20 Points for Quality and Process Improvement

SEPG 2007
Conference
March 2007
Austin, Texas

Tim Kasse

Kasse Initiatives LLC
+1 – 972 - 987 - 7706 USA
+49 (0) 7721 - 407 - 851 Europe
+65 6430 6769 Singapore

Welcome

WelKom

Huan Yín

Bienvenido

Bienvenue

Wilkommen

ΚΑΛΟΣ ΟΡΙΣΑΤΕ

Bienvenuto

Välkommen

Tervetuloa

Witamy

ברוכים הבאים

Kasse's 20 Points for Quality and Process Improvement

Acknowledgement

- Tim Kasse would like to acknowledge the influence and inspiration of Deming's 14 Points and Crosby's 14 Points as well as the works of the other individuals who cared for quality on a global basis even when their own companies and sometimes countries did not support them

Kasse's 20 Points for Quality and Process Improvement

- 1. The commitment to Quality starts with Top Management
- 2. Quality Goals and Business Objectives are Partners not Adversaries
- 3. Quality is satisfying the requirements AND showing that the product or service will work in the intended environment by the intended users
- 4. Everyone needs training

Kasse's 20 Points for Quality and Process Improvement - 2

- 5. Train more when the budget is short and the times are tough – when the good times come back, your workforce will be updated and ready for the challenges
- 6. Make it personal
- 7. Audit to regain control not punish
- 8. Make use of "controlled" reviews
- 9. Build quality in – stop trying to test it in

Kasse's 20 Points for Quality and Process Improvement - 3

- 10. Know the cost of rework
- 11. Calculate the "True" Cost of Outsourcing
- 12. Continuous Improvement – Never be too Happy
- 13. Award the coaches and mentors – Don't just add more work to their already over filled plate - Technology Transition
- 14. Measure to support your business objectives – GQM / BSC

Kasse's 20 Points for Quality and Process Improvement - 4

- 15. Look for alternative solutions that help to achieve a balance among cost, schedule, performance, and quality
- 16. Process Improvement requires the cooperation and coordination of all levels of management and practitioners
- 17. Teach, Preach, Manage, & Reward Cooperation
- 18. Practice process improvement to keep the good things the company already has

Kasse's 20 Points for Quality and Process Improvement - 5

- 19. Process Improvement is not just about improving a company's technical processes, it is also about improving the company's culture and the people's processes
- 20. Process enables a company to do the Right Business

1. The Commitment to Quality Starts With Top Management

- **Total Quality Management Axiom**
  - Shewhart (Control Charts – Plan-Do-Check-Act)
  - Deming (Deming's 14 Points) – Japan)
  - Juran (Pareto Principle - Performance through Quality Leadership – Voice of the Customer)
  - Crosby (ITT – Basis for CMM 5-Level Model)
  - Feigenbaum (GE – Total Quality Control)
  - Sarasohn & Protzman (Taught Statistical Quality Control to Japanese manufacturers)
  - Ishikawa (Fish Bone Diagrams)
  - Taguchi (Loss Function)

1. The Commitment to Quality Starts With Top Management - 2

- **Management owns the process**
  - People work within the system
  - Management provides the vision and business objectives
  - Management authorizes the necessary resources and training
  - Management sets the policies
  - Management reviews the processes and resulting product quality
  - A focus on quality means a continuing focus on process improvement
  - Cascading management support starting with top management is necessary to realize lasting process improvement and higher product quality

2. Quality Goals and Business Objectives are Partners not Adversaries

- To succeed in business does not mean a company has to abandon quality
- Measurable quality is the one true distinguishing factor that allows a company to charge higher prices for its products and services and still stay in business

3. Quality is satisfying the requirements AND ...

- Quality is satisfying the requirements AND showing that the product or service will work in the intended environment by the intended users
  - The delivered product or product component must satisfy the requirements and approved requirements change requests and nothing more
  - The delivered product or product component must work in the operating environment for which it was designed by the end users it was designed for

