



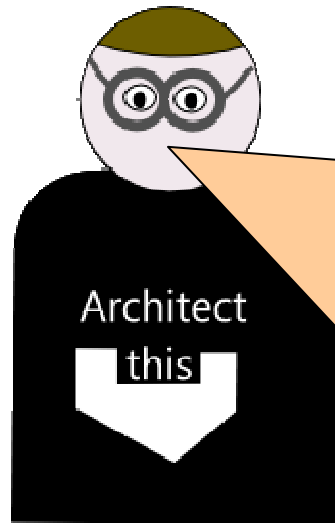
Combined Reuse

Product Line Engineering meets Service Oriented Architecture

Georg Leyh
Siemens AG
May 10th, 2012



- Reuse in Solution Business: Meet Archibald!
- Typical Forces in Solution Business
- INDENICA Approach
- INDENICA Toolbox
- Further INDENICA Topics
- Discussion



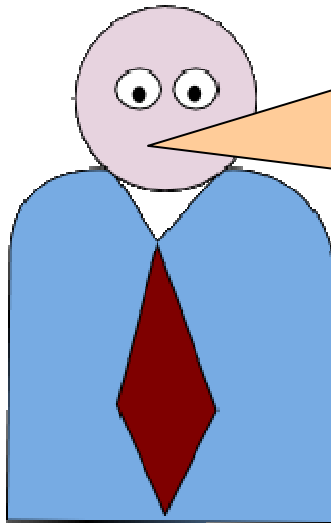
Hi!

I am Archibald, the Software Architect.

I am working in a department specialized on warehouse management solutions.

Let's see, what my boss has for me...

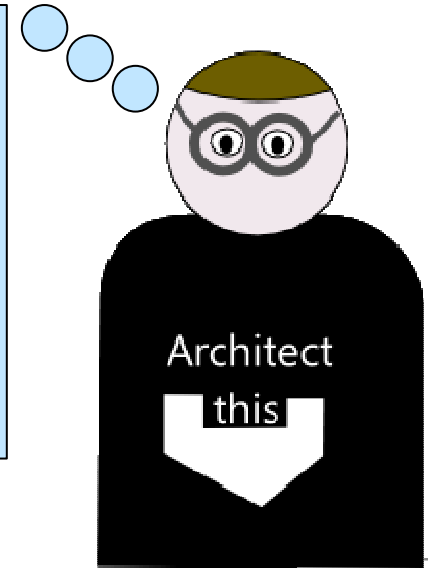
Customer Requirements

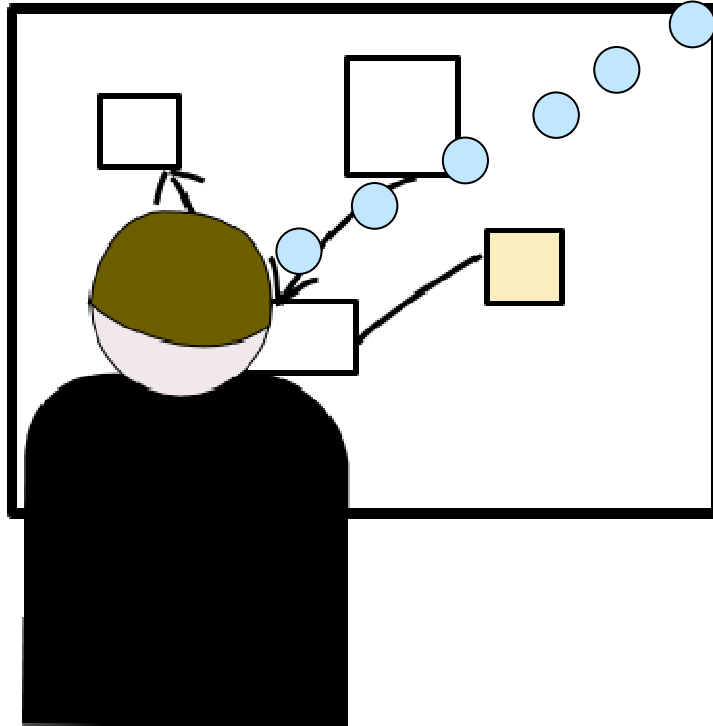


... Customer...
... Complete solution...
\$\$\$
...very soon...cheap...

