SPI Manifesto "Why You Need It"

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CMMI Technology Conference 2010 Nov 2010 Denver, Colorado

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Welcome

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Bienvenido

Bienvenue

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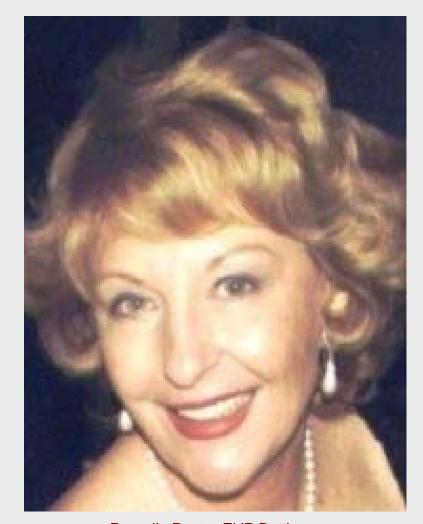
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Bienvenuto Välkommen

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ברוכים הבאים



Pamelia Rost – EVP Business Development Kasse Initiatives



- Building quality software that has economic value has been, is, and will remain a "hard thing to do!"
- If one has strong discipline without agility, the result is classically bureaucracy and stagnation and possibly abandonment of process and planning altogether
- Claiming one is agile without discipline is the unbounded enthusiasm of a startup company that still has not made a profit and maybe never will
- The challenge is finding the right mix!

Agile Manifesto for Software Development



Manifesto for Agile Software Development

- We are uncovering better ways of developing software by doing it and helping others do it.
- Through this work we have come to value:
 - Individuals and interactions over processes and tools
 - Working software over comprehensive documentation
 - Customer collaboration over contract negotiation
 - Responding to change over following a plan



Principles behind the Agile Manifesto

- Our highest priority is to satisfy the customer through early and continuous delivery of valuable software.
- Welcome changing requirements, even late in development. Agile processes harness change for the customer's competitive advantage.
- Deliver working software frequently, from a couple of weeks to a couple of months, with a preference to the shorter timescale.
- Business people and developers must work together daily throughout the project.



Principles behind the Agile Manifesto - 2

- Build projects around motivated individuals. Give them the environment and support they need, and trust them to get the job done.
- The most efficient and effective method of conveying information to and within a development team is face-to-face conversation.
- Working software is the primary measure of progress.
- Agile processes promote sustainable development. The sponsors, developers, and users should be able to maintain a constant pace indefinitely.



Principles behind the Agile Manifesto - 3

- Continuous attention to technical excellence and good design enhances agility.
- Simplicity--the art of maximizing the amount of work not done--is essential.
- The best architectures, requirements, and designs emerge from self-organizing teams.
- ♦ At regular intervals, the team reflects on how to become more effective, then tunes and adjusts its behavior accordingly.

Software Process Improvement Manifesto



The Inspiration for the SPI Manifesto

- With models, standards, methods and techniques from all parts of the world focused on process and quality it is only fitting that a process improvement manifesto was developed
- In September 2009, a group of 15 experts in Software Process Improvement (SPI) from all over the world gathered near Madrid, Spain and shared their expertise and wisdom from their many years of process improvement experience
- The meetings were held at the EuroSPI (European Software Process Improvement) conference (www.eurospi.net)
- Following the initial sharing, 30 workshop participants, Led by Jan Pries-Heje and Jorn Johansen, brainstormed core values and principles specifically focused on process improvement

Chief Editors Jan-Pries-Heje - Roskilde University Jorn Johansen – Delta Axiom



Process

- Process defines how a business does business and may include a set of processes such as:
 - 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
- Process can be viewed as a methodology that is applied from elicitation of requirements to design through delivery
- ◆ 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



Process - 3

- We build the business right through process
- We build the right business with guarantees of product and service quality and customer satisfaction
- Process is the fastest-lowest cost path to get there and know if you are there!

