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Large-scale Feature Evolution: Problems and Solutions from the Mobile Domain

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You may think that your requirements engineering process is fairly limited and currently not too complex to manage. Or you may be right in the middle of a storm of requirements where it is impossible to manage even the most important ones comprehensively. If you are in the former situation, it may be dangerous to relax as many successful software-intensive products have a tendency to grow very rapidly in size and complexity, and sooner than you might think you may be hit by a massive flood of feature requests and too few resources to prevent the flood from drowning your development organization, which in turn put your future innovation capability and competitiveness at risk.

In particular, requirements engineering can get very complex when building large, complex systems for large, open markets in a large ecosystem of system integrators, sub-contractors, platform providers and content providers. The stakeholders, including different roles inside these organizations as well as customers on the open market, may create an enormous flow of continuously arriving feature requests ranging from high-level, innovative ideas targeting your future customers, to low-level, solution-oriented proposals to remedy omissions or fix recurring bugs that irritates your current customers.

This mini-tutorial presents the scene of large-scale, market-oriented requirements engineering while orchestrating complex value chains and eco-systems. Experiences are provided from the mobile device domain to illustrate the challenges that you face when size and complexity grows. The tutorial also presents three pragmatic solutions that have been tried out in the mobile domain with the aim to improve the competitiveness of a continuous feature evolution process for a growing software-intensive product: (1) feature promotion models for efficient screening and effective tracking through-out each feature's life-cycle, (2) feature survival charts for tuning the through-put of your future requirements engineering process, and (3) quality feature roadmapping for effectively deciding your future software product strategy.