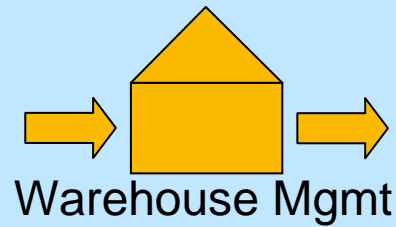
never did this before

not our core
competence

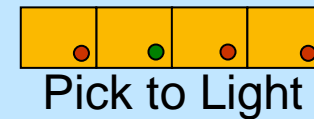
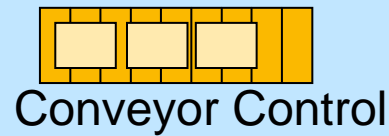




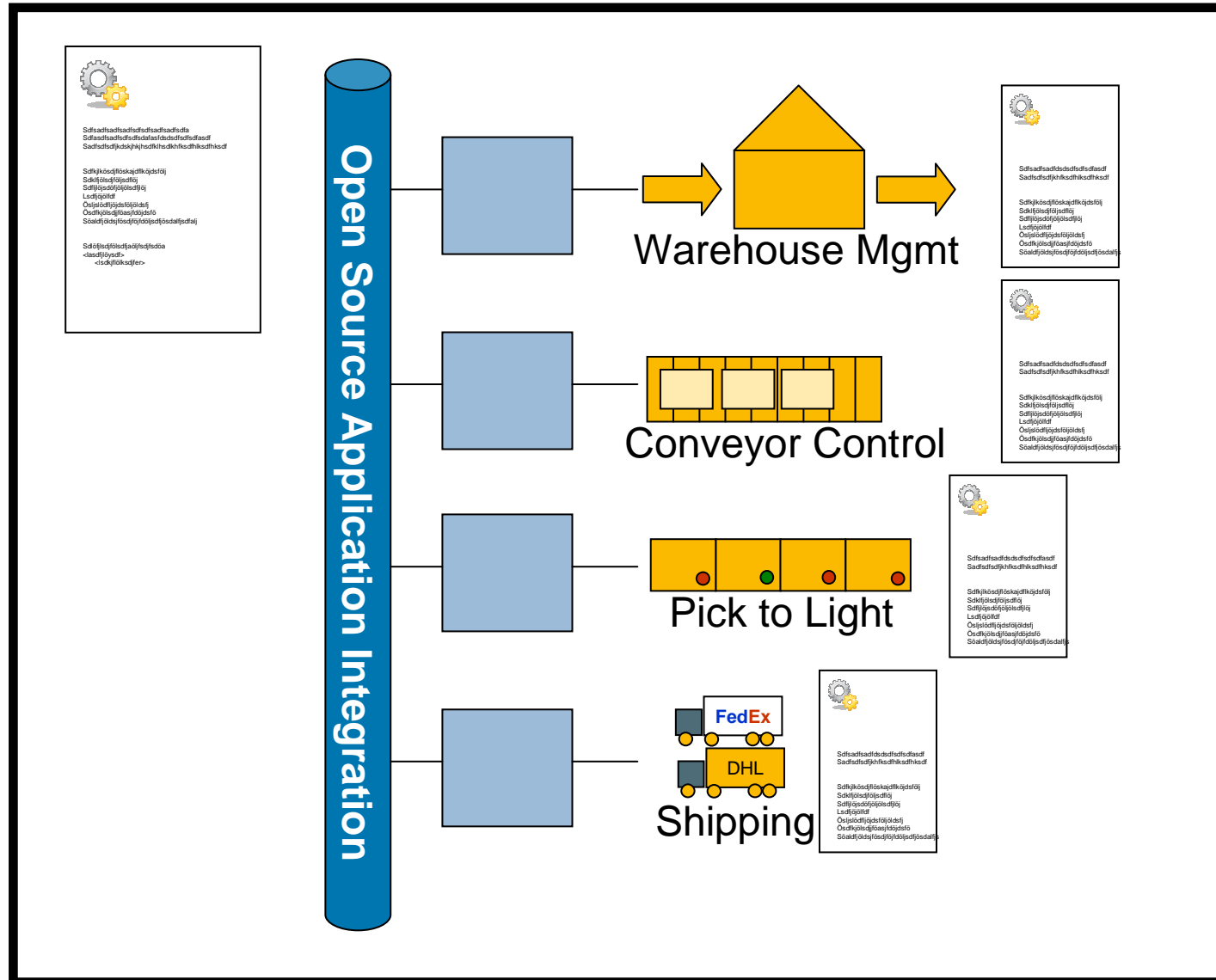
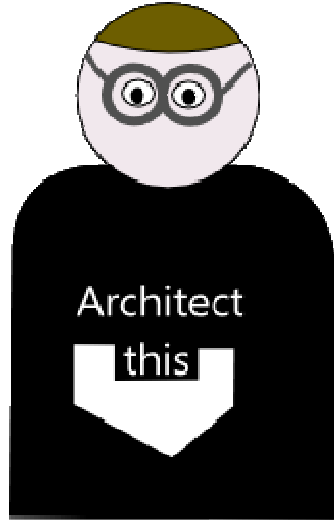
Our Portfolio:



