

Product Lines: Technological or Organizational Challenge?

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Advantages of PLE

- Easy configuration of new functions from standard building blocks
- Fast reaction to new market requirements, lower development time
- Reduced R&D effort
- Mass customization (provide individual products and solutions)
- Open up / access new market segments
- Increased quality through reuse of already proven platform
- Lower total cost of ownership
- Interoperability and flexibility
- Better usability

Success stories



Main reasons for failure

1. development dominates
 - platform is not domain specific (started with too much money)
 - technology drives platform
 - the platform drives the products
2. weak product management
 - lack of communication between product management and development
3. missing market strategy
 - wait for customer demands
 - stay flexible: infinite variation points
 - no C/V analysis and explicit scoping
4. wrong incentives
 - project heroes
5. missing PLE leadership
 - management backing
 - powerless architect (or platform architect unnecessary after doing platform architecture)

Main reasons for failure

6. missing domain knowledge
 - re-scoping to new sub-domain
 - major technology shift
7. framework instead of product line architecture
 - too complex, too generic
 - mapping of variation points from problem to solution space not clear
8. architecture follows weird organization
 - sub-project manager, resource owner and platform component owner in one
9. inefficient testing
 - no automated test
 - no PL test strategy
10. other tooling
 - configuration management
 - tracing, meaningful

Some proven experiences

- **Software Architect in place**
 - Defined responsibilities
 - Scalability through delegation and review
 - Responsible for variability management
- **Maturity of organizations – minimal expectations:**
 - Reasonable requirements
 - Architecture description
 - Automated system tests
 - Sophisticated configuration management
- **Mechanisms for implementing variability**
 - One of the most mature areas of software product families
- **Close collaboration between product management and development**
 - Intensive integration of product management
 - Product managers should be in the critical path – not watching from aside
- **Separation between problem space and solution space**
 - Clean separation avoids much confusion

