# *Capability Maturity Model Integration®*

## CMMI® Strategic Plan

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# *Goals and Objectives*

- Make a big splash in a hurry
- Succeed in spite of
  - Overwhelmingly impossible odds
  - Highly chaotic organizations
  - Unrealistic resource constraints
  - Extremely debilitating politics
  - Limited team vision and talent
  - Seemingly impervious resistance
  - Fierce competition/individualism
- Create a long lasting legacy

# *Do’s and Don’ts*

## *Do’s*

- Create small, fast initiatives
- Design killer apps
- Build great websites
- Develop standard processes
- Deploy simplified methods
- Buy everything off-the-shelf
- Do much action, little talking

## *Don’ts*

- Play politics
- Form committees
- Create risky initiatives
- Use big bang methods
- Just meander along
- Reinvent the wheel
- Create a bureaucracy

# *Do’s*

# *Create Small, Fast Initiatives*

- Exploit power of time-boxed projects
- Create valuable products quickly
- Create portable enterprise standards
- Build highly visible monuments
- Make the most of limited resources
- Fly under radar of politics
- Make legacy before imminent departure

# *Examples*

- Software policies and procedures
- Websites with standard processes
- Semi-automated workflow websites
- Organizational metrics repositories
- Intuitive, easy-to-use tools
- Cost estimation/budgeting websites
- Self-service verification/validation

# *Design Killer Apps*

- Exploit power of productivity tools
- Use inexpensive and useful tools
- Find intuitive, easy-to-use tools
- Find tools people want to use
- Embed transparent process in tools
- Embed transparent metrics in tools
- Use tools, not training and process

# *Examples*

- Project planning wizards
- Project management wizards
- Document and deliverable wizards
- Seamless reliability modeling
- Seamless data and metrics capture
- UML, IDEF1X, and code generators
- Component and module reuse systems

# *Build Great Websites*

- Exploit power of web technologies
- Build great passive or active sites
- Use sites to propagate standards
- Use sites to collect metric data
- Use sites to engineer great process
- Explore navigable IDEF0-based sites
- Populate sites with great content

# *Examples*

- Software cost estimation website
- Software engineering website
- IEEE 12207/15288 website
- CMMI website
- Software CMM website
- Personal Software Process website
- Team Software Process website

# *Develop Standard Processes*

- Exploit power of standard processes
- Create an enterprise-level process
- Create system and software process
- Don't forget auxiliary disciplines
- Use professional process principles
- Build consistent/verifiable process
- Use industry standards if possible

# *Examples*

- IEEE 12207/15288 process
- CMMI process
- Software CMM process
- Personal Software Process
- Team Software Process
- Rational Unified Process
- Extreme Programming Process

# *Deploy Simplified Methods*

- Exploit power of simple methods
- Use intuitive, tool-driven methods
- Use point-n-click driven wizards
- Use database-driven expert systems
- Track project metrics transparently
- Use transparent statistical models
- Build tools to use without training

# *Examples*

- PSP/TSP workflow
- CMM/CMMI workflow
- IEEE 12207/15288 workflow
- Project management workflow
- Quality/reliability estimating tools
- RUP/UML workflow
- Relational database design workflow

# *Buy Everything Off-the-Shelf*

- Exploit power of off-the-shelf tools
- Look for low-cost, high-value COTS
- Use de facto standard office suites
- Collect suite of static analyzers
- Use simple programming environments
- Use simple graphical drawing tools
- Identify as much freeware as possible

# *Examples*

- Microsoft Office (not Framemaker)
- Microsoft Visio (ubiquitous in use)
- Relational database static analyzers
- Free object oriented static analyzers
- Free UML CASE Tools
- Free PSP workflow tools
- Free configuration management tools

# *Do Much Action, Little Talking*

- Exploit power of show-and-tell
- Build products, not committees
- Speak with accomplishments, not lips
- Build foundation standards for future
- Create usable and visible products
- Create products with high appeal
- Make the most with a limited staff

# *Examples*

- 👍 Organizational software standards
- 👍 Organizational policies/procedures
- 👍 Organizational software websites
- 👍 Organizational software databases
- 👍 Push technologies for products
- 👍 Newsletters for communication
- 👍 Automated software distribution

