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# Software Quality In The Real World: Leveraging the CMMI

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# The cost of poor software quality

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- # The cost of poor software quality is just too high!
- # There's enormous market pressure in many areas
- # What are the cost drivers?
  - Too many defects shipped
  - Too much time spent doing rework instead of developing new products and features

# Reducing the cost of poor software quality

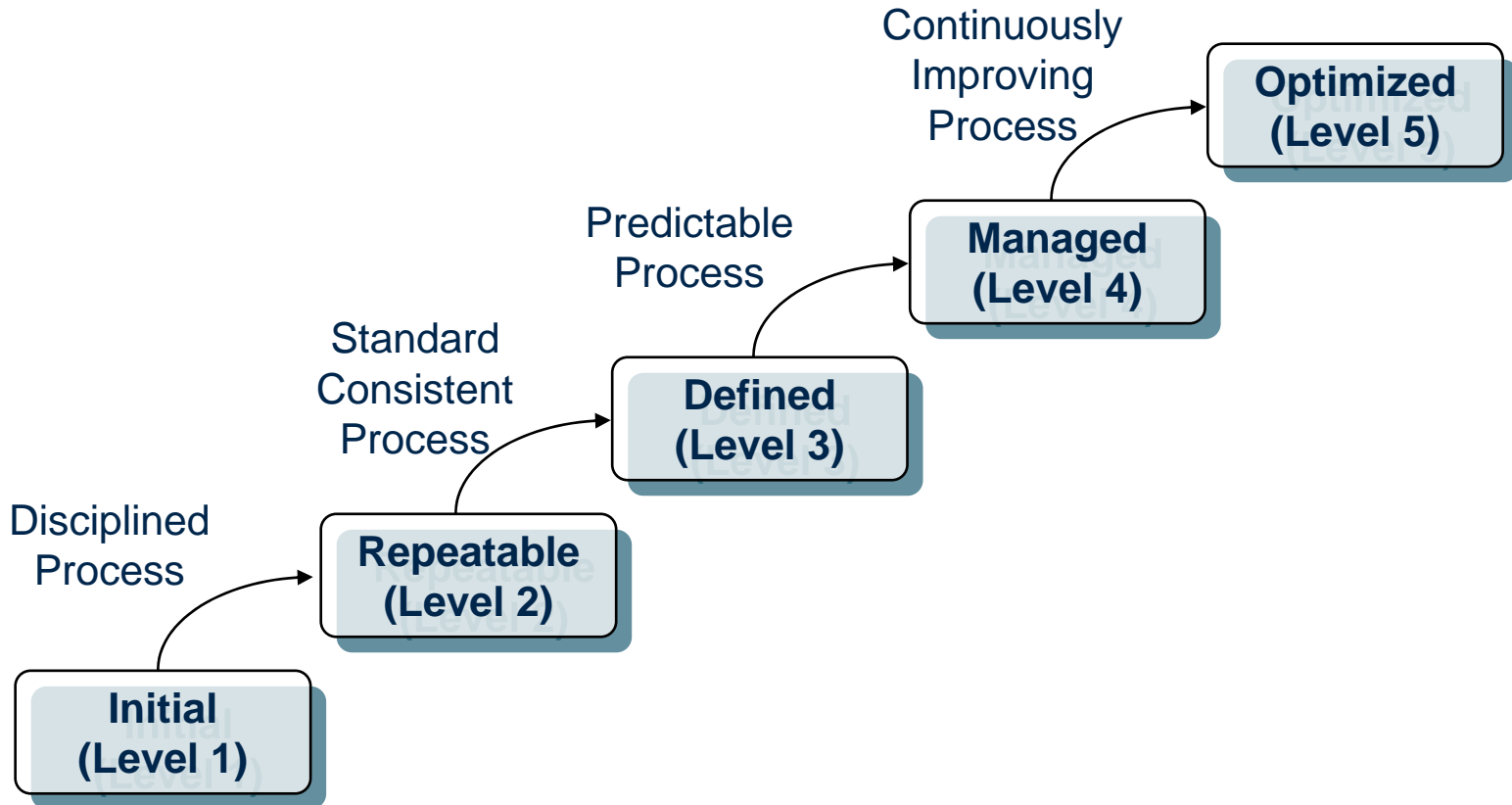
## # The good news: It can be done!

