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Lars Martin, Clean Code Days 2013, 11.09.2013



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Who am I?



- Developer, Architect, Consultant
- Java Enterprise, Eclipse, Continuous ...



01100101 00100000 00111001 01000110 01100111 01100101 00100000 00111001 01000110 01100111 01100101 00100000 00111001 01000110 01100111 01100101
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Agenda

- + introduction into model based software modernization approaches (software evolution)
- + introduction of Eclipse based tooling
- full migration of legacy systems



"Make sure you know what the code does before you attempt any modifications, don't just jump in."

Motivation

- **legacy system**
- **heavy database access**
- ~~ORM~~ → **java.sql.***
- **new team**

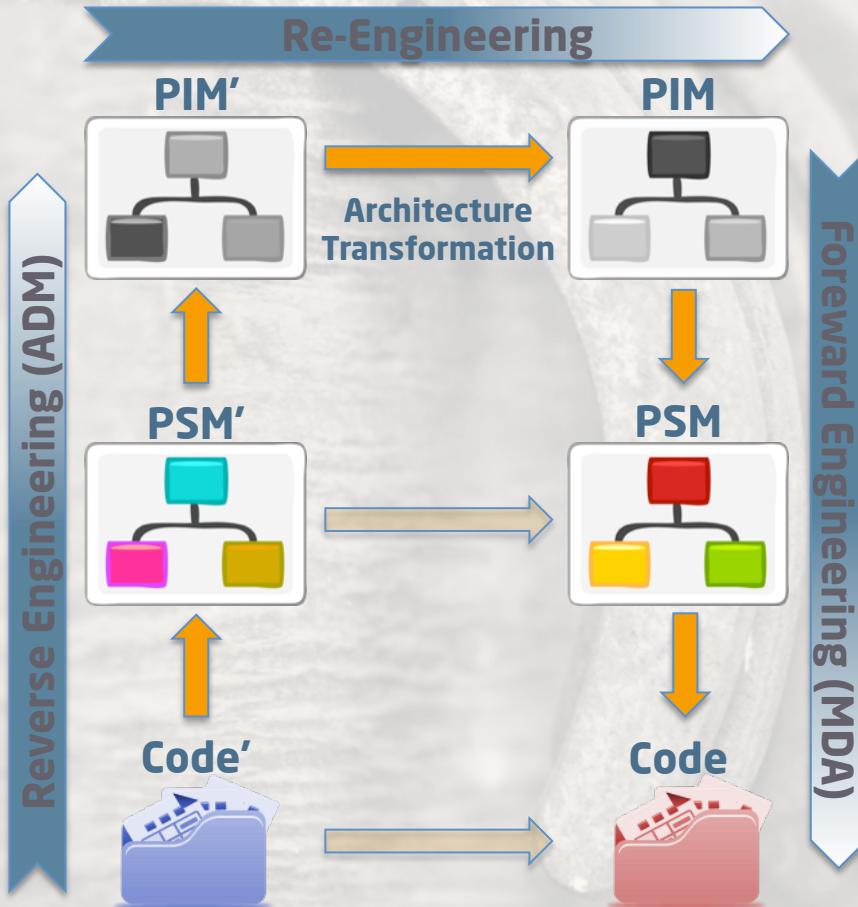
Motivation

■ Raising Questions

- **which tables will be accessed?**
- **will other tables (modules) be accessed?**
 - **if yes, migrated already?**
 - **automation possible?**

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Horseshoe-Model



Reverse engineering: "... is the process of analyzing a software system to create representations of the system at a higher level of abstraction."