# *Don’ts*

# *Play Politics*

- Don't substitute politics for action
- Politics don't leave a lasting legacy
- Actions more important than words
- Engineers are good at ignoring words
- Everyone can see accomplishments
- Accomplishments silence the critics
- Politics more expensive than action

# *Examples*

- 👎 Agreeing to all methods, using none
- 👎 Management by walking around
- 👎 Creating posters, slogans and sayings
- 👎 Sending out occasional policies
- 👎 Having endless meetings/interviews
- 👎 Delegating initiatives to others
- 👎 Creating decrees rather than tools

# *Form Committees*

- Don't form committees, form projects
- Committees are forums for politics
- Committees have managers not doers
- Projects have doers not managers
- Projects result in products
- Engineers do work, not managers
- Committees lack technical expertise

# *Examples*

- Forming a hierarchy of committees
- Forming a hierarchy of SEPGs
- Forming splinter groups
- Forming committees to investigate
- Creating meetings, not products
- Having lots of meetings, no action
- Spinning wheels for many years

# *Create Risky Initiatives*

- Don't create large/complex projects
- Create small, low risk projects
- Don't create custom software
- Okay to create small custom websites
- Large projects are subject to failure
- Large projects subject to bad plans
- Large projects require large staffs

# *Examples*

- Creating resource intensive projects
- Large projects that hurt credibility
- Large projects that have poor quality
- Large projects that ignore COTS
- Building products versus buying
- Not completing a single project
- Not building a single product

# *Use Big Bang Methods*

- Don't try to proselytize the planet
- Proselytizing is a waste of time
- Choose a few low profile projects
- Don't train the building at outset
- Fewer successes better than failure
- Form new organizational structures
- Hard to adapt to old culture

# *Examples*

- 👎 Making 100s of projects use process
- 👎 Training thousands of people
- 👎 Making everyone accept one approach
- 👎 Using resources before completion
- 👎 Underestimating power of resistance
- 👎 Not optimizing use of resources
- 👎 Doing more than what is required

# *Just Meander Along*

- Don't meander along without a plan
- Wandering from week-to-week is bad
- Living without a schedule is futile
- No accomplishments without products
- Meandering causes much criticism
- Meandering leaves one vulnerable
- Meandering is a ticket to replacement

# *Examples*

- Form committees instead of projects
- Form committees without deliverables
- Form committees without schedules
- Form committees to talk things over
- Form committees to debate politics
- Form committees to show off
- Form committees to share blame

# *Reinvent the Wheel*

- Don't overestimate your abilities
- Very few project management experts
- Very few quality management experts
- Very few life cycle experts
- Most people can't manage projects
- Most people can't estimate quality
- Most people don't understand metrics

# *Examples*

- Building tools versus buying them
- Creating methods versus adopting them
- Ignoring creators of methodologies
- Ignoring project management experts
- Ignoring quality management experts
- Ignoring industry standards
- Creating custom methodologies

# *Create a Bureaucracy*

- Don't build a complex methodology
- Difficult methodologies won't be used
- Most people don't understand methods
- Most people won't use methods
- Hard to teach a difficult method
- Simple methods used without training
- Manual methods difficult to use

# *Examples*

- Software Capability Maturity Model
- Capability Maturity Model Integration
- MIL-STD-498
- ISO/IEEE 12207
- Rational Unified Process
- Extreme Programming
- ISO 9001:2000