- Software Process Improvement (SPI) is a well-understood field, with many qualified practitioners
- There are many well-known best practices that have been shown to be effective (Six Sigma, CMM/CMMI, TQM, etc.)
- Some benefits can show up quickly
- Benefits improve with experience

## # The other news:

- Investment is required (process, tools, training)
- For maximum benefit, practices have to become ingrained in a company's culture
- Management commitment is the biggest predictor of success

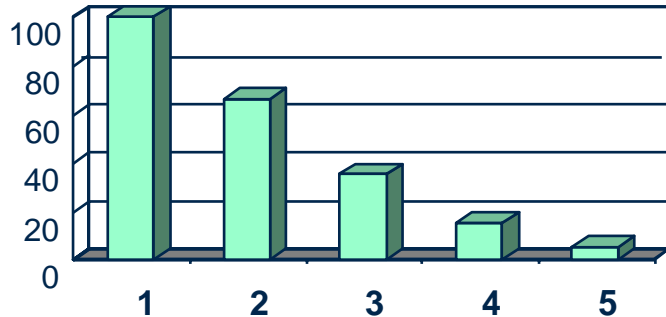
# SEI's Capability Maturity Model (CMM): Five Maturity Levels



# CMM Maturity Level affects quality and productivity!

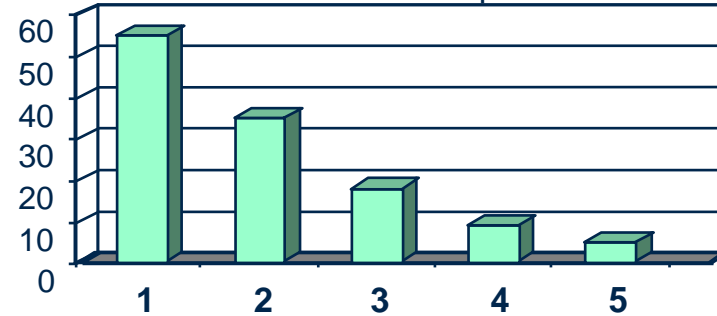
## Quality:

Relative Defects After Release



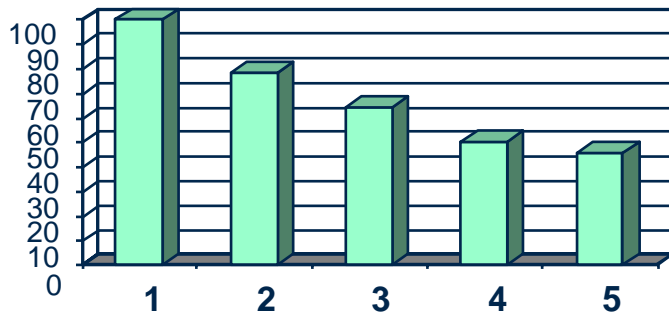
## Cost of Poor Quality:

Relative % of Development Effort



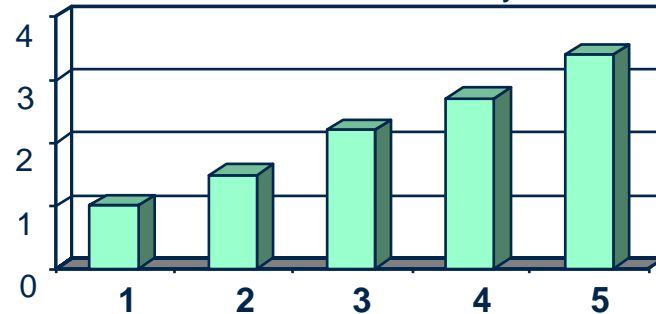
## Cycle Time:

Relative Cycle Time



## Productivity:

Relative Productivity



SEI CMM® Process Maturity Levels

SEI CMM® Process Maturity Levels

# Guidelines for SPI success

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- # Seek effective, sustainable improvements with measurable impact on your business
- # Tailor your process activities to your business
- # Use best practices for guidance, not a straitjacket
- # Introduce changes incrementally, with highest return first
- # Plan and invest for long-term, cultural impact:  
“it’s not *extra* work, it’s just *the* work”

# SPI caveats

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- # Don't "go for the badge" of a particular maturity level or certification (unless contractually required)
  - Focus and costs go to satisfying assessment requirements rather than real process improvement
  - Gains are small, hard to sustain
  
- # Don't underestimate the time and investment needed
  
- # Let recognition follow results!