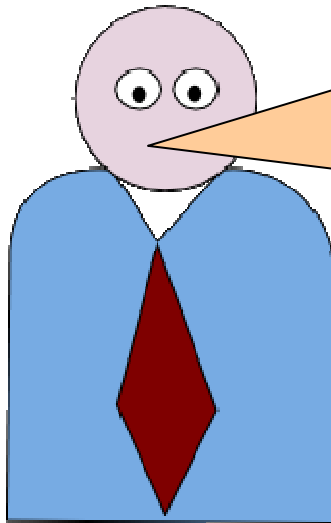
Common of the shelf



Solution Architecture

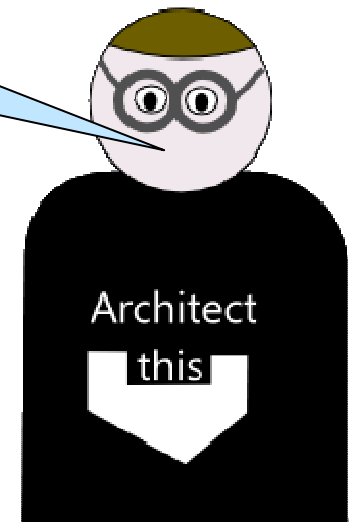


Second Project

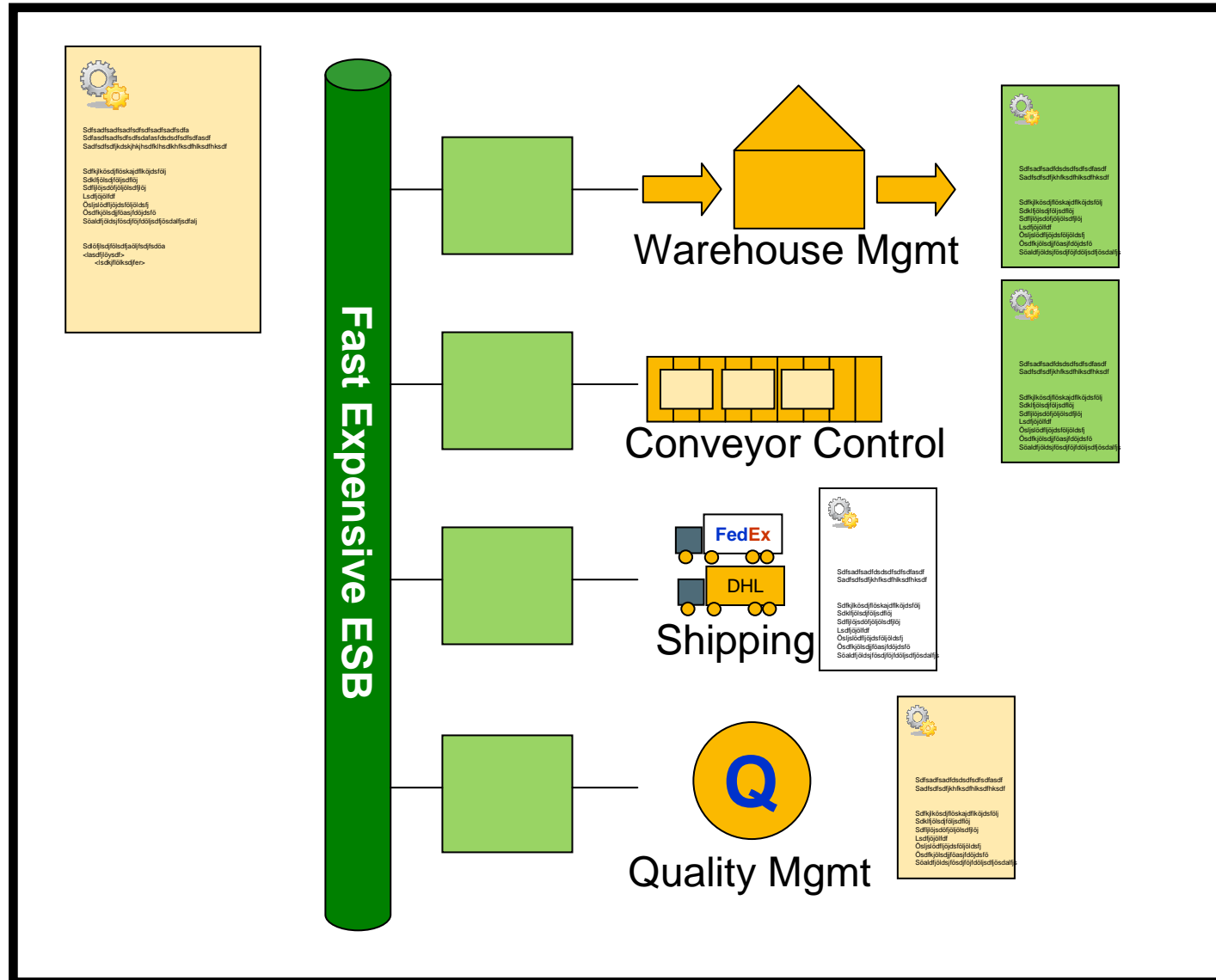
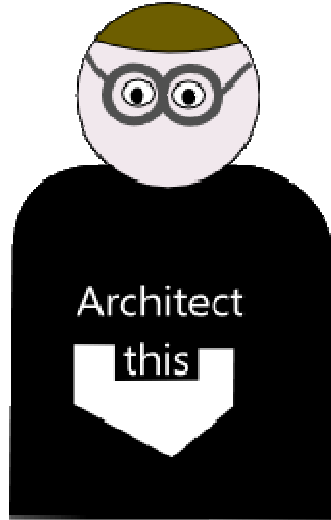


...Just like the last...
\$\$\$
...high throughput...

