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# WCRE 2013 - Industry Panel Statement

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Jens Borchers - Application Management Services

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# Re(verse) Engineering in My Career



## A look back across the decades

- ➔ 1980's
  - Operating Systems Migrations
    - UNISYS to IBM (including transaction processing) middleware
  - Language Conversions
    - COBOL to COBOL (yes, no misspelling!)
- ➔ 1990's
  - Database Migrations
    - "Anything" (Hierarchical, Network, Indexed) to Relational
  - Language/Framework Conversions
    - 4GL back to 3GL
  - "The Golden Era" of RE-Projects and Technologies
    - Introduction of EURO in banking systems (Target date: January 1, 1999)
    - Y2K (Target Date: January 1, 2000)
- ➔ 2000's
  - All of the above + 3GL to OO Languages on-top




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# Application of Reverse Engineering Techniques



## Expectations and Real-life Experiences

- ➔ The Initial Goal of Reverse Engineering
  - Recreate the initial artefacts within the development process
    - Input: Existing source code making up the systems in operation
    - Output: Design or even requirement artefacts
  - ➢ The famous “Sausage back to Pig” – Paradigm
    - To Be Doomed to Failure!
- ➔ The Real Life of Reverse Engineering in Industrial Deployment
  - The well-proven “Under the Hood” Technology for many RE approaches
    - Recover Technical Structural Information from Source Code
    - “First half” of conversion tools (identify syntactical constructs and store them in a language independent format)
  - Technical Foundation for many Quality Management Approaches
    - Identify Programming Deficiencies ⇨ “Technical Debt Assessments”
    - During the last few years ⇨ “Security Vulnerabilities”




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# Industrial Usage of Reverse Engineering



## Where Do We Apply It Today?

- ➔ Application Management Services
  - Outsourcing of “Run” and “Change” the Business Activities
- ➔ Deployment of RE Technologies
  - Initial Assessment at Time of Contract Negotiations
    - High Level Assessments of Source Quality (across all artefact types)
    - Basis for Contract Offering
  - Detailed Assessments at Time of Transition
    - “Due Diligence”, Calculation of Technical Debt
    - Create Master Plan for Quality Enhancements during Contract Life
    - Define Service Level Agreements for “Change the Business” Activities
  - Apply RE Technologies within Software Evolution Activities
    - Within Dedicated Projects to Evolve Software Significantly




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# Industrial Usage of Reverse Engineering

## Bottom Line from my Perspective

➔ RE Technologies are Commodity
- No “quantum leaps” for industrial usage during the last years

➔ RE Spectrum has been expanded
- Combine program source assessments with operations key indicators
  - Correlations between complexity and production incidents
  - Correlations between intrinsic quality and change frequency
  - ….
- Feed software data warehouse with data about software and process aspects
  - Apply data analytics on key indicators of large application portfolios
  - Better budget allocation with regard to life cycle indicators
  - Serve increasing compliance requirements (banking and finance)

# Thank you for your attention!

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