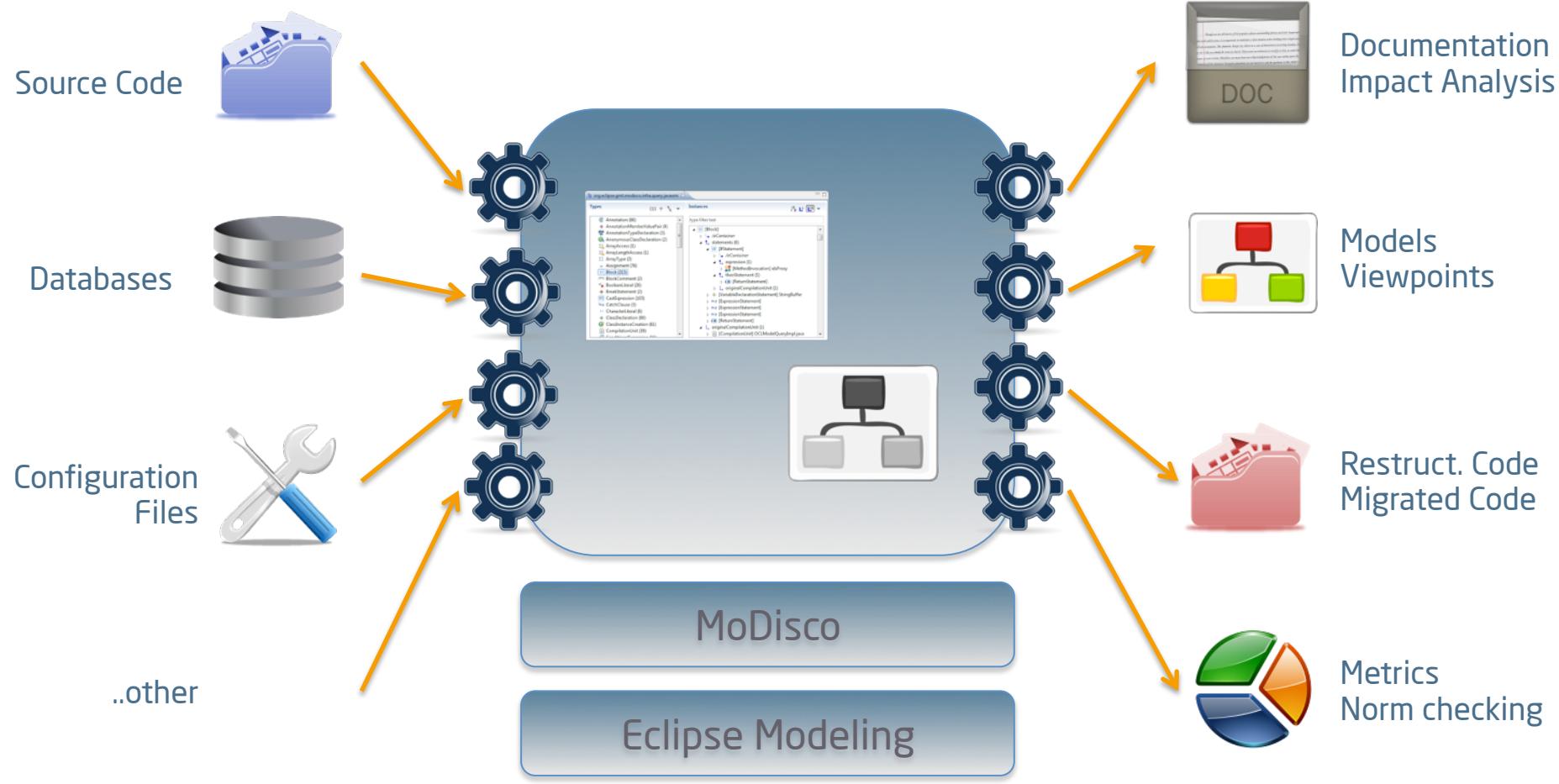
Re-Engineering: "... is the analysis and modification of a software system to change its form and implement it in its new form."

(Forward) Engineering: "... is the way of designing systems, starting from abstract logical and implementation independent specification to gradually lead to the implementation of a physical system."

