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Document Version

Publisher's PDF, also known as Version of record

Publication date:

2004

[Link to publication in University of Groningen/UMCG research database](#)

Citation for published version (APA):

Wijnstra, J. G. (2004). *Variation Mechanisms and Multi-view Architecting in Platform-based Product Family Development*. [Thesis fully internal (DIV), University of Groningen]. s.n.

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VARIATION MECHANISMS AND
MULTI-VIEW ARCHITECTING IN
PLATFORM-BASED
PRODUCT FAMILY DEVELOPMENT

door

Jan Gerben Wijnstra

1. Stable interfaces towards the clients and plug-ins are crucial for a component framework; a domain model is indispensable to achieve this stability.
2. Ideally, a component framework only exposes generic interfaces to its client. In practice, specific interfaces are sometimes needed.
3. Systems that implicitly apply design aspects do not fully benefit from these aspects since they lack the uniform handling of these aspects.
4. The problem with the rectangular and circular CO₂ filter of the command and lunar modules in the Apollo 13 flight underpins the importance of uniform handling of design aspects.
5. The benefits of a product family approach are evident to everyone; the effort needed to introduce a product family approach is however often underestimated.
6. The number of variation points in a product family is not a measure of its quality; a product family may improve by reducing the number of variation points.
7. The focus of product family research seems to be on technical issues, although non-technical issues related to process, organization and business are probably even more important for successfully developing a product family.
8. In product family development, finding the right balance between generic and specific plays an important role. For example, assets in a platform must on the one hand be generic enough to cover several products and on the other hand specific enough to enable easy use within a specific product.
9. The city of New York (see cover) illustrates ideas presented in this thesis: the city has an architecture with frameworks (the squares delimited by the perpendicular streets) in which buildings with variation in size and shape have been plugged,

and each of these buildings deals with aspects like water, electricity and air-conditioning.

10. An article-based thesis is the most suitable way for industrial PhD candidates to complete a PhD thesis: it enables the spreading of the writing and review effort over the years.