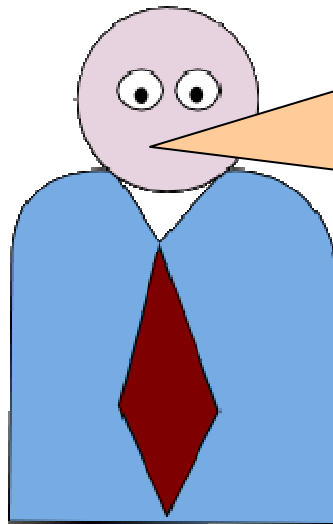
ok



Secod Architecture

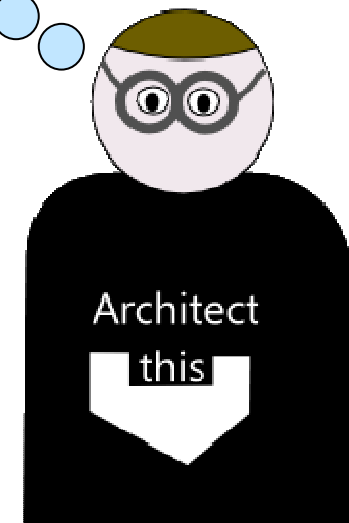
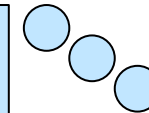


Third Project



... an easy one..
... combination of last
two...

Hm...