# *Past vs. Future of SPI Methods*

# *Past vs. Future*

❶ Slow → Instantaneous

❷ Enigmatic → Simplistic

❸ Expensive → Free

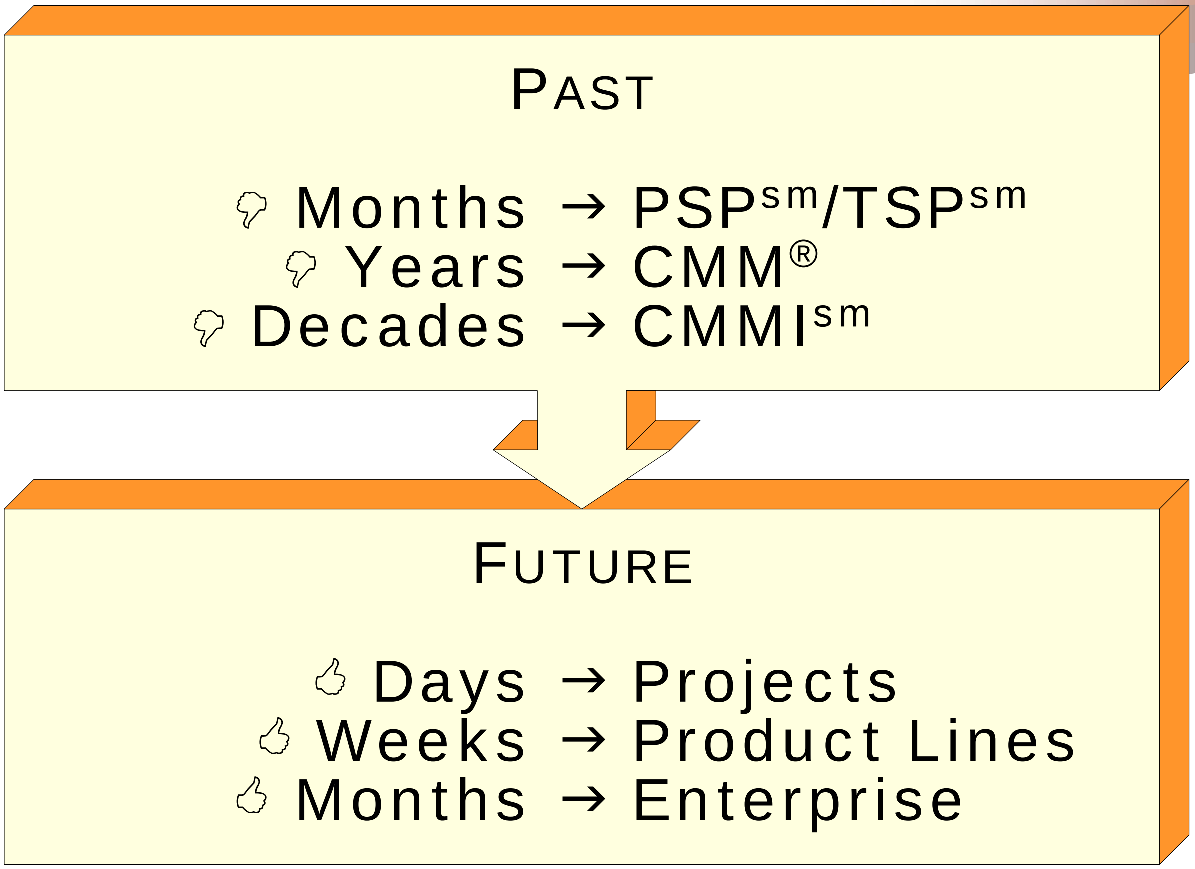
❹ Manual → Automated

❺ Distracting → Transparent

❻ Political → Transcendent

❼ Proprietary → Freeware

# ❶ *Slow vs. Instantaneous*



PAST

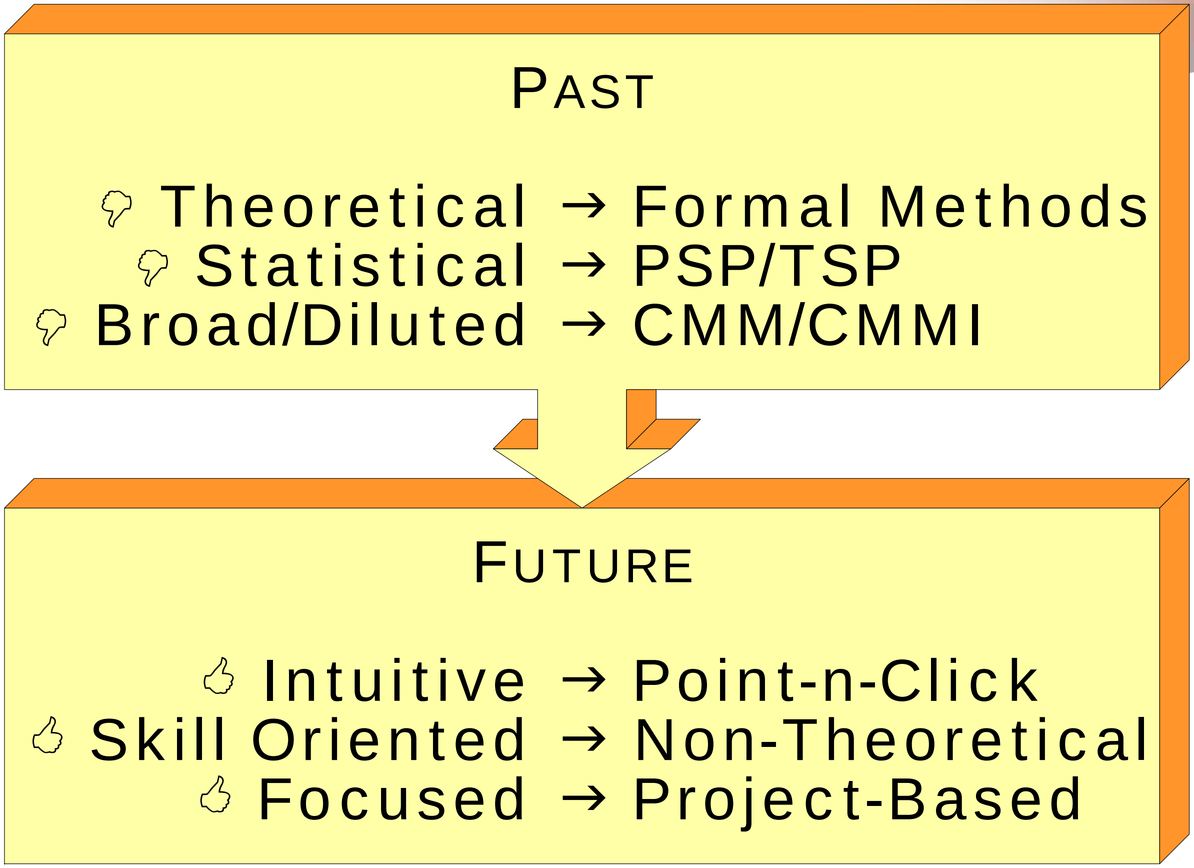
👎 Months → PSP$^{sm}$/TSP$^{sm}$
👎 Years → CMM®
👎 Decades → CMMI$^{sm}$

FUTURE

👍 Days → Projects
👍 Weeks → Product Lines
👍 Months → Enterprise

$^{sm}$ PSP, TSP, and CMMI are service marks of Carnegie Mellon University.
® Capability Maturity Model and CMM are registered in the U.S. Patent and Trademark Office.