SPI Manifesto

http://www.madebydelta.com/imp orted/images/DELTA_Web/docum ents/Ax/SPI_Manifesto_A.1.2.201 0.pdf

Values and Principles



- A Value is something that deserves to be held up because of its importance or worth
- The SPI Manifesto prioritized values of people, business focus, and a belief that organizational change is at the core of Software Process Improvement

Values Overview

♦ Values

- People Must involve people actively and affect their daily lives not to be focused on management alone
- Business What you do to make business successful – this is not about living to deploy a standard, reach a maturity level, or obtain a certificate even though it can certainly help do all of those things
- Change Process improvement is inherently linked with change – we realize and accept that we cannot continue to live as we do today – we must change – perhaps a little or perhaps a lot

Values Details



- We truly believe that SPI must involve people actively and affect their daily activities
- Context and Problem
 - The last decade has brought "Ivory Towers" using magic tools and models that paint process diagrams
 - In most organizations, the projects and service providers did not really use their organizational processes
 - The people who were most affected were not involved in the process description development



People - 2

♦ Value Explained

- Business success depends on the competitiveness of the organization
- The competitiveness of every organization is based on the knowledge, engagement, and commitment of the people working in it
- Only active involvement of the people working in the organization ensures the success of a SPI initiative from the business perspective
- Actively involved people need sufficient information and training on how to operate on that information



People - 3

Hints and Examples

- The modern organization paradigm is having its people solving problems and changing the organization together
 - Having experts solve the problems and forcing change on the rest of the organization's workforce has not and does not work
- Enablers for success in modern organizations include:
 - People making full use of their experience
 - People taking responsibility for change on their project and throughout their organization
 - People using and improving the processes they have helped to define



- We truly believe that SPI is what you do to make business successful
- Context and Problem
 - Many people do not believe that they need processes in order to build and deliver software products
 - Process is too often seen as somebody else's process description and not applicable
 - Processes are often forces on projects that do not fit the need of the project or the business



Business - 2

Value Explained

- Process descriptions are just words We believe that the process should bring value to the business
- For successful process improvement we must ensure that any improvement recommendations are targeted to the actual business-related objectives
 - Not just try to be compliant with a standard or model
- Process should reflect how the work actually gets done – it should not be a set of words that projects must ignore to be successful
 - Words and actions need to be consistent
 - "We get the job done in spite of the processes and management"



Hints and Examples

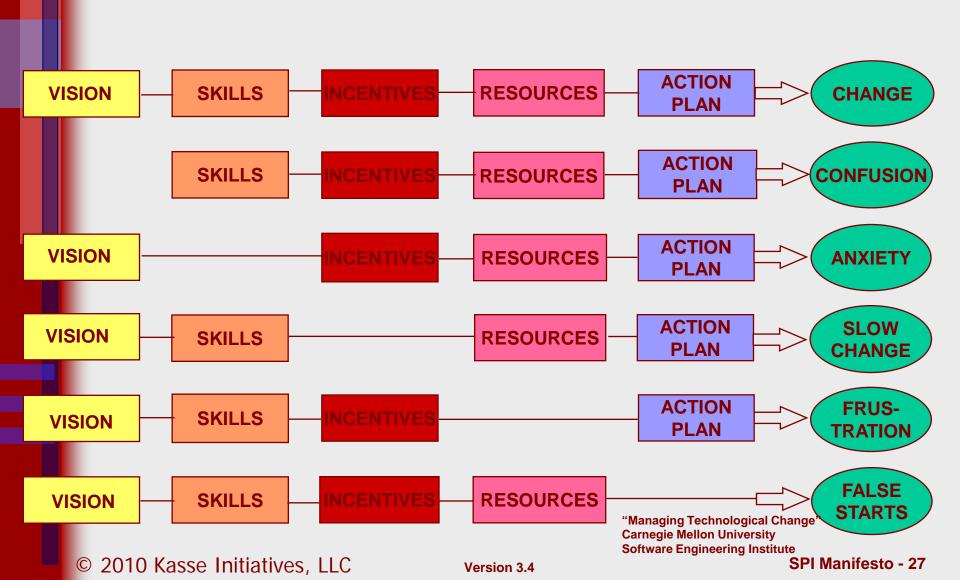
- Use today's project / organizational implemented processes as an agreed upon baseline for process improvements
- Understand the vision and business objectives to ensure the process can always be shown to support them
- Always refer to the process description as a representation of the process
- Communicate how standards and models are meant to support process improvement
- Practice continuous communication at all levels of management and practitioners



