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Read and Comment #1

The paper titled “Managing the Development of Large Software Systems” by Dr Winston W Royce, details Royce’s opinions on the way that the software engineering process should be handled. The paper was published by TRW, in *Preceedings, IEEE WESCON* in August of 1970. Royce gives his take as someone with a background in “development of software packages for spacecraft mission planning, commanding and post-flight analysis” (1).

Royce firmly expresses his support of extensive planning; for any software project, he recommends extensive documentation. Due to the extensive amount of communication between developers, management, and customers, documentation allows a clear method of exhibiting progress and features. In addition, extensive documentation acts as the design and specification in the early stages of software development, and is indicative of whether these areas are satisfactory. Extensive documentation is also important in the testing phase of software, so that those making improvements can identify mistakes. When operations begin, documentation allows those who did not develop the software personally to have a reference for how to use it, and make for an easier redesign and future improvements.

Following extensive planning comes Royce’s idea of analysis. Royce feels that analysis should always follow preliminary design, mainly so that proper resources and limits can be allocated and identified, respectfully, to minimize major problems that occur in the testing phase. Analysis also includes writing documents that acts as an overview and is clear and understandable.

The Waterfall model consists of the idea that progress flows primarily in one direction, from the top (design phase) through to the bottom (testing phase). Although Royce does not mention the Waterfall model directly, I would argue that he would certainly be a supporter of its principles. Royce explains that whenever possible, development flow should only regress one step, and not multiple, thus supporting a general downward-flow philosophy.

The author’s approach to software engineering problems appears to me to be inconsistent with the agile approach. Although there are elements that Royce describes that fit into the agile framework, Royce appears to me to have a much more static philosophy when it comes to ways to approach software engineering. Agile is very focused on dynamic intervention and instruction to adapt to things not previously accounted for, and to infuse the development process with many angels after each sprint, where Royce’s model is more like the waterfall model, where each task is streamlined and completed one after the other.