4. Everyone needs training

- All levels of Management and practitioners need to be trained
  - Gain skills to handle today's job demands
  - Update or re-polish old skills
  - Future skills need to be justified and the learning process started NOW

5. Train more when the budget is short and the times are tough

- Train more when the budget is short and the times are tough –
  - When the good times come back, your workforce will be updated and ready for the challenges

6. Make it personal

- Try new ideas and techniques out to show their worth in the situation you find yourself in
- Don’t get caught up in blaming everyone else for your poor performance or your product’s lack of quality
- Collect your own data and compare against industry data
- Build your own personal database
- Share your statistics with your colleagues

7. Audit to regain control not punish

- A quality audit is an independent evaluation of products and processes to certify adherence to approved standards, guidelines, specifications, and procedures.
- A management tool for determining the effectiveness of a Quality System
- A tool to make visible problems in process performance or product development
- Should be positive and constructive process
- Helps Project Management to regain control or to ensure it is maintained

8. Make use of "controlled" reviews

- Peer reviews are a reliable way of measuring the quality of the work that has been performed
- Peer reviews are the only technique available to "test" the life-cycle work products in the early phases of development
- Reduces testing cost and time
- Reduces total system maintenance cost dramatically (as much as 10 to 1 according to recent statistics)

9. Build quality in – stop trying to test it in

- Testing is the oldest of the three basic ways of achieving quality
- Because testing depends on a product component having been built, it occurs after that product component has been specified, designed, and built
- Testing is a critical step in achieving quality, but it is not enough --> a product component that is not maintainable will not improve merely as a result of more testing
- Quality Assurance is NOT Testing!

10. Know the cost of rework

- All of these steps contribute to the cost of rework
  - Analyzing the defect or error report
  - Determining the module or product component that contains the defect
  - Checking the module “out” from the proper baseline
  - Determining how to fix the problem without causing negative side-effects or introducing additional defects
  - Fixing the defect
  - Conducting a Peer Review

10. Know the cost of rework - 2

- Performing Unit Testing on the module or product component
- Checking the module “in” with proper change history and version updating
- Performing “regression testing”
- Placing the updated module or product component into the system
- The time spent by anyone involved in the process described is added to derive the “cost of rework”

11. Calculate the "True" Cost of Outsourcing

- The true cost of outsourcing must take many factors into consideration. Here are a few of the main ones:
  - Determining the requirements to a low enough level to be able to create the RFP to let the potential Supplier know what is expected of it
  - Describing the reason for the system – what problem is it trying to solve
  - Listing the system constraints
  - Developing a WBS to a low enough level to be able to create the SOW for the RFP
  - Conducting project planning to a low enough level to understand the supplier's response

11. Calculate the "True" Cost of Outsourcing - 2

- Developing the supplier selection criteria and RFP
- Conducting process audits on the Suppliers technical, managerial, and quality processes
- Developing the Supplier Agreement
- Conducting a Kick-off or Orientation Meeting
- Monitoring and Controlling the progress and performance of the Supplier
- Adding in the rework costs incurred by the Supplier when defects are found during Acceptance Testing by the Buyer

12. Continuous Improvement – Never be too Happy

- Enjoy the successes of today and yesterday but don't rely on them for tomorrow
- Constantly challenge your thinking and your ideas based on the information, experience, and environment you exist in today
- Constantly try to improve even if that improvement appears to be very small to others around you
  - A decade of small improvements add up to large differences for those who have not kept up

13. Award the coaches and mentors

- Award the coaches and mentors – Don't just add more work to their already over filled plate - Technology Transition
  - Experienced personnel who are viewed as leaders in their companies are asked to pass along their knowledge with no time or compensation offered
  - Those who can mentor and coach others to greater productivity should be rewarded

14. Measure to support your business objectives – GQM / BSC

- Techniques like Goal-Question-Metric paradigm and Balanced Scorecard can help an organization to measure its accomplishments against its business objectives