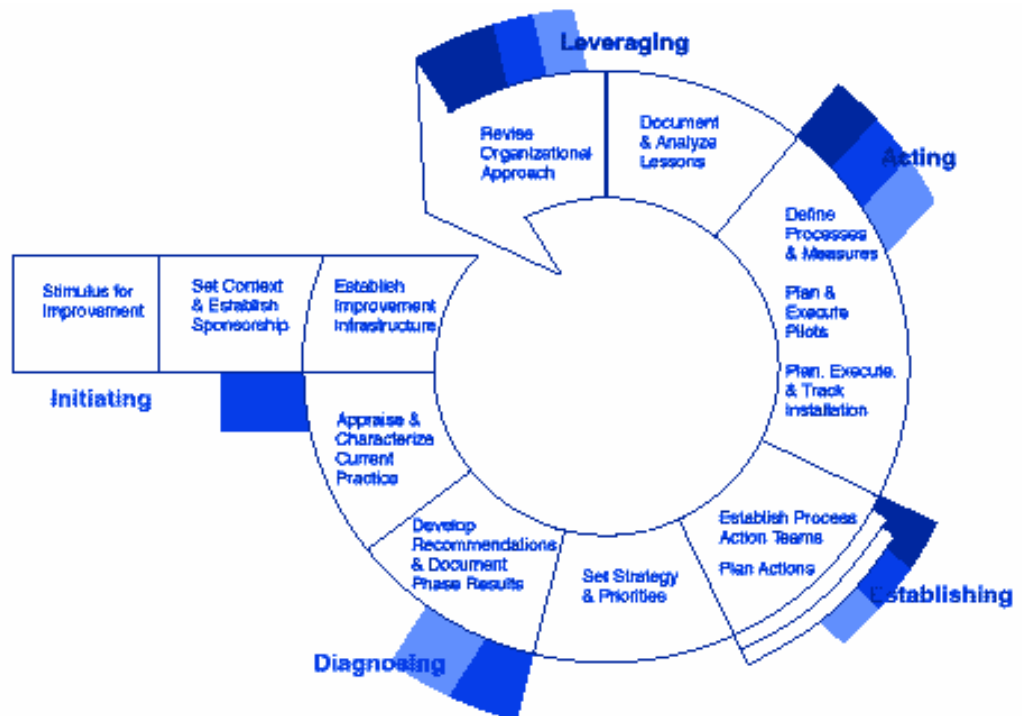
# Use SPI to reduce the cost of poor software quality

- # Define your overall business goals and success factors (financial, technical, market, etc.)
- # Perform an initial assessment of your current operations: design, test, release, support, etc.
- # Identify and prioritize the process areas and practices most crucial for your business success
- # Define a strategic and tactical elements for your quality improvement plan
- # Make the investments required and put the new practices into place in your business
- # Regularly monitor quality improvements; reassess, reprioritize, re-plan, and implement new practices

# Running an SPI program

## Example: SEI's IDEAL model

- Initiating
- Diagnosing
- Establishing
- Acting
- Leveraging



# BASYS Consulting can help you achieve these goals

- # BASYS has extensive, hands-on experience in software quality and process improvement in a variety of high-tech and business settings
- # BASYS focuses on sustainable, measurable improvements to the your business, not just on “getting the badge”
- # BASYS involves your complete business team, including management, marketing, hardware and software engineering, and operations
- # BASYS can tailor programs for any size organization: large and small companies, divisions, start-ups
- # BASYS supports all key process improvement and quality management activities: planning, improvement, and control

# Thanks for your attention!

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