

The Benefits of CMMI

Case Study of a Small Business
CMMI Level 5 Organization

Executive Panel

CMMI 9th Technology and User Group Conference

November 17, 2009

Denver

Software Process Achievement Award

➤ Sponsors

- IEEE Computer Society
- Software Engineering Institute (SEI)

➤ Winners

- NASA Goddard Space Flight Center (94)
- Raytheon (95)
- Hughes Aircraft (97)
- **Advanced Information Services Inc. (99)**
- Oklahoma City Air Logistics Center (99)
- Wipro (03)
- IBM Australia (04)
- Productora de Software S.A. (06)



“for exceptional work in applying and tailoring the principles of continuous process improvement to enhance quality, productivity, and customer satisfaction, as well as institutionalizing process improvement in the development of software and the provision of consulting, training, and infrastructure-support services.”

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AIS CMM/CMMI Assessment History

Date	Levels Assessed	Levels Satisfied	Assessor
April 1996	SW-CMM Levels 2 & 3	1	Jeannie Kitson
April 1999	SW-CMM Levels 2 to 4	3	Jeannie Kitson
Nov. 2000	SW-CMM Levels 2 to 3	3	Jeannie Kitson
Nov. 2002	SW-CMM Levels 2 to 4	3	Inigo Garro
Nov. 2004	SW-CMM Levels 2 to 4	4	Gloria Leman
Dec. 2005	SW-CMM Levels 2 to 5	5	Gloria Leman
Dec. 2007	CMMI Maturity Levels 2 to 5	5	Ed Weller

SEI CMMI Maturity Level 5

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The AIS Software Development Organization
(Federal and Commercial)

has successfully completed a

SCAMPISM A

(Standard CMMI[®] Appraisal Method for Process Improvement)
and satisfied the goal requirements to achieve a rating of

**CMMI-DEV v1.2
MATURITY LEVEL 5**

December 14, 2007

as listed on the Software Engineering Institute PARS webpage



Edward F. Weller

SEI-Certified SCAMPI High Maturity Lead Appraiser 0000096-00

* CMMI is registered in the U.S. Patent & Trademark Office by Carnegie Mellon University
SM SCAMPI is a service mark of Carnegie Mellon University

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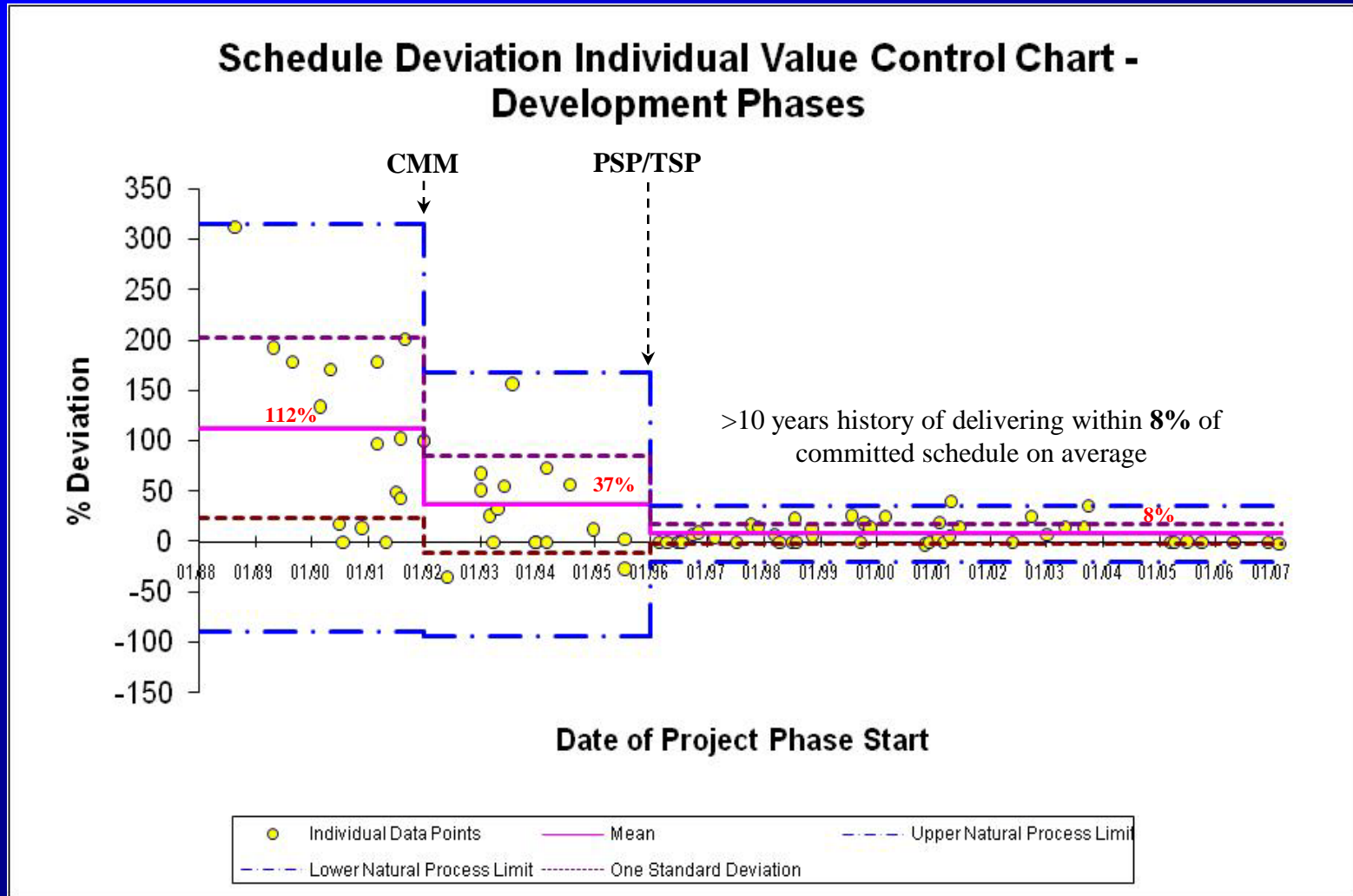
SCAMPI A – Final Findings