© unknown

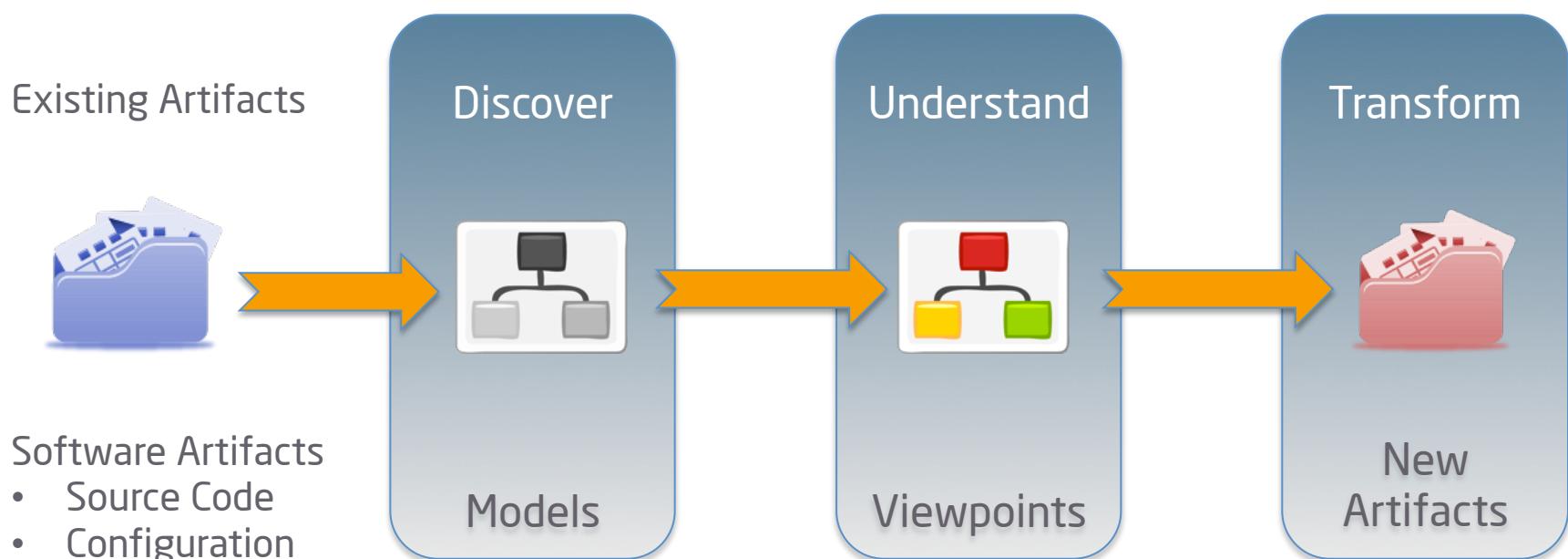
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MoDisco - Concepts



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MoDisco - Modernization Phases



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MoDisco - Use Cases



BPM

Data Flow

ADF

jUnit^{3/4}

Coverage

SOA

E4

JEE/.NET

JavaFX

EJB^{2/3}

...

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MoDisco - Use Cases



- **Quality Assurance** (Metrics, ...)
- **Documentation** (Structure, Dataflow, ...)
- **Refactorierung** (Design Pattern, Standards, ...)
- **Migration** (Framework, Architecture, ...)

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Practical Session (1/2)

