL PROJECT LEADER SIGN OFF 	<ul style="list-style-type: none"> PROJECT MANAGER SIGN OFF DEMO 	<ul style="list-style-type: none"> TEST RESULTS USER SIGN OFF INVOICE TO WIGHTON FUND 	<ul style="list-style-type: none"> POST-PROJECT CRITIQUE USER SUPPORT PLAN PROPOSAL FOR DEFINITION OF NEXT PROJECT 	



Iterative Design Process



Double-Diamond Design Method

Discover

Initial Ideas or Inspiration
& Establishment of User
Needs

Market Research
User Research
Design Research
Technology Research
Interviews & Insights Gathering
Observation & Shadowing
Empathic Modelling
Information Management

Define

Interpretation & Alignment
of Findings to Project
Objectives

Information Analysis
Synthesis & Identification
Project Refinement
Project Management
Project Sign-off

Develop

Design-Led Concepts &
Proposals Iterated &
Assessed

Ideation
Multi-Disciplinary Working
Visual Management & Progress
Testing & Prototyping
Review & Improvement

Deliver

Process Outcome(s)
Finalised & Implemented

Final Testing & Approval
Production
Launch of Outcome(s)
Evaluation & Further Feedback
Future Work



Analyze Your Audience

- **P**ower (subordinates, peers, supervisors)
- **A**ge (vision, crystallized vs. fluid intelligence)
- **N**eeds/Values (money, environs, politics, information)
- **E**xpertise (high, moderate, low, mixed)
- **E**thics (honesty, credibility, accuracy)

PANEX2



Persuasive Appeals

- Ways to persuade your readers:
 - Appeal to logic or reason (*logos*)
 - Appeal to emotions, concerns, fears, desires, values (*pathos*)
 - Appeal from your credibility (*ethos*)



Ask Questions

Who Is My Audience?

- Who will read this report? Technical experts? Administrators? Business people?
- Why will they read it? What motivated them to request the report? What actions will they take on the basis of this report?
- What information have they requested? Are their instructions clear or do they need clarification?
- How well informed are they about the subject? How much background information is required? Are they familiar with technical terminology?
- What information do they need? Do I have all the information needed to address their concerns? If not, what do I need to find out and how will I do so?



Ask Questions

What Is My Purpose?

- What do I hope to accomplish by writing this report? Can I write a clear, concise statement of purpose?
- How do my goals relate to my reader's expectations? Do they share my objectives? If not, what are the points of disagreement?
- How can I meet both my goals and my reader's expectations? What do I know that they do not and how can I make them aware of it?
- What attitudes or values do they have that must be taken into account?



Proposal Considerations

➤ Audience

Andrew, Steve, TAs, (External Funders?)

Financier/Accountant, HR Manager, Senior Engineers

➤ Purpose

To persuade us that you have the expertise, the finances, the facilities, the team, and the plan



Proposal Content

- Letter of transmittal
- Title page
- Executive summary
- T of C, (L of F, Glossary)
- Introduction (include high level graphic)
- Explanation of key elements of proposal
- Analysis of need and market
- Budget (include expenses and income)
- Time schedule (both Gantt and Milestone charts)
- Description of team (or resumes as appendix)
- Conclusion
- References



Executive Summary vs. Abstract

Executive Summary	Abstract
Audience: Non-specialist	Audience: Specialist
Purpose: Persuade	Purpose: Inform
Plain language/1 st person	Technical language/Passive
General	Specific
Sometimes uses graphics	Plain text



Progress Report Considerations

- **Audience:** Lukas
- **Purpose:** To inform
- **Content:**

If everything is going well, outline your project, state what you've accomplished, and whether you are on time and on budget. Informative in nature.

If there are major changes or problems, explain and justify the problem/change. Persuade your audience here.



Engineering Journals

- **Audience:** Steve
- **Purpose:** To document
- **Form:** Bound Lab Book – no loose leaf or printed sheets (lab books with pre-numbered pages are available at Staples or on-line for about \$15). Name on outside, front cover. Contact e-mail and phone number inside. **No student number**. Neatness doesn't count, but don't erase or scribble out errors (draw a single line through errors). Glue or tape extra pages into journal.
- **Content :**
 - Dated entries
 - Description of work
 - Ideas, theories, questions
 - Musings
 - **3 entries per week (min)**
 - Pre-numbered pages
 - Observations
 - Low level design
 - Etc.
 - **Start this now!!!**
- **Note:** Please read the grading rubric and detailed description on the website for more details.
- **Warning:** Don't even think about faking your journal at the last minute as I will give you a 0.



Work Breakdown

- Your professional journal allows you to document your contributions to the project. It will also help inform your work breakdown, which must be submitted as part of the post-mortem.
- The work breakdown should outline approximately how much of the work you contributed in the following areas:
 - ❖ Research work
 - ❖ Organizational work
 - ❖ Documentation
 - ❖ Technical contributions
 - ❖ Other work
- Each team must submit a 1 page individualized copy of this breakdown (along with the acceptance test plan) to Steve 24 hours before the demo.
- Questions at the demo may be based upon this breakdown.



A Note about Meeting Minutes

I talk about these now as they must be started now; they are submitted as an appendix to the post-mortem.

- **Audience:** Steve
- **Purpose:** To document
- **Form:** See supplied template (on website)
- **Process:** Each team should document their meetings throughout the semester. I expect that you will submit at least 10 agendas plus the accompanying minutes



Document Submission

- Proposal, Functional Spec, Design Spec, Progress, Report, Test-Plan, PowerPoint Presentation, and Post Mortem must be emailed in .pdf format to whitmore@sfu.ca.
- Engineering Journals are submitted during demo.



A Few Final Points

- Each team please fill out a file card with all the names of team members and e-mail addresses. Designate one of the people as the team contact with an asterisk (*).
- Anyone not in a team of 4 - 6 people, see me now.



Conclusion

Your project proposal is due on Monday Sept 28 by 11:59 PM. Remember to e-mail it to me as an attachment in .pdf format.