AIS Global Strengths

- TSP coaches provide continuous mentoring for project team members
- Process focus at all levels in the organization
- Open communication
- Self-managed team structure and roles
- Individuals with:
 - Strong quality focus
 - Commitment to customer and organization
 - Sense of ownership
- Opportunity for involvement with multiple groups within the organization
- Empowered to make decisions that affect the organization

CMM/TSP Benefits

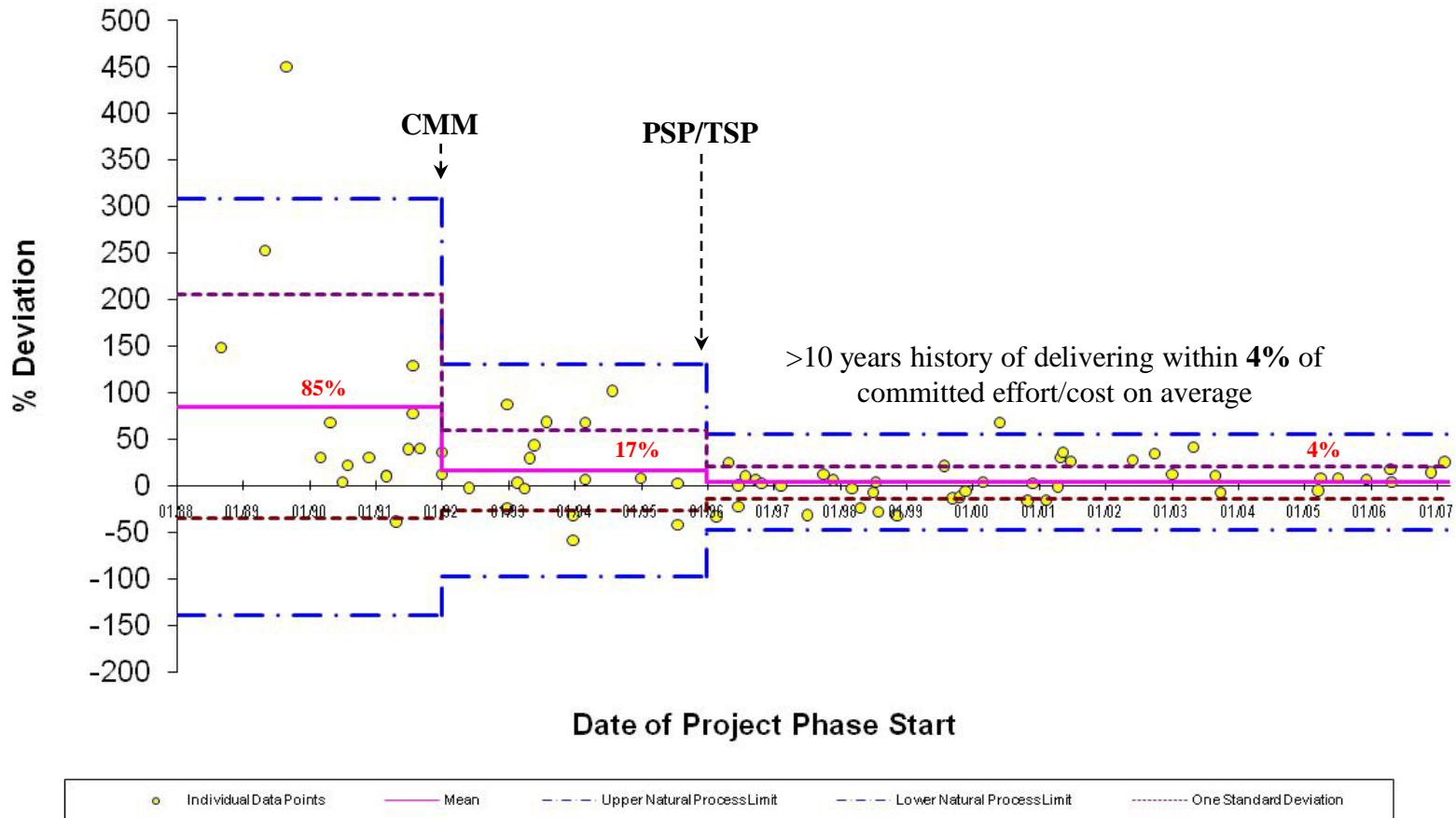
Schedule Performance



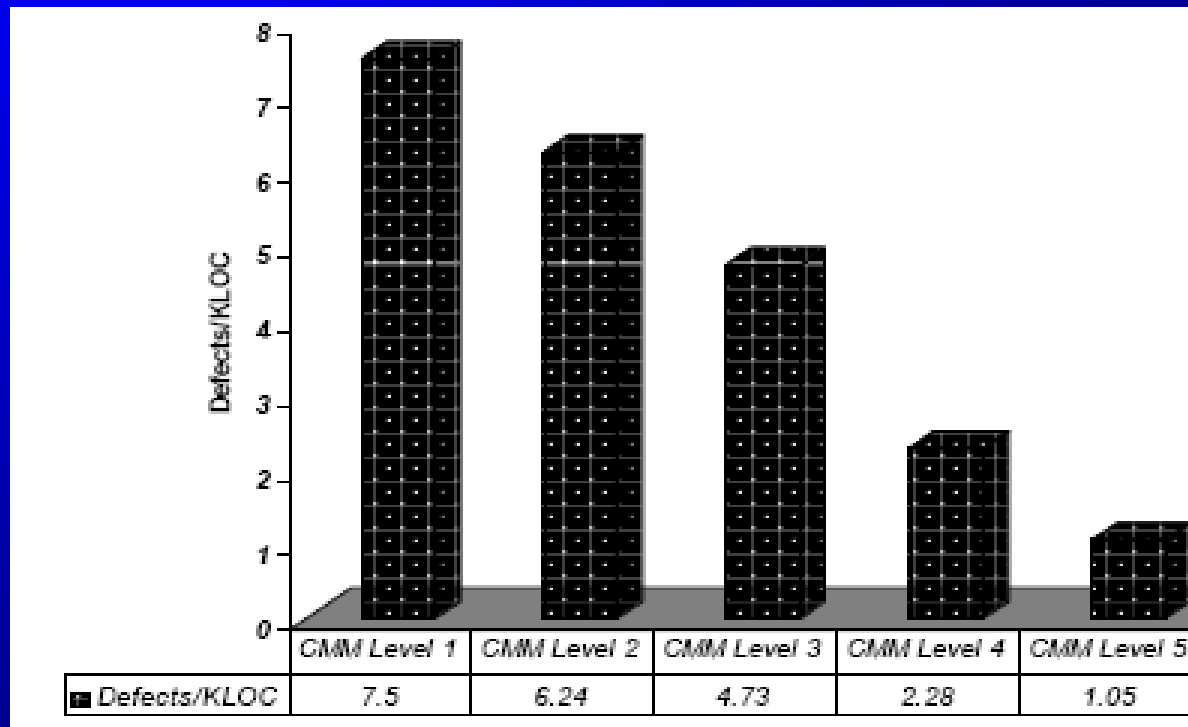
CMM/TSP Benefits

Effort/Cost Performance

Effort Deviation Individual Value Control Chart - Development Phases