# ❷ *Enigmatic vs. Simplistic*



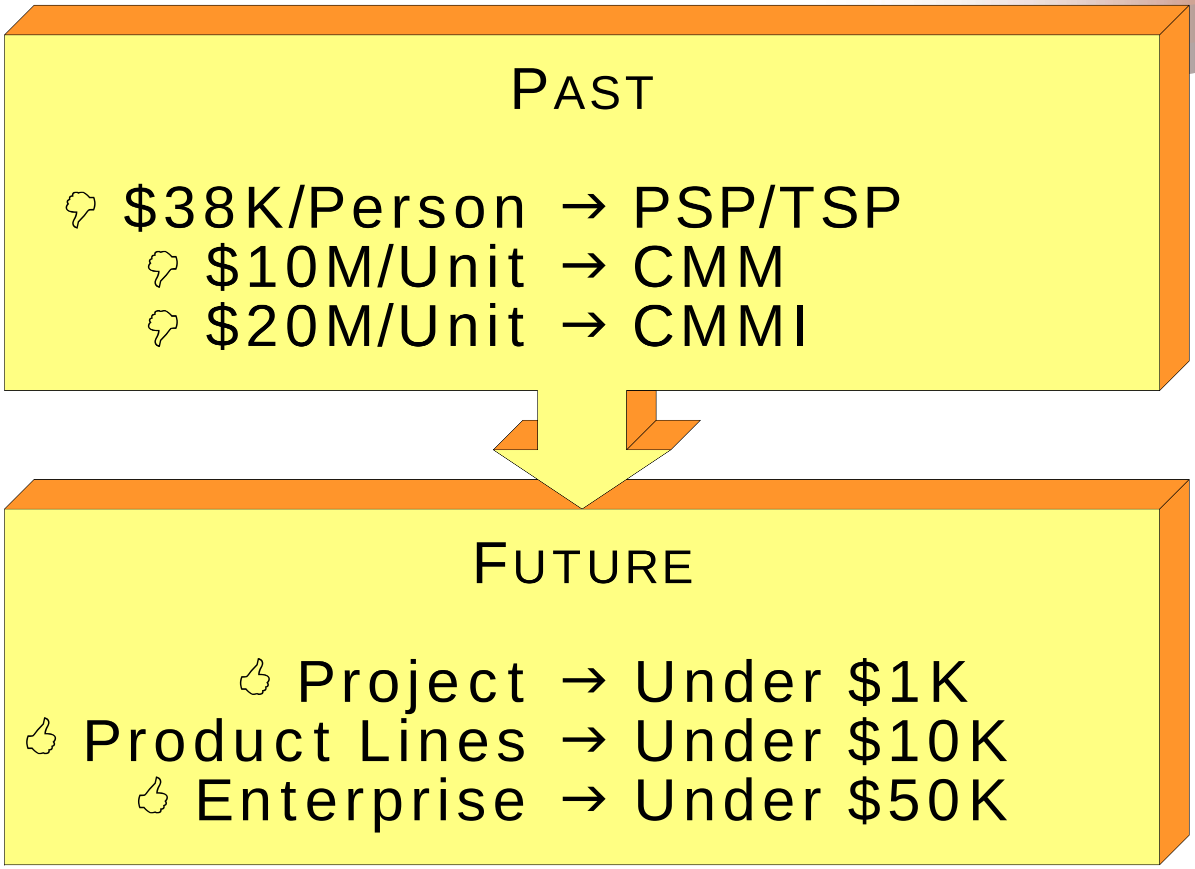
PAST

👎 Theoretical → Formal Methods
👎 Statistical → PSP/TSP
👎 Broad/Diluted → CMM/CMMI

FUTURE

👍 Intuitive → Point-n-Click
👍 Skill Oriented → Non-Theoretical
👍 Focused → Project-Based