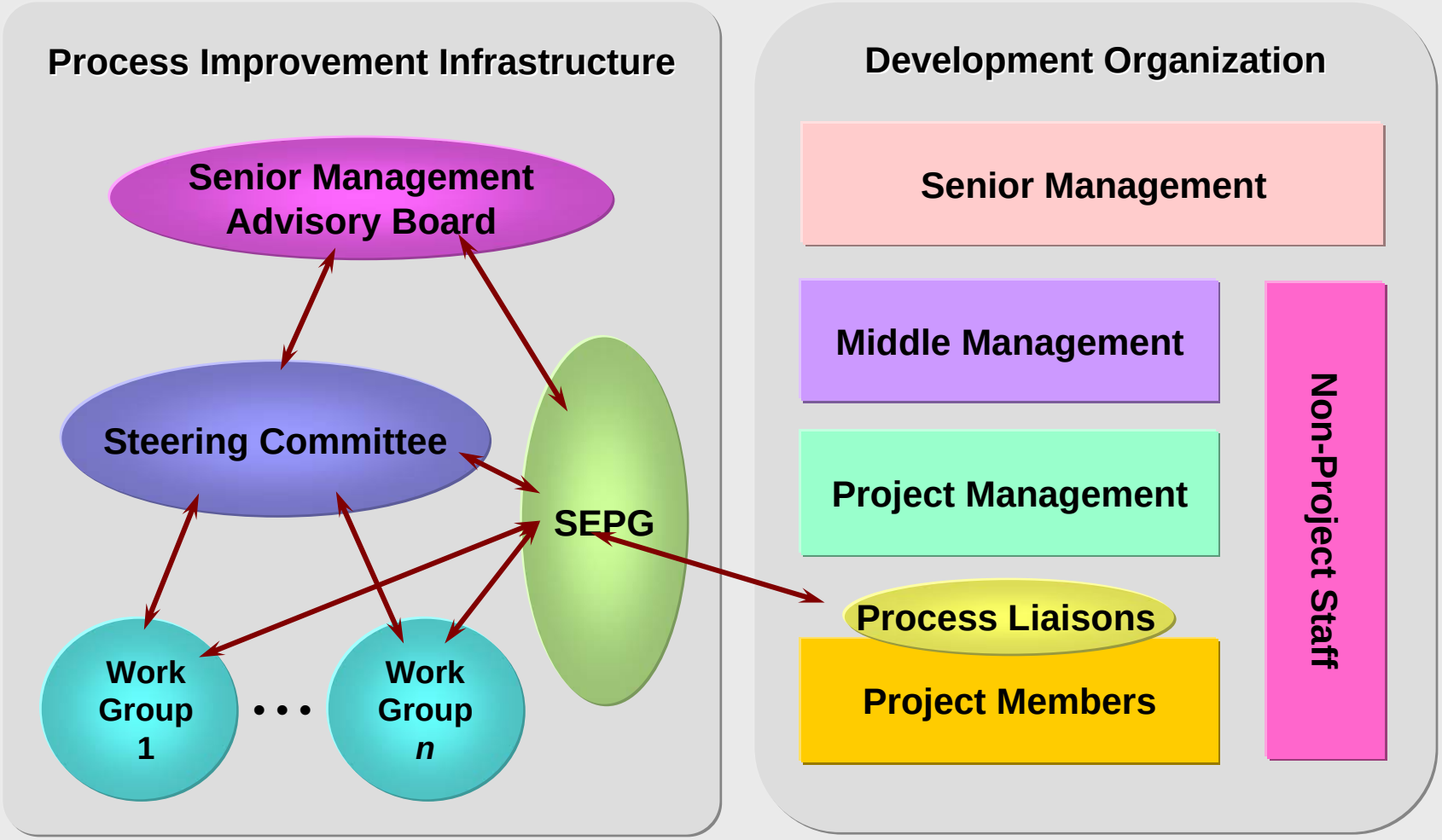
15. Look for alternative solutions

- Look for alternative solutions that help to achieve a balance among cost, schedule, performance, and quality
  - Companies and projects focus on getting the functionality developed regardless of its affect on the quadruple constraints
    - Budgets are overrun
    - Schedules are missed
    - Quality suffers
    - Customers are not satisfied