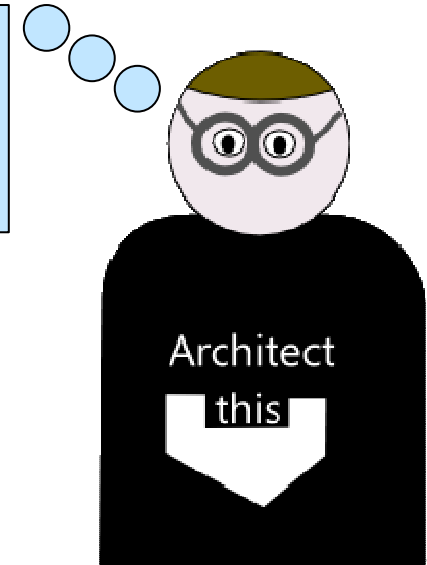


Third Project

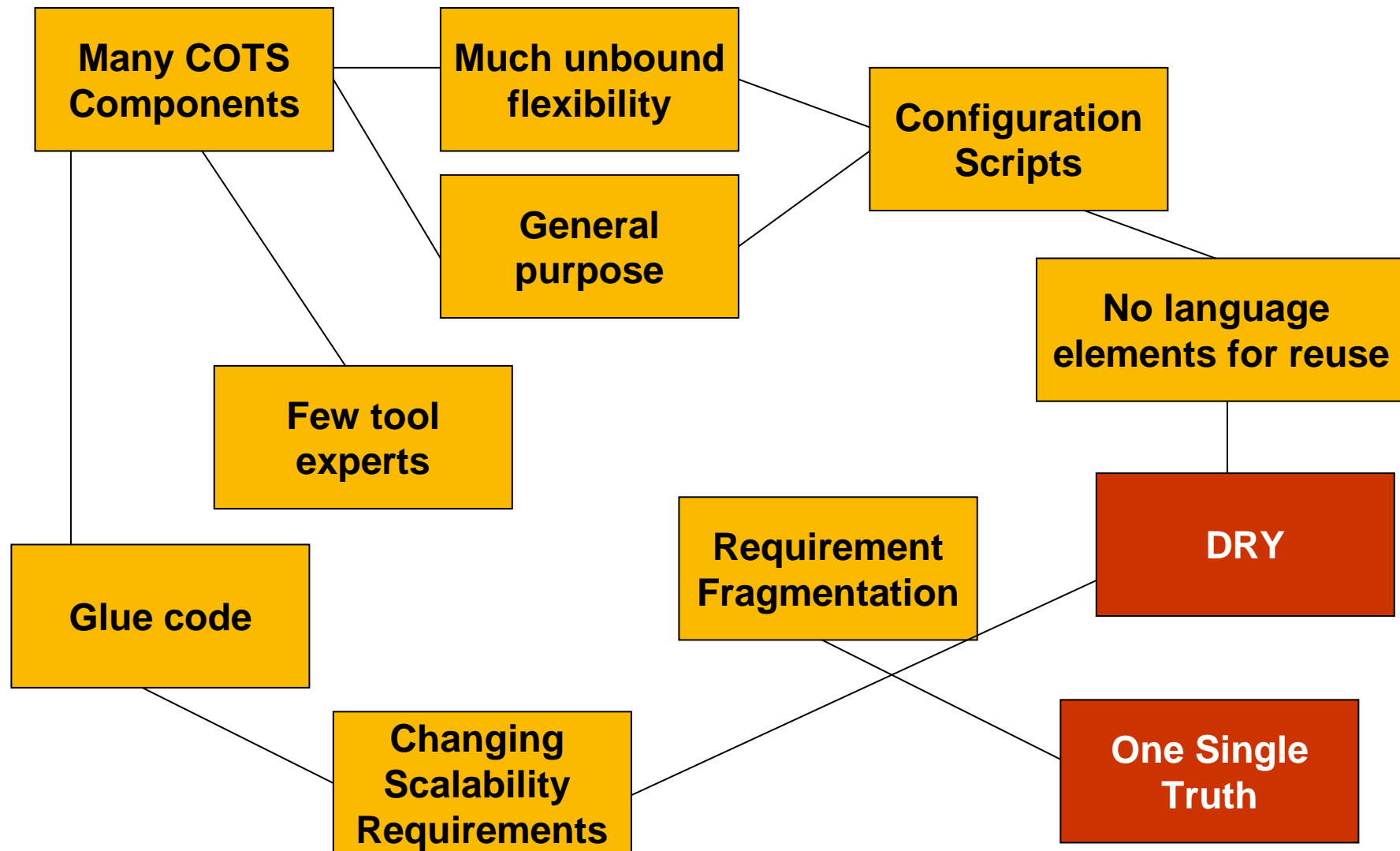


Archibald!
