1. Important Points
   1. “Software engineering is the establishment and use of sound engineering principles in order to obtain economically [sic] software that is reliable and works efficiently on real machines.” [3]
   2. “The bedrock that supports software engineering is a quality focus.” [3]
   3. A “generic process framework” 43] may include the following activities: communication, planning, modeling, construction, and deployment. [4]
   4. “The common process framework is complemented by a number of umbrella activities. Typical activities in this category include the following: software project tracking and control, risk management, software quality assurance, formal technical reviews, and measurement.” [4]
   5. “Process models … differ in fundamental ways: the overall flow of activities and tasks, the interdependencies among activities and tasks,” and the manner and degree to which each of the umbrella activities and applied. [5-6]
   6. There are several process models: prescriptive models, the waterfall model, incremental process models, evolutionary process models, prototyping, the spiral model, and specialized process models. [6-10]
   7. “The incremental model combines elements of the waterfall model applied repetitively in an iterative fashion.” [7]
   8. “Both customers and developers like the prototyping paradigm. Users get a feel for the actual system and developers get to build something immediately. Yet prototyping can also be problematic.” [8]
   9. “Using the spiral model, software is developed in a series of evolutionary releases. During early iterations, the release might be a paper model or prototype. During later iterations, increasingly more complete versions of the engineered system are produced.” [9]
   10. “The spiral model is a realistic approach to the development of large-scale systems and software.” [10]
   11. “Formal methods enable a software engineer to specify, develop, and verify a computer-based system by applying a rigorous, mathematical notation.” [11]
   12. “The Unified Process is an attempt to draw on the best features and characteristics of other prescriptive software process models, but characterize them in a way that implements many of the best principles of agile software development.” [11]
   13. “The ‘Manifesto for Agile Software Development’ [states]:

We are uncovering better ways of developing software by doing it and helping others do it. Through this work we have come to value: Individuals and interactions over process and tools, working software over comprehensive documentation, custom collaboration over contract negotiation, [and] responding to change over following a plan. That is, while there is value in the items on the right, we value the items on the left more.” [12]

* 1. “How do we create a process that can manage unpredictability? The answer, as we have already noted, lies in process adaptability.” [13]
  2. “The central notion in XP is that design occurs both before and after coding commences.” [14]
  3. “Effective software project management focuses on the three P’s: people, problems and process.” [15]
  4. “Before a project can be planned, objectives and scope should be established, alternate solutions should be considered, and technical management constraints should be identified.” [15]

1. Disagreements

“The formal methods model offers the promise of defect-free software.” [11]

I disagree with Pressman’s assertion that the formal methods model can produce defect-free software. One major source of error in software are poor requirements. Users and stakeholders cannot always express exactly what they need. Even assuming that formal methods can produce software that exactly matches requirements, if your stake holders left something out during requirements elicitation (which they will) your software will not be free of defects. Failing to completely solve the problem that the software is meant to solve is a pretty big defect.

1. Questions and Clarifications

I do not have any questions about the portion of the article covered by this summary.