# ❸ *Expensive vs. Free*



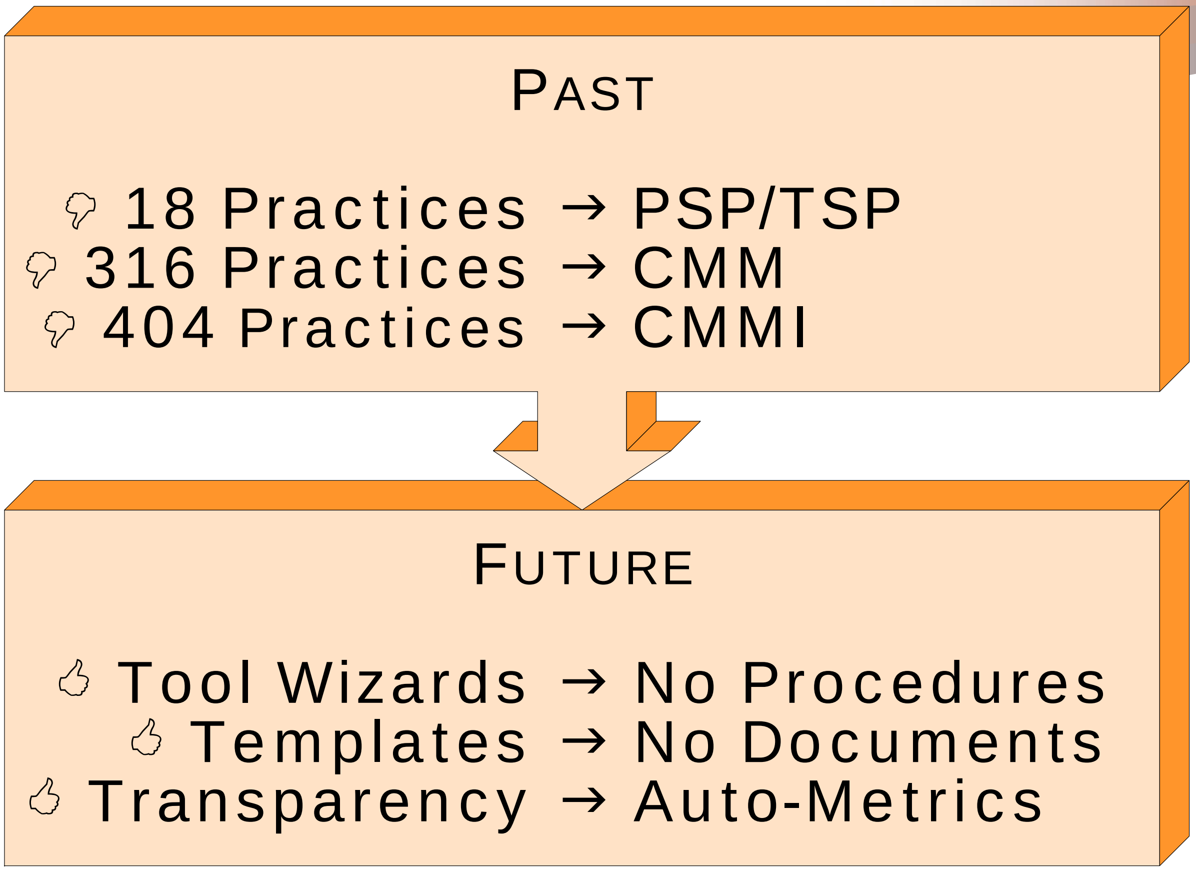
PAST

- 👎 $38K/Person → PSP/TSP
- 👎 $10M/Unit → CMM
- 👎 $20M/Unit → CMMI

FUTURE

- 👍 Project → Under $1K
- 👍 Product Lines → Under $10K
- 👍 Enterprise → Under $50K