16. Process Improvement requires the cooperation and coordination....

- Process Improvement requires the cooperation and coordination of all levels of management and practitioners
  - It is not the job of the Quality Group or the Engineering Process Group to make process improvement and quality happen

Sample Improvement Infrastructure



17. Teach, Preach, Manage, & Reward Cooperation

- Today's complex products requires highly skilled technicians and managers working together in an Integrated Teaming environment
- While individual excellence is still needed and can be rewarded, it should be offered to support the team and not be detrimental to it
- Integrated Teams that think like mini-versions of the organization can bring about significant gains and profit to the company

18. Practice process improvement to keep the good things the company already has

- Organizations that have had commercial success frequently question why they should have to care about quality and process improvement The down escalator example
  - If you have no means to keep and improve the good things you have accomplished, you will stay still while your competitors will race past
  - Eventually you will slide backwards

19. Process Improvement is not just about improving a company's technical processes,

- Process Improvement is not just about improving a company's technical processes, it is also about improving the company's culture and the people's processes
- People should be considered as critical corporate assets
- Process improvement initiatives should include the expectations for change management as well as technical changes

20. Process enables a company to do the Right Business

- Process and Business
  - Process defines how a business does business
    - Software Engineering processes
    - Hardware Engineering processes
    - Systems Engineering processes
    - Manufacturing processes
    - Financial processes
    - Human Resources processes
    - Legal processes
    - ……
  - Process helps to establish the business culture and then sets guidelines and expectations

20. Process enables a company to do the Right Business - 2

- There are no shortcuts – there are no other alternative methods that a business can adopt that embraces a “cradle to grave” philosophy to ensure quality and profitability with ***control*** every step of the way
- Since there are inherent costs to implementing process, Senior Management must demonstrate their belief in it through their communications, daily decision making, and financial commitment.
- Senior Management’s resolve must not waiver when deadlines beg for shortcuts to get the product out the door
- Process is the fastest-lowest cost path to get there and know if you are there!

Summary

- Quality and Process Improvement are needed today, more than ever to assist organizations in developing high quality products and services, to achieve a Return on Investment and stay in business

Tim Kasse

- CEO and Principal Consultant of Kasse Initiatives
- Visiting Scientist - Software Engineering Institute
- Visiting Fellow - Institute for Systems Science / National University of Singapore
- Author of Action Focused Assessment for Software Process Improvement
- Author of Practical Insight Into CMMI