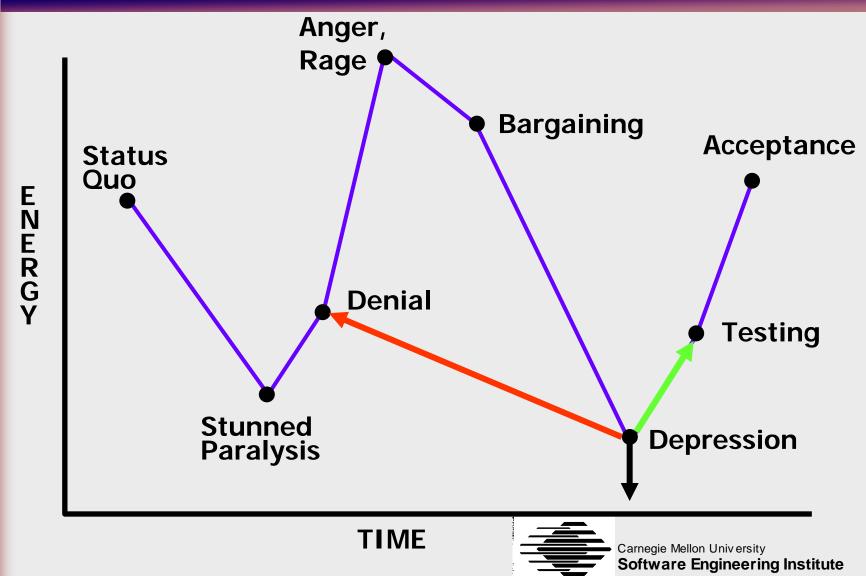
Change

- We truly believe that SPI is inherently linked with change
- Context and Problem
 - Improvement involves change for the individual, the project, and the organization
 - Maybe the change is small or maybe it is extensive but there will be change and many managers and developers do not want change in their environment and especially in themselves
 - We know that it is difficult for people to accept or adopt change, because they are comfortable doing things they way they always have even if it costs them overtime or loss of social interaction