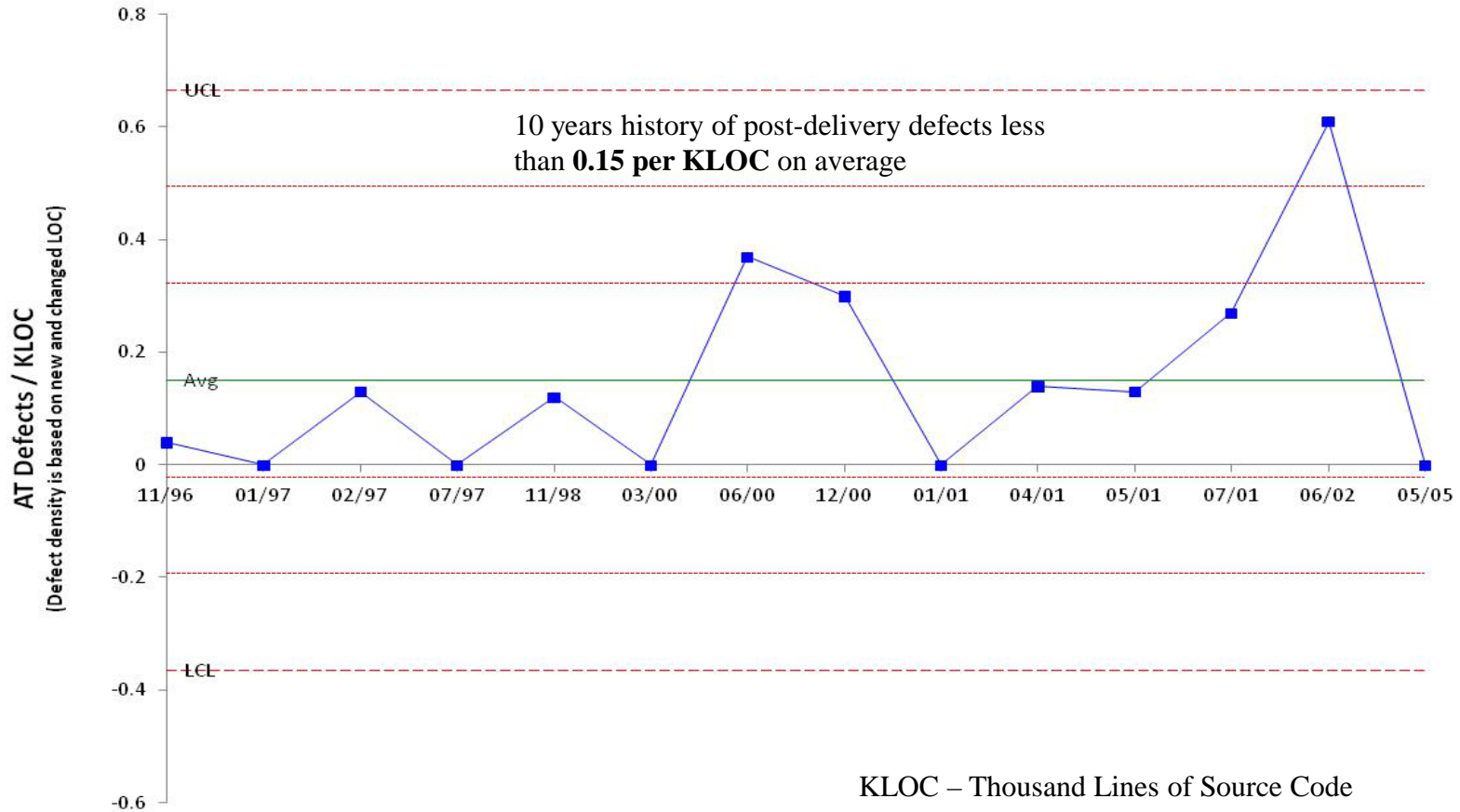
CMMI Quality Results



CMM/TSP Benefits

Quality Performance

User Acceptance Test Defects Per KLOC - New Development Projects
(Avg=0.15, UCL=0.66)



What If?

What If It Takes A Billion Lines Of Code Per Year To Modernize The U.S. Government In Five Years?