Kasse Initiatives Contact Information

United States Address

Tim Kasse

CEO & Principal Consultant

Kasse Initiatives LLC

PMB 293

1900 Preston Road # 267

Plano, Texas 75093

United States of America

+1 972 – 987 – 7606 Business

+1 972 – 987 – 7607 FAX

Europe Address

Tim Kasse

CEO & Principal Consultant

Niedereschacher Strasse 6

78052 Villingen-Schwenningen

Germany

49(0)7721- 407 851 Business

49(0)7721- 407 852 Fax

tim.kasse@kasseinitiatives.com

www.kasseinitiatives.com

Kasse Initiatives Contact Information

Pamelia S. Rost
Executive VP
Business Development

Kasse Initiatives LLC

PMB 293

1900 Preston Road # 267

Plano, Texas 75093

United States of America

+1 972 – 987 – 9878 Business

+1 972 – 987 – 7607 FAX

pamelia.rost@kasseinitiatives.com

www.kasseinitiatives.com

Kasse Initiatives Contact Information

Ingo Tegtmeier

Operations Manager

Kasse Initiatives LLC

Niedereschacher Strasse 6

78052 Villingen-Schwenningen

Germany

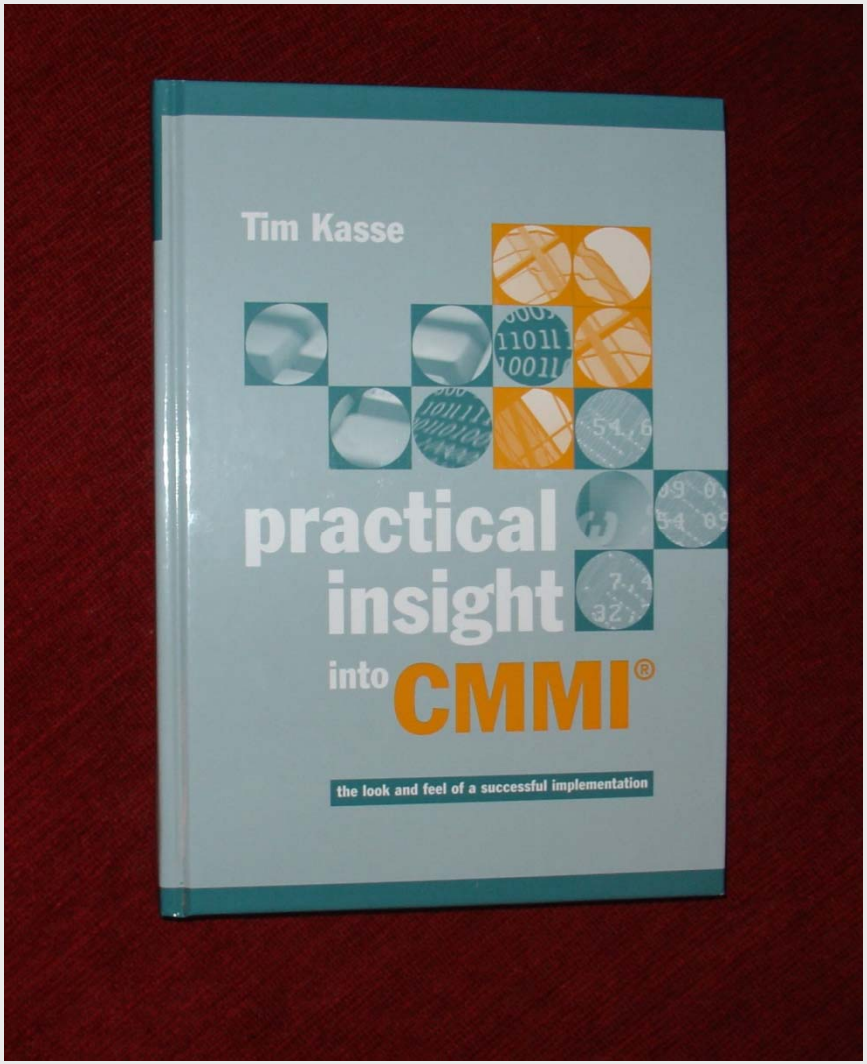
+49 7721 407 851 – Business

+49 7721 407 852 – FAX

