Purpose Driven Document
Research

Larry Bernstein
George Huling
Activities to Identify Purpose
Driven Documentation - I

• Identify stakeholders and documents for each needs
  – Maintainers
  – Project Manager
  – Individual Designer
  – User
  – Sales Persons
  – Executives
  – Liability Lawyers
  – For communication purposes
  – Configuration management documentation
Activities - II

• For each document and its use, assign a value.
• What other artifacts can replace documents e.g. video.
• Cost-benefit analysis for each document by stakeholder
• Can we substitute an artifact with a particular activity (ephemeral)?
• To test Farmer’s Market theory for informal communication to replace project documents (Gossip).
Activities - III

• Can we replace the formal coding specifications (inspection) with code readers?
• Model the flow of documents and information.
• Can we rely on the code being self-documented? (What’s needed)
• Replace or simplify user manuals with a better humanized design.
Activities - IV

• Long-term record documentation should be retained only as architectural description (following ‘4+1’ Kruchten and well-documented code. Do not keep (Do we need to keep) requirements or design specifications current.

• What are the different levels of documentation for different classes of software? (Safety-critical, transaction, report generation, normal business). Can we find a sweet spot of those?

• Can the design record be mined from a database of program listings and architecture descriptions?
Experiments

• Train non-computer science code readers to conduct code inspections and determine their effectiveness relative to formal Fagan inspections.
• Model the flow of documents with assigned values and seek overlaps, bottlenecks and potential reduction. (See Coplien)
• Research design aid systems to see if systems exist that capture design and architecture information as a by-product. (See Bernstein, “PMS’ 1966)
Experiments - II

• Map all documents from an existing project onto the ‘4+1’ architecture model and commentary standards. Determine coverage for complete design record.

• Extract status documents and design record documents from the architecture descriptions and listings.

• Find a group of people who cover a subset of the stakeholders. Survey this subset using a research designed questionnaire to determine what documentation they found useful, not useful, and missing but would be useful if present.