Follow me to
Maintenance Hell!

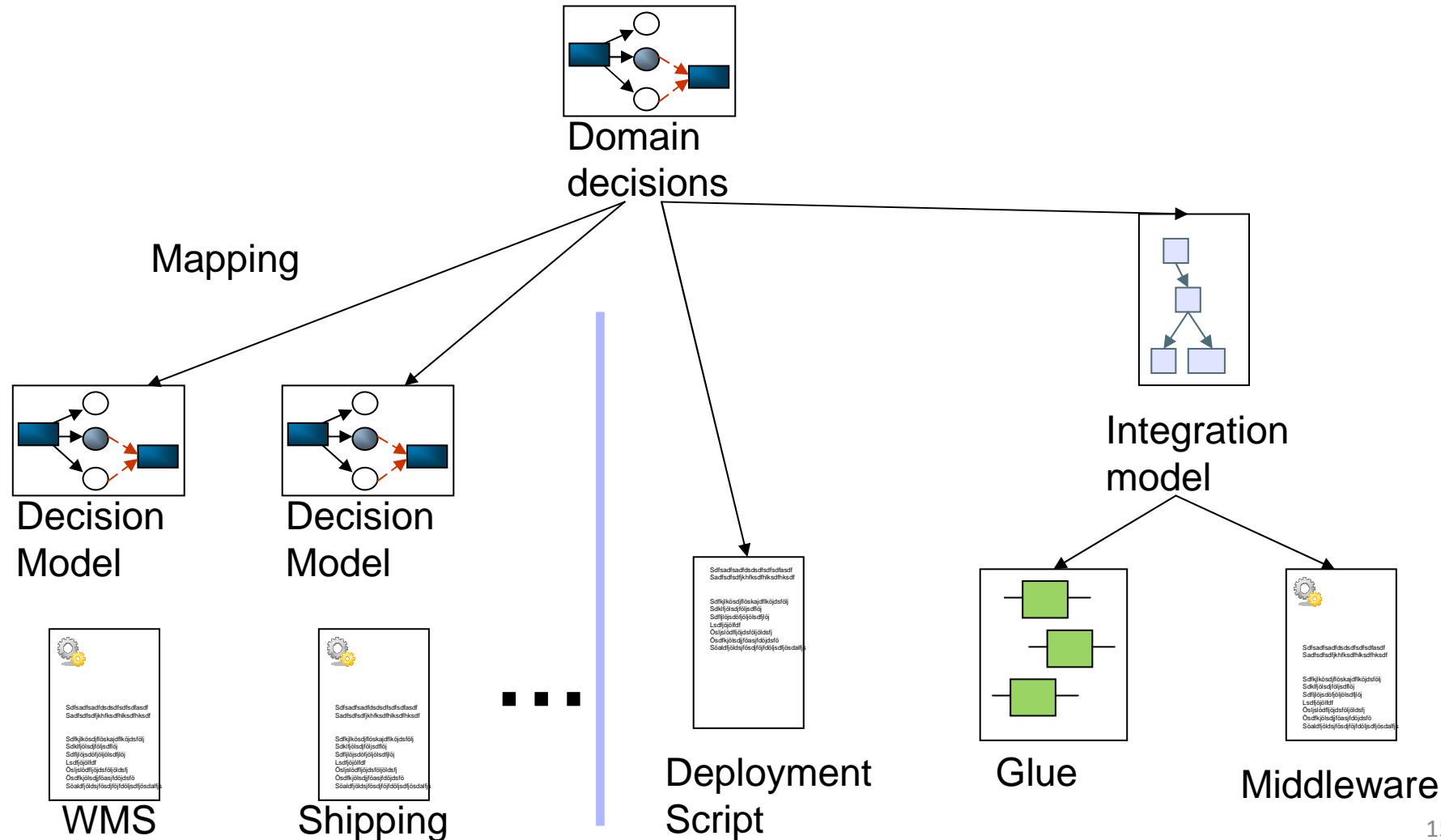
Can I really do nothing
about this?