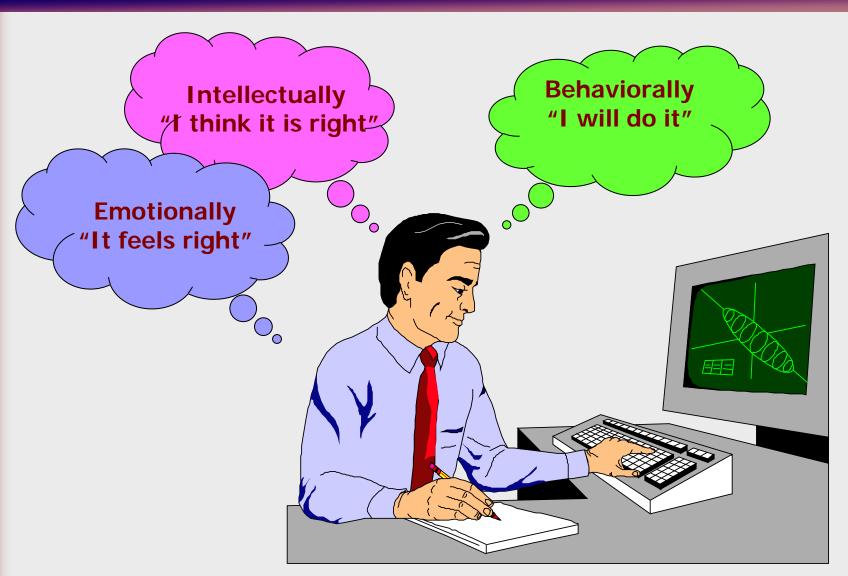
Managing Complex Change Requirements



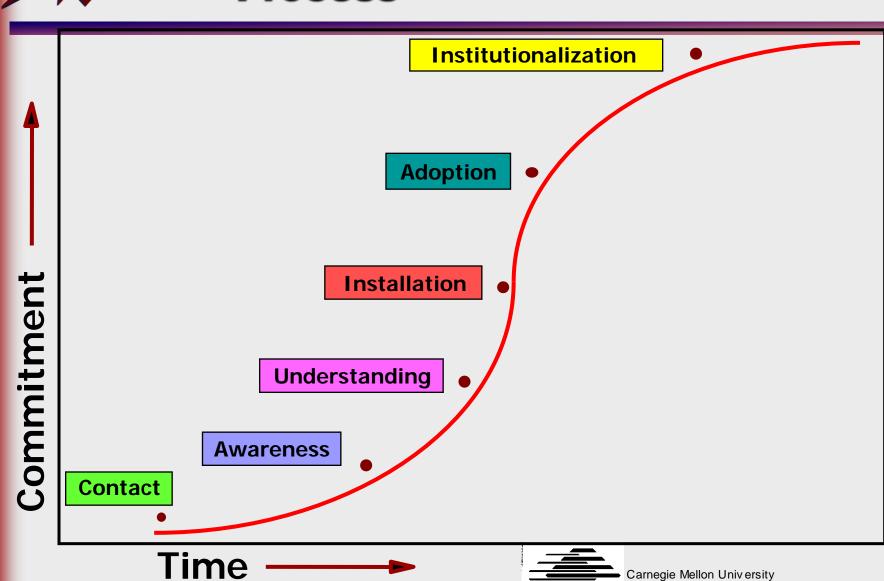
The Response to Change



Three Ways People Respond To Change



Commitment is a Phased Process



Software Engineering Institute

SPI Manifesto - 30



Change - 2

♦ Value Explained

- If we accept that process improvement means change, then our process improvement initiative must have a change management component in it
- Process improvement is important for product quality, customer satisfaction and measurable business but we want it together with satisfied employees



Change - 3

◆ Example

- Torganization in a predominantly Asian culture started a process improvement initiative
- One change required was to institutionalize Peer Reviews
- Observer, colleagues did not want to review their peers work and find major defects for fear of causing them to lose face
- Training, retraining, videotaping, and coaching did not produce the desired results from Peer Reviews after 3 years



Change - 4

- Consultant explained that if the major defects were not found in Peer Reviews they would be found by the customer and everyone would lose face including the CEO
- CEO appointed middle managers to serve as coaches and encouraged the project members to fully participate in the Peer Reviews as they were intended to function
- Management's commitment to change encouraged the practitioners to participate in the Peer Reviews
- Result: No one got fired | product quality went up | jobs were kept | profits increased | and lifestyles were improved due to less time needed in finding defects
- CEO declared that this culture change was the most significant event in the process improvement initiative!

Principles Details



- A Principle is something that can serve as a foundation for action!
- The ten (10) principles developed to support the SPI Manifesto values are intended to be used to govern personal behavior in relation to Software Process Improvement work



◆People

- ♦ Principle 1 Know the culture and focus on needs
- Principle 2 Motivate all people involved
- Principle 3 Base improvement on experience and measurements
- Principle 4 Create a learning organization



♦Business

- Principle 5 Support the organization's vision and business objectives
- Principle 6 Use dynamic and adaptable models as needed
- Principle 7 Apply risk management



◆Change

- Principle 8 Manage the organizational change in your improvement effort
- Principle 9 Ensure all parties understand and agree on process
- Principle 10 Do not lose focus!

People Principles



♦ Explanation

- The culture of an organization is fundamentally embedded in human behavior
 - It is expressed through norms (explicit or implicit) that the organization used to express behavioral expectations
 - Culture also provides an indication of appropriate and inappropriate attitudes and behaviors
 - These rules also affect the interactions with others
- The organizational culture is a shared system of meanings, values, and practices by the employees in the organization



- Practices are distinguishable characteristics of the organizational culture that have a deep meaning for the members of the organization but are usually invisible to outsiders at a glance
- Values are "qualities,", principles, and behaviors considered to be morally or intrinsically noble, valuable and desirable by the members of the organization
- Cultural values are deeply ingrained and are held closely even if conflict results



Principle 2 - Motivate All People Involved

◆ Explanation

- Process improvement does not succeed by defining processes in a "highly sophisticated" process group
- Use the experience of the functional experts to define and improve those parts of the process that affect them in their daily work
 - Empowered experts will bring the necessary skills and the right mix of competence in order to achieve real value
- Management support, promoted by Deming is always imperative to have
- People need to be allowed to ask, "What is in it for me?"
 - Overt resistance is better than covert resistance!



Principle 2 - Motivate All People Involved - 2

- Coordination and cooperation between all levels of management and practitioners will ensure a widely accepted process and commitment of all of the people
- We recommend providing the necessary resources like training, equipment, and coaching support to all people who are expected to use their project's and/or organization's processes
- We also recommend reviewing the organization's reward structure and modifying it appropriately to support projects who follow processes with business success and not just put "heroes" in the spotlight

YOUR EXAMPLES



♦ Explanation

- As processes are developed from what people do, any process improvement effort must seek to optimize this "doing"
- Conditions for optimization can be discussed but only the individual can change his/her actions
 - This requires individual competencies, readiness, and willingness to learn and optimize actions



- Readiness is obtained through experience as well as input or visible measurements of process capabilities
- Competence sets your ability to reflect on your actions based on experience, input, and measurements
 - This new knowledge will help change future actions
- Willingness motivates you to step through the learning cycle
 - It is influenced by the organization's culture, your own personality, incentives, requests or orders