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Practical Session

jUnit4



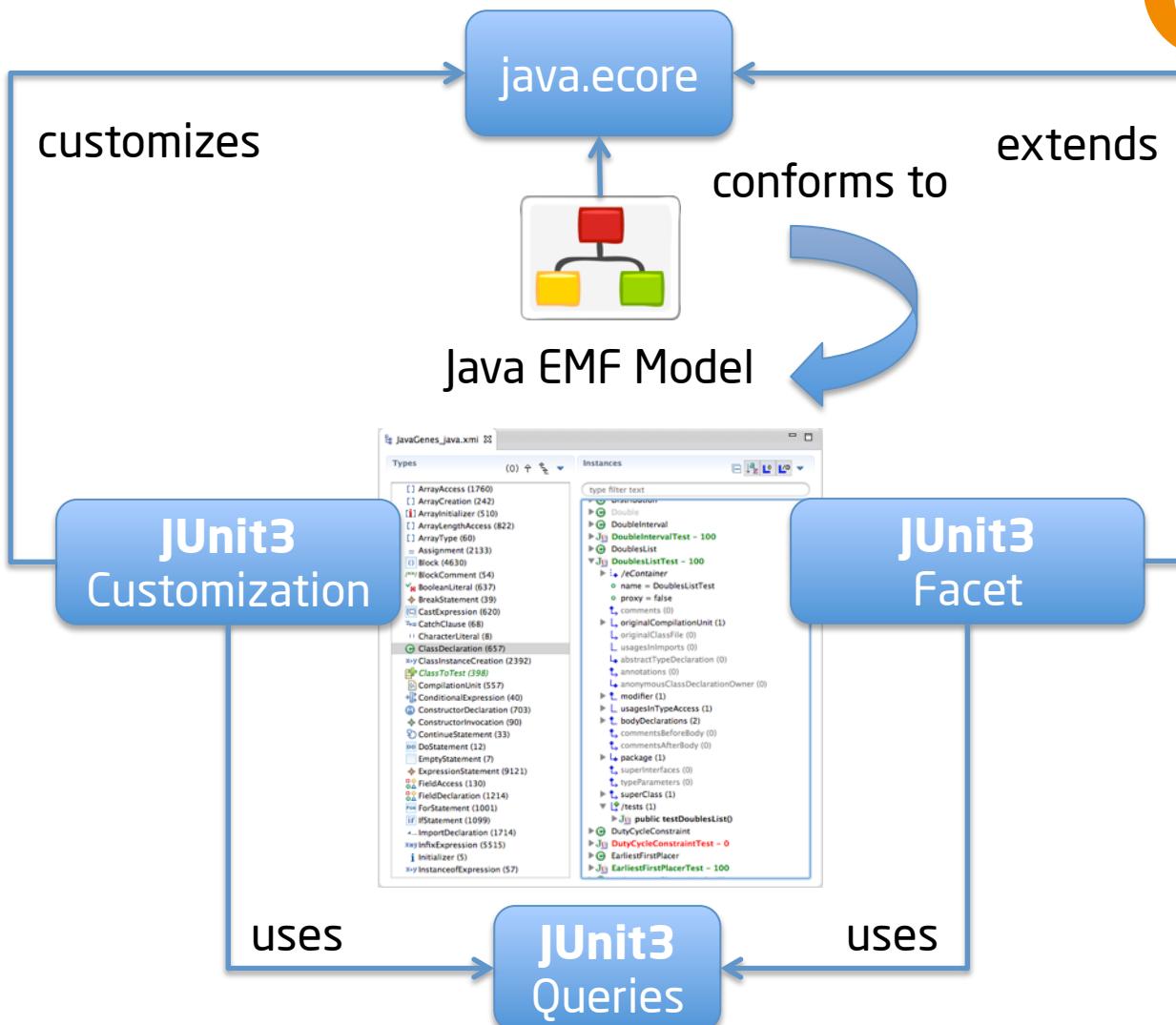
jUnit3



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Towards Clean Legacy Code



Practical Session (2/2)

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00100000 01100011 00111001 01101001 00100000 00100000 01100011 00111001 01101001 00100000 00100000 01100011 00111001 01101001 00100000 00100000
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Towards Clean Legacy Code

Practical Session

A photograph of a tall, reddish-brown industrial chimney emitting a large plume of white smoke against a clear blue sky. The text 'Abstract Factory, Adapter, Bridge, Builder, ..., Singleton, ..., Visitor' is overlaid on the right side of the image.

**Abstract Factory,
Adapter, Bridge,
Builder, ..., Singleton,
..., Visitor**

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01100101 00100000 00111001 01000110 01100111 01100101 00100000 00111001 01000110 01100111 01100101 00100000 00111001 01000110 01100111 01100101
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Towards Clean Legacy Code

Conclusion

- ✓ Customizability
 - Metamodels
 - M2M, M2T
- ✓ Extensive
 - Discoverer
 - Queries
- ✓ Workflow
- ✓ DSL (Xtext, ...)



- ✓ (Focus on Java)
- ✓ Entry barriers
- ✓ **Toolset**

Outlook

- ✓ Metrics on software maintainability
 - bugs / commits per time unit
 - committer per time unit
 - ...
- ✓ Identification of variants within branches
 - modularization
 - ...
- ✓ Sync domain model <-> DB



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Master Thesis / Abschlussarbeit - Software Engineering

Aufgabengebiet:

- Entwicklung von Methoden zur Informationsgewinnung
- Implementierung der Methoden mittels Eclipse basierter Technologien

Studienbereiche:

- Informatik und -Informatik



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