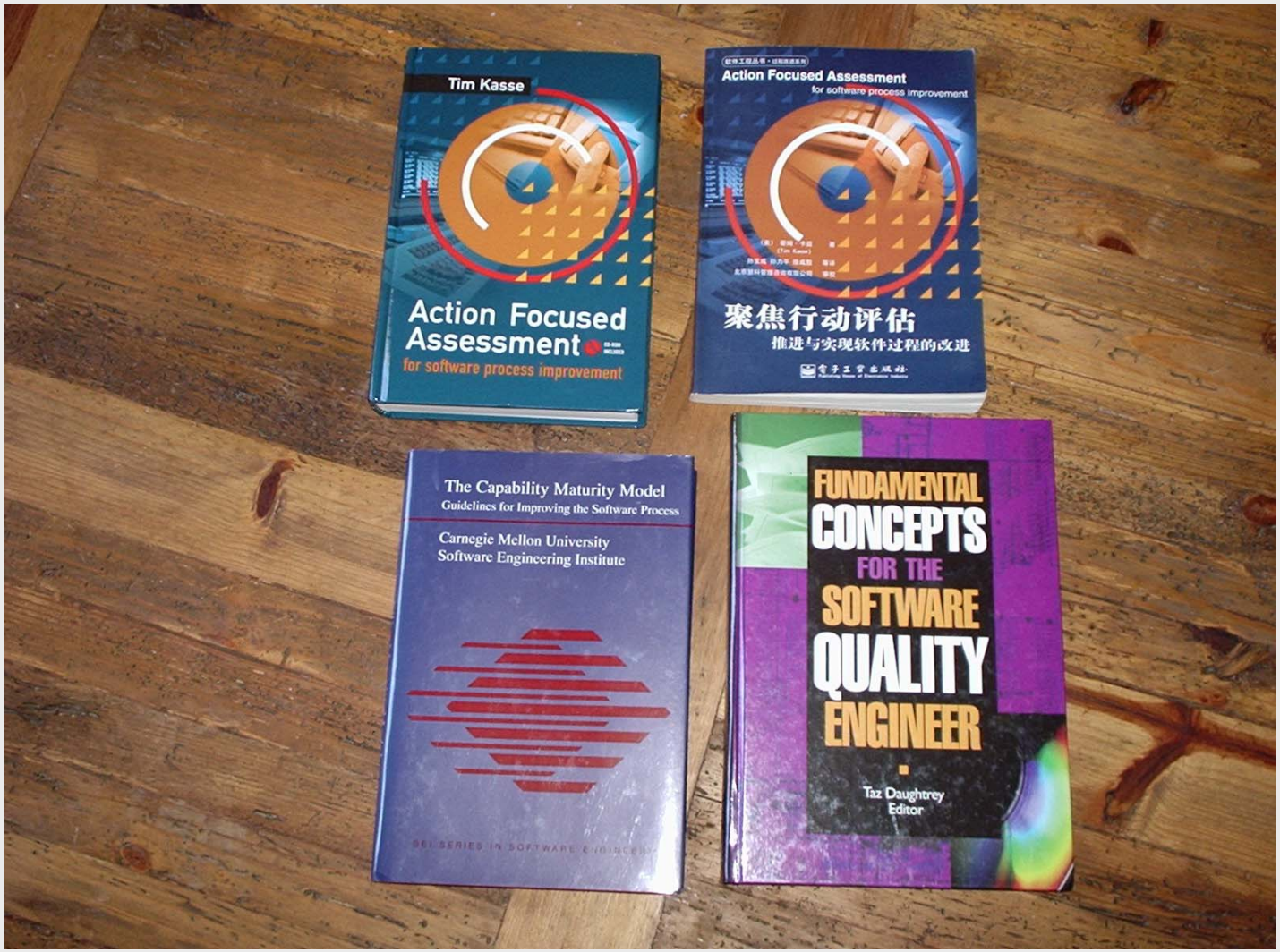
ingo.tegtmeier@kasseinitiatives.com

www.kasseinitiatives.com

Books
From Kasse Initiatives



Books
From Kasse Initiatives - 2



Books From Kasse Initiatives - 3

- Tim Kasse, Practical Insight to the CMMI, Artech House, Cambridge, Massachusetts, 2004
- Tim Kasse, Action Focused Assessment for Software Process Improvement, Artech House, Cambridge Massachusetts, 2002.
- Tim Kasse, Action Focused Assessment for Software Process Improvement, (Chinese Translation). Electronics Industry , Beijing, China, 2002.

Books From Kasse Initiatives - 4

- Taz Daughtrey, Fundamental Concepts for the Software Quality Engineer, ASQ Quality Press, 2002. Tim Kasse and Dr. Pat McQuaid contributed the chapter on Software Configuration Management for Project Leaders.
- Mark C. Paulk, Charles V. Weber, Bill Curtis, Mary Beth Chrissis, The Capability Maturity Model - Guidelines for Improving the Software Process, Carnegie Mellon University Software Engineering Institute, Pittsburgh, Pennsylvania, 1995. Tim Kasse is listed as a contributor