# ❹ *Manual vs. Automated*



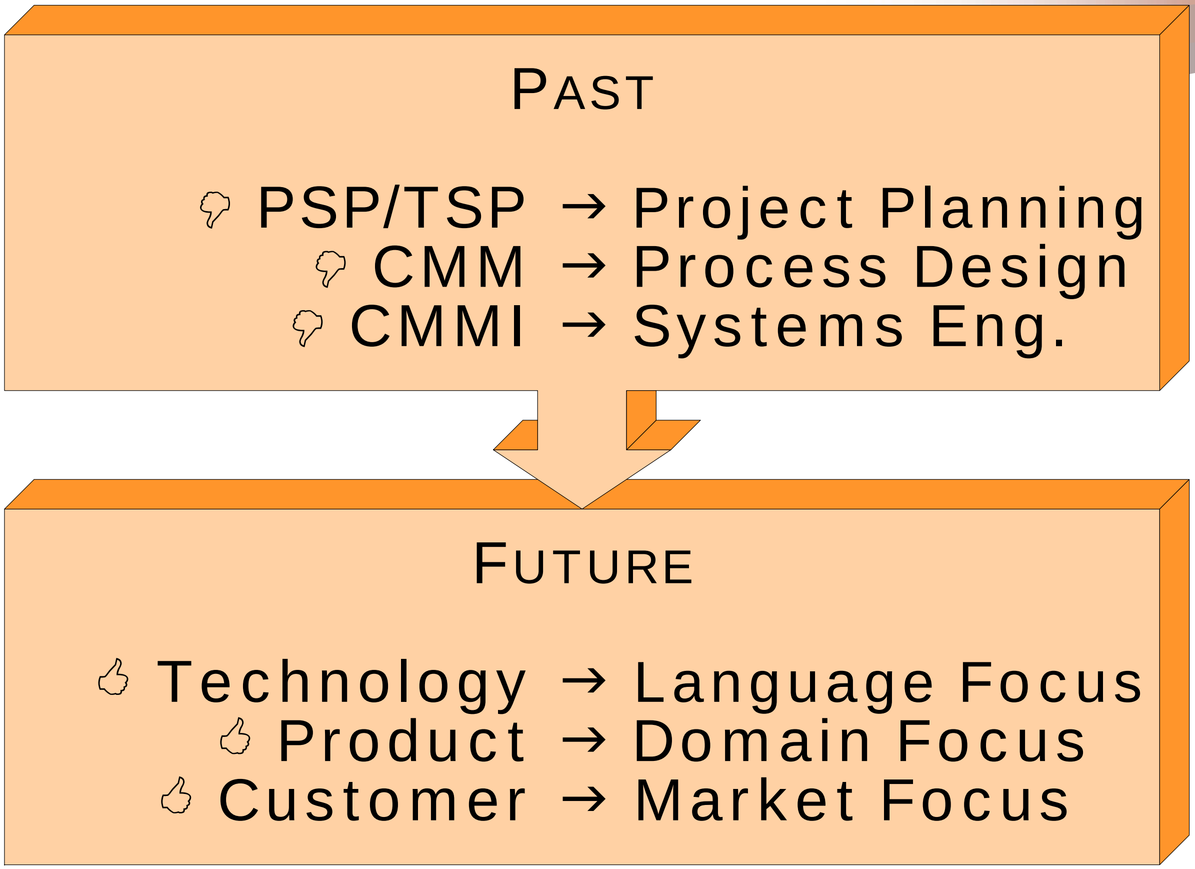
PAST

- 👎 18 Practices → PSP/TSP
- 👎 316 Practices → CMM
- 👎 404 Practices → CMMI

FUTURE

- 👍 Tool Wizards → No Procedures
- 👍 Templates → No Documents
- 👍 Transparency → Auto-Metrics

# ❺ *Distracting vs. Transparent*



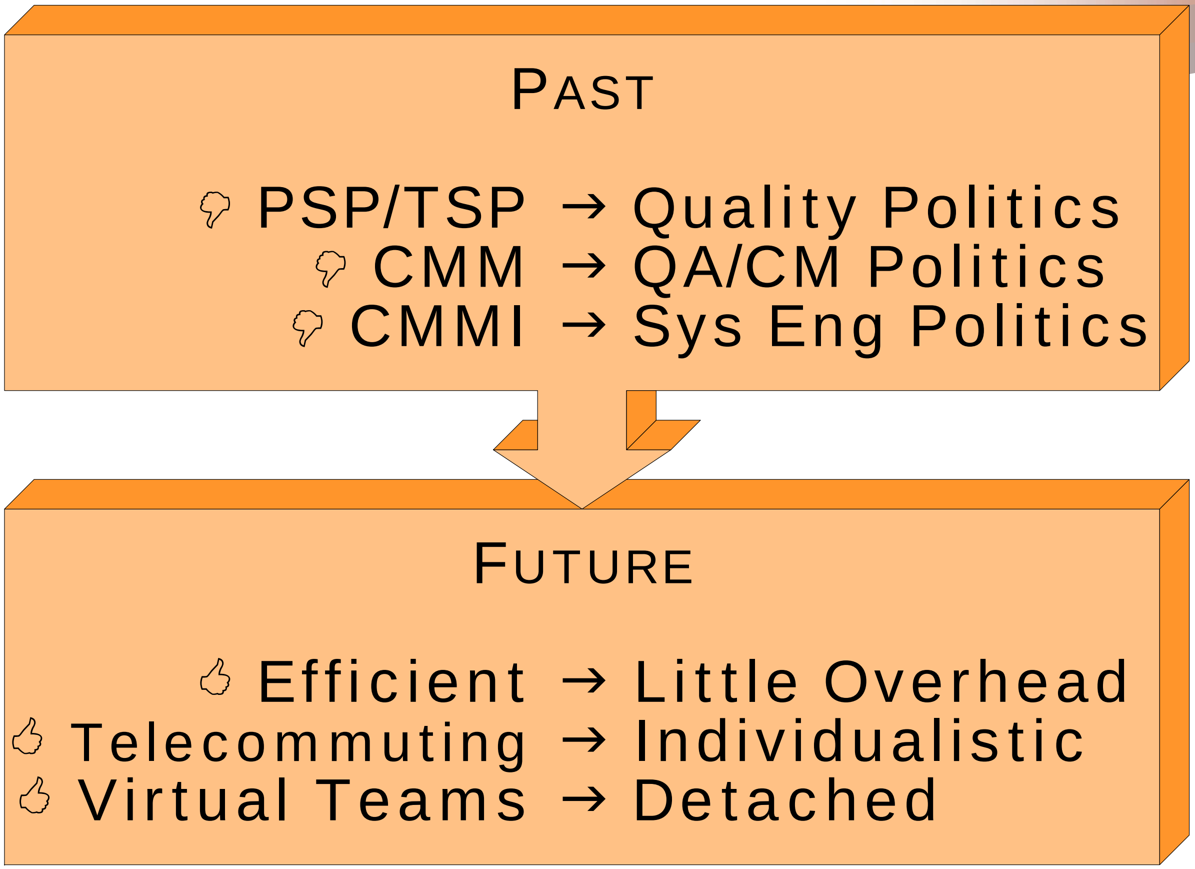
PAST

👎 PSP/TSP → Project Planning
👎 CMM → Process Design
👎 CMMI → Systems Eng.

