Usability of Feature / Variability Models

- Definition
  - Subject: feature, variability models
  - The models are not being used, rather than that they are not usable
- Uses
  - Impact Management
    - decision making
    - decision documentation
  - Product Derivation
  - Design of platforms
  - Knowing which products have to be updated
- Problems
  - Different models
    - No traceabililty,consistency
    - Different groups
  - Islands
    - Knowledge
      - A lot of work to translate between the representations
      - Protection of expertise
    - Tools
      - No refactoring support
      - No propagation of changes through the traceability chain
  - Motivation
    - Credibility
      - Engineers: if Microsoft, Rational, etc. doesn't do it, it isn't interesting
      - Managers: have to have the numbers to justify the measures
    - Economic
    - Top-down vs. bottom-up champions
  - Adoption
    - Migrating
      - variability representations must coexist with existing tools and other models currently being used
    - Deployment
      - creating
        - no time to elicit the knowledge
      - script solutions already exist
  - Responsibilities - gaps, irresponsibility
  - Informality
    - Requirements in large word documents
    - Design knowledge in UML Models
  - evolution
    - Maintenance
    - Complexity
  - Scaleability
    - known tools don't scale
  - Documented success stories unknown
- Solutions
  - Incremental improvements, not a big bang
    - let the islands grow together
    - support them in their own islands, but try to get them to widen their horizons
  - Prioritize the order of the problems
    - get quick successes
    - collect & document proof
  - Formal programmes
    - management support
    - CMM(I)
    - ATAMs
  - Tools
    - Views, abstraction view generation
    - common data exchange formats
      - synchronisation of models
    - traceability support
  - Standardisation (cross-cutting)