Principle 4 - Create a Learning Organization

◆ Explanation

- A practice accepted by all levels of managers and practitioners that represents useful core knowledge in a learning organization has the following three distinctive features:
 - For developers it has practical value to improve the existing development work
 - For managers it helps to save time, cost, and to increase quality
 - For assessors it helps to demonstrate improved capability
- Such practices are disseminated across all projects in the learning organization



Principle 4 - Create a Learning Organization - 2

• We highly recommend that you work toward turning your organization into a "learning organization" that continuously facilitates the learning of its members and shares practical process experience across projects

YOUR EXAMPLES

Business Principles



Principle 5 - Support the Organization's Vision and Business Objectives

♦ Explanation

- Or. W. Edwards Deming stated in most of his books and lectures: "Process improvement should be done to help the business – not for its own sake."
- Process improvement initiatives should, as a minimum, be able to demonstrate the following:
 - Traceability to the organization's vision statement
 - Clearly stated business objectives that support the vision and are able to guide the organization's and project's efforts to produce measurable results
 - Measurement and analysis objectives that are aligned with established "information needs" and business objectives
 - Objective results that can be used in making business judgments and taking appropriate corrective actions



Principle 6 - Use Dynamic and Adaptable Models as Needed

♦ Explanation

- Models do not depict the real world but represent a simplified view of the real world
- Process improvement in general, is not tied to any model but is tied to the organization's business objectives and needs
 - Models include CMMI and SPICE
 - Standards include ISO 9001 and ISO 9126
 - Techniques / approaches include Six Sigma, SCRUM and Agile
 - Lifecycle models include Waterfall, Incremental, V-Model, Spiral, and Evolutionary



- Experience has shown that in most cases, you cannot simply follow one model or standard and expect to get the best results
 - Models and the concepts built into them can and should be combined to achieve business objectives
- Each model and standard should be thought of as a tool box that can help to resolve specific organizational challenges
- The best models have a dynamic component to them
 - They have built-in ways to take circumstances and contingencies into account



Principle 7 - Apply Risk Management

Explanation

- Any improvement effort may go wrong or not work as expected
 - This does not mean the process improvement initiative or the model or standard chosen to support it is wrong
- Project management standards such as the one developed by the Project Management Institute has risk management built in as an integral part of any successful project planning
- If you view the process improvement initiative as a project, which we recommend, you should consider what might go wrong before processes are developed and placed into the projects and developers hands

