Software Process Improvement at Raytheon
Thomas J. Haley, Raytheon Electronic Systems

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- Claimed to make processes more productive and predictable, while also raising software quality
History

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- 1995: IEEE Computer Society’s Software Process Achievement Award
- Since then, the organization has continued to improve its processes
About Raytheon

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- Huge expansion in 1980’s
- Internal review revealed CMM level 1!
Process Improvement Model

- Infrastructure
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- Infrastructure
  - Policy and Procedures
Process Improvement Model

- Infrastructure
  - Policy and Procedures
  - Training
Process Improvement Model

- Infrastructure
  - Policy and Procedures
  - Training
  - Tools and Methods
Process Improvement Model

- Infrastructure
  - Policy and Procedures
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  - Tools and Methods
  - Process Database
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- Measurement and analysis
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- Measurement and analysis
  - Data measurement definitions
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Product and Process Improvement

- Participation in system definition
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- Participation in system definition
- Requirements
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- Inspection
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- Pathfinding
Quantitative Methods

- Continuous evolution
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- Measuring the cost of quality (figure 4)
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- Measuring productivity (figure 5)
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- Measuring the cost of quality (figure 4)
- Measuring productivity (figure 5)
- Measuring predictability (figure 6)
- Measuring product quality (figure 7)
Conclusion

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- ISO 9001 also achieved
- But do quantitative methods work for other organizations?