FUTURE

👍 Technology → Language Focus
👍 Product → Domain Focus
👍 Customer → Market Focus

# ❻ *Political vs. Transcendent*



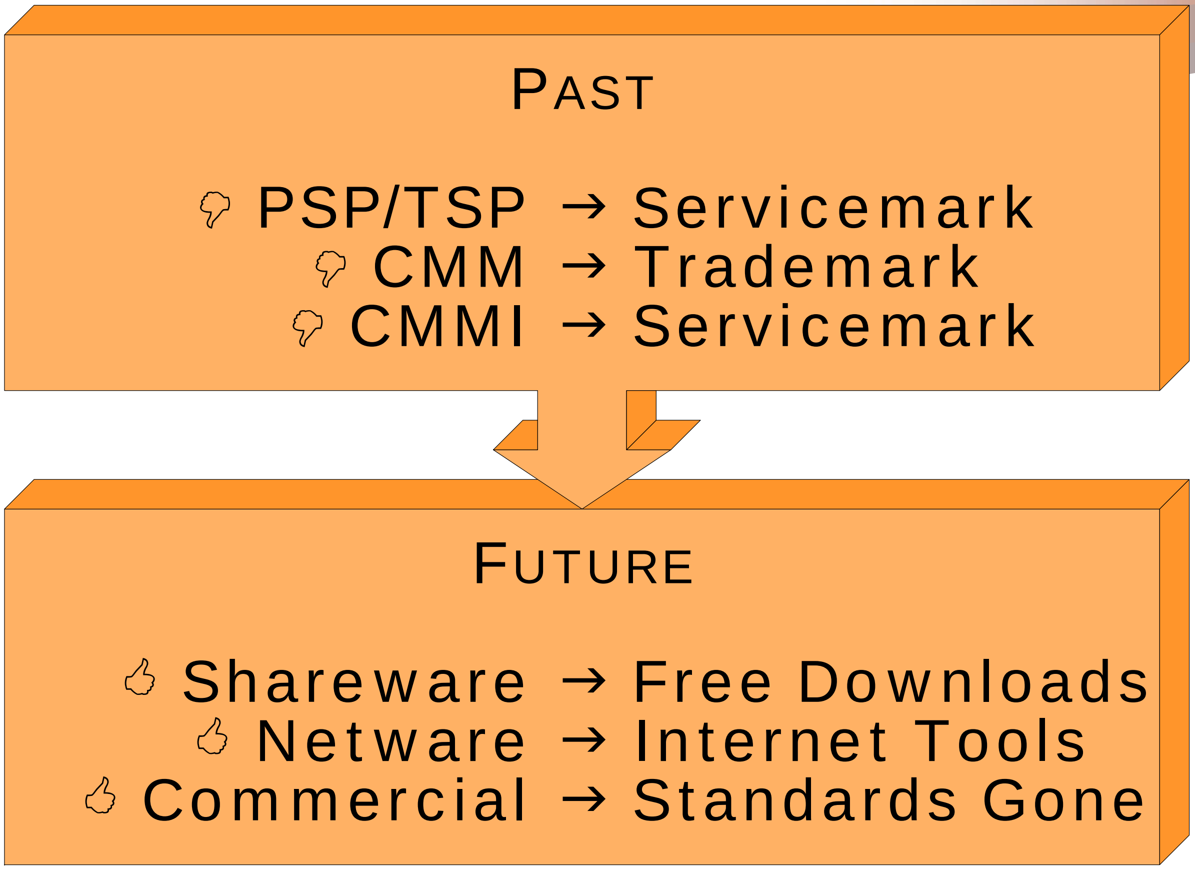
PAST

- 👎 PSP/TSP → Quality Politics
- 👎 CMM → QA/CM Politics
- 👎 CMMI → Sys Eng Politics

FUTURE

- 👍 Efficient → Little Overhead
- 👍 Telecommuting → Individualistic
- 👍 Virtual Teams → Detached

# ❼ *Proprietary vs. Freeware*



PAST

👎 PSP/TSP → Servicemark
👎 CMM → Trademark
👎 CMMI → Servicemark

FUTURE

👍 Shareware → Free Downloads
👍 Netware → Internet Tools
👍 Commercial → Standards Gone