Forces in Solution Business



Domain oriented decision model



- Use Product Line Approaches for the complete solution
 - Use domain vocabulary to describe the variability of the solution
 - Reduce Flexibility with COTS specific decision model
 - Map domain variability to flexibility provided by COTS tools.
 - Generate glue code / middleware configuration from Platform Independent Models
- ⇒ Create a domain specific family of integrated solutions



- Specialized decision modeling language
- Mapping and generator framework
- View based integration architecture framework
 - Model contains variability information
 - Can describe both Platform Independent and Platform Dependent Models
 - Platform (Middleware) specific generators for
 - Glue Code
 - Middleware Configuration
- Variability-Aware Deployment Framework

Advantages

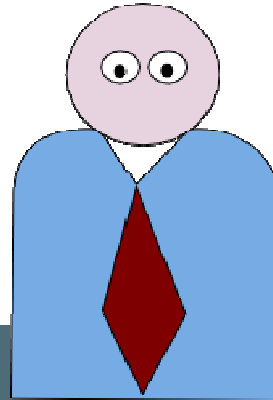
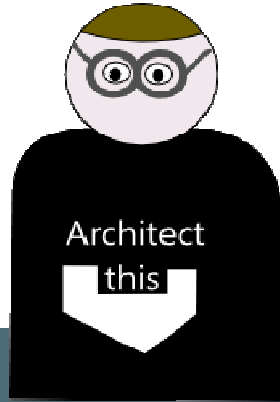


Much unbound flexibility	Domain oriented decision models reduce flexibility to the amount needed for business
General purpose	
Few tool experts	Tool Experts only necessary for mapping from Tool decision models to configuration files
Requirement Fragmentation	Reduced Requirement Fragmentation: All occurrences of variability requirements are bound to a single decision
One Single Truth	Single source of truth for integration needs



- Scoping of domain specific service platforms
- Requirement modeling for domain specific Platforms
- Architecture decision support framework
- Governance Aspects
- Unified Monitoring and Adaptation of Solutions

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THANK YOU!