U.S. Government Modernization

Maintenance Cost - 1

- Assume most federal IT contractors are CMMI L2, L3
- Assume average 5 defects/KLOC in delivered product
- Government will find 5 million defects per year in acceptance test and software use
- Assume average 40 hours to find and fix each defect
- Acceptance test and rework cost over five years - \$100 billion

U.S. Government Modernization Maintenance Cost - 2

- Assume most federal IT contractors are CMMI L5
- Assume average 1 defect/KLOC in delivered product
- Government will find 1 million defects per year in acceptance test and software use
- Assume average 40 hours to find and fix each defect
- Acceptance test and rework cost over five years - \$20 billion
- \$80 billion cost avoidance in five years

What If The Contractors ? (1)

Bid firm fixed price development after requirements phase

Guarantee less than 8% deviation in committed schedule

Guarantee reduction in government's acceptance testing time by orders of magnitude

What If The Contractors ? (2)

Guarantee delivered product defect density of less than 0.3 defects per KLOC

Offer life time warranty on defects

AIS offers all of the above

Benefits of CMMI

- Proven organization capability to deliver nearly defect free products on predictable cost/schedule
- Joy in work

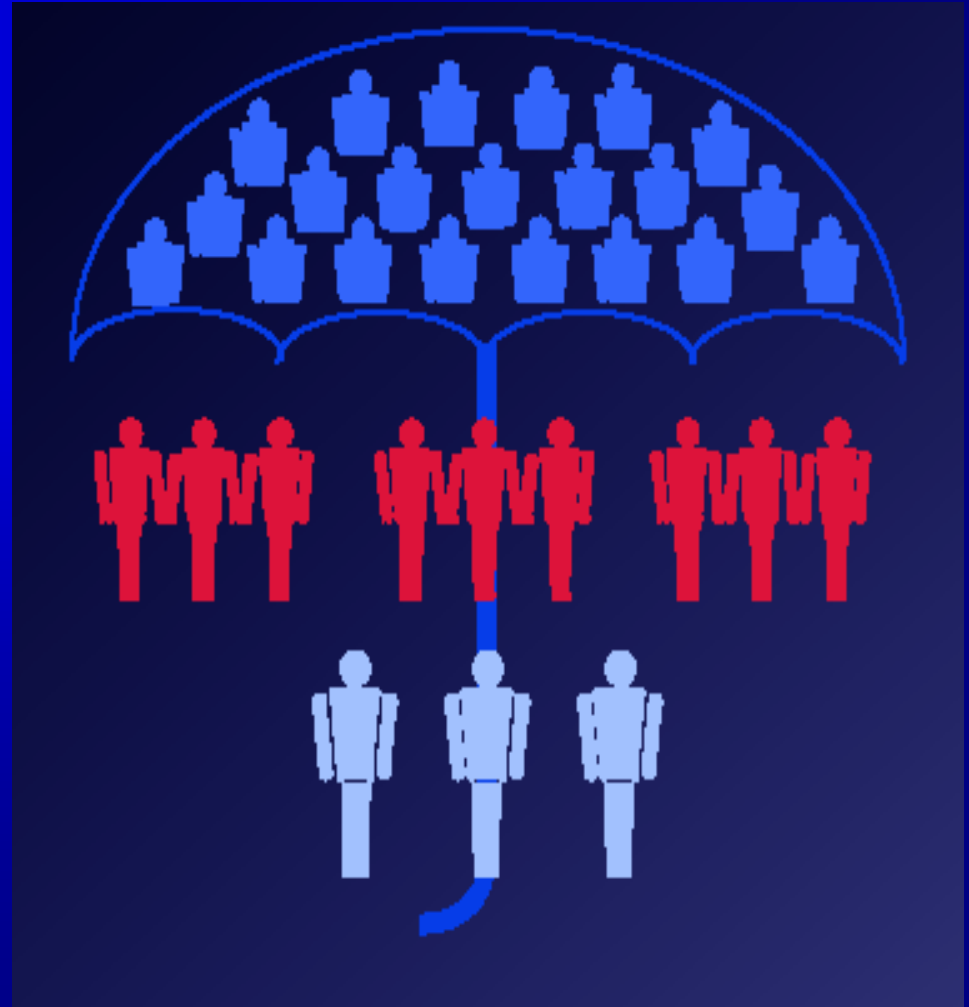
Transforming The World Of Software

Models Of Excellence

**CMMI – Builds
organizational capability**

**TSP – Builds
quality products
on cost and schedule**

**PSP – Builds
individual skill
and discipline**



Source: Software Engineering Institute

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What does
“FUN ON THE JOB”
Mean to you?

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