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Making risk analysis a "first-class citizen" in product development

Solution brief

Siemens PLM Software

The ever-increasing pressures of competition and time-to-market create many challenges for product development teams, and how to build in safety and mitigate risk is a major one. It's often paradoxical: you dare not cut corners, but the whole risk management process is like a ball and chain on the leg of your competitive capabilities. The answer may lie in rethinking where and how risk analysis fits into your overall development process and looking for ways to integrate it for improved productivity.

In a recent article, the editors of the *Tibco Blog* claim "Major Plane Crashes Are Always Technology Failures, Not Human Error." Whether or not you agree with that statement and the premise of the article, it might serve to stimulate thinking about the subject of risk analysis, and where (and more importantly how) it fits into product development.

The whole process of analyzing risk is frequently separate from the process of developing an application or product. What happens is that one group performs a failure mode and effects analysis (FMEA) or some other process, and sends the results (usually in a document or set of documents) to another group who writes up requirements and develops the system or product.

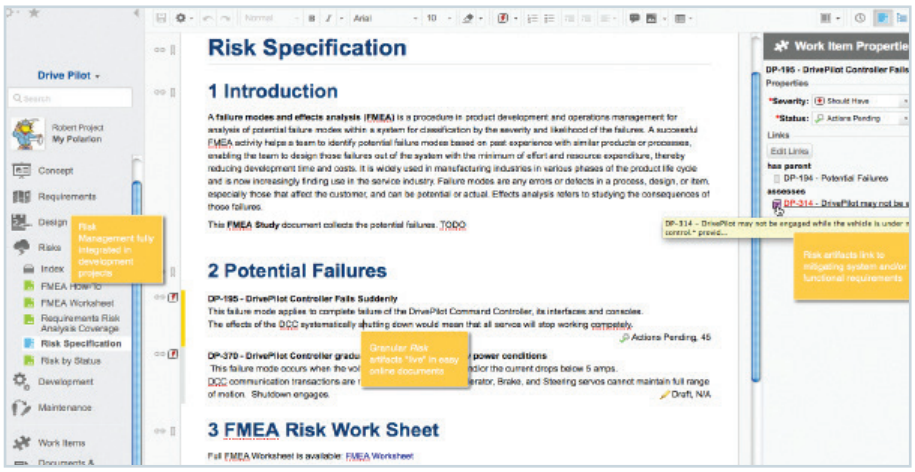
Understanding how the results of the FMEA risk study actually apply to what artifacts in development is difficult because the former isn't integrated with the latter. Risk analysis is, in effect, a "second-class citizen" in the actual development project. And it's really more important than that, if you think about it (which you probably do every time you fly).

You may not know that the Polarion® application lifecycle management (ALM) solution from Siemens PLM software integrates the risk analysis phase of systems or product engineering with the rest of the application/product development process: software requirements management, Agile development, test management and testing, and so on. You'll find out-of-the-box features including a custom work item type ("Risk"), FMEA template documents, and a preconfigured workflow that involves before-and-after Risk Priority Number (RPN) calculations from user-defined values of severity, occurrence, and detection.

Having risk analysis as a “first-class citizen” in a project means that you can easily achieve traceability from the granular risks identified in an FMEA (represented in “Risk” type work items), to mitigating requirements and subsystem designs, and from there outward to test cases that verify software requirements, the results from executing the test cases, and directly into the source code implementing the software components. Thanks to extensions such as the Polarion Connector for MATLAB® Simulink®, it is even possible to get traceability into model elements.

Siemens PLM Software offers on-demand webinars that you may find helpful in your quest to make risk analysis an integral component of your product development:

- FMEA Risk Analysis in Product Development
  https://polarion.plm.automation.siemens.com/webinar-on-demand/fmea-risk-analysis-in-product-development
- Hazard Analysis and Risk Assessment According to ISO 26262
  https://polarion.plm.automation.siemens.com/webinar-on-demand/hazard-analysis-and-risk-assessment-according-to-iso-26262



Risk analysis and management is an integral part of development projects in Polarion ALM.

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