Change Principles

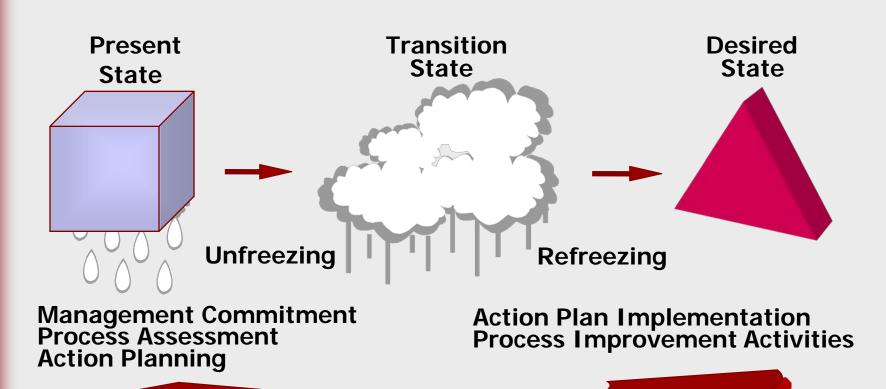


Principle 8 - Manage the Organizational Change in Your Improvement Effort

♦ Explanation

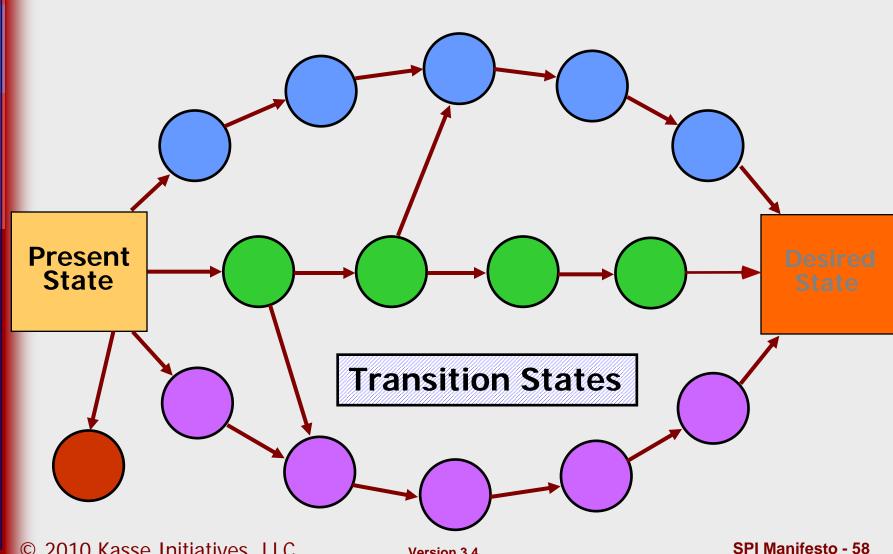
- Real, measurable improvement requires real people to really change their behavior!
 - Process improvement is about organizational change
- The simplest depiction of organizational change is the three-step model: Unfreeze – Move (Transition) – Freeze as shown in the following slides

A Simple Change Model





A Sample Change Model





Principle 8 - Manage the Organizational Change in Your Improvement Effort - 2

- Unfreeze to unfreeze for process improvement, you have to make the organization "receptive" to change
 - The organization must realize there is a need for change
 - There should be relevance to the individuals in the workforce
 - Unfreezing is needed because if you do not recognize the need for this step, and create organizational receptivity, the organization will behave like a block of ice, it will naturally resist change



Principle 8 - Manage the Organizational Change in Your Improvement Effort - 3

- Move / Transition to move your improvement effort, a solution to the relevant problem that was identified during the unfreezing process should be proposed
 - Project Managers and Members need to be able to count on and receive coaching and in-the-trenches support
 - Don't forget the "bathtub effect" When a new process or tool or technique is introduced into a project, the productivity of the project members will get worse before it gets better
 - Coaching in the trenches where the practitioners live can help reduce the dip in productivity when the process is introduced



Principle 8 - Manage the Organizational Change in Your Improvement Effort - 4

- Freeze make sure the change is a permanent part of how the organization works
 - Policies describing the required behavior change
 - Training, mentoring, coaching
 - Tool support
 - Management "walking the talk"
 - Measurements and feedback so the managers and practitioners see and continue to see the benefits of the change

YOUR EXAMPLES



Principle 9 - Ensure All Parties Understand and Agree on Process

Explanation

- Process descriptions are a snapshot of some important part of the organizational common agreement on how the organization works
 - But the process description are only valuable if they are agreed upon by the workforce
- Process descriptions can and often are packaged into models and standards such as CMMI, SPICE, and ISO 9001
- Process improvements constantly challenge the models and process descriptions but this is a "good thing"
 - Processes that are continuously reviewed and improved as the organization's business and constraints change will remain practical and used
 - If they are allowed to remain stagnant the process improvement may grind to a halt or to back to being only project or individually owned



Principle 9 - Ensure All Parties Understand and Agree on Process - 2

- ♦ To ensure "living" operational and adaptive models and processes the organization must ensure they are:
 - Flexible and tailorable usable for different types of projects in the organization
 - Expressed in a common language and visualized when possible
 - Based on communicated, understood, commonly agreed upon, and supported process improvement proposals
 - They are developed, deployed, and continuously maintained

Principle 10 - Do Not Lose Focus

♦ Explanation

- Define targets, plan the measures to reach the targets, and stick to the improvement plan
- Each improvement has to make a contribution to better fulfill the business goals and offer people motivation for changing their behavior
 - Without business impact, it is not possible to get a budget for measures
 - Without involvement of the people, the measures will not lead to a change of behavior
- Appropriate measures have to be agreed on with relevant stakeholders at all hierarchical levels



- Integrate process improvement actions into daily operational activities and carry them out with the same persistence as any other aspect of the daily business
- Provide for continuous motivation of the workforce to avoid the risk of the process improvement effort becoming uninteresting or boring



- Companies which are consequent in SPI and do not lose focus will see many benefits including:
 - Increased efficiency
 - Better product quality through better processes
 - Trust from customers because of demonstrable high capability levels
 - Competitive advantage for new business
 - Employees who are willing to participate in SPI on an ongoing basis – true continuous process improvement!

YOUR EXAMPLES

Summary

- Now it is time to use the SPI Manifesto!
- Jorn Johansen and Jan-Pries-Heje, the leaders and chief editors of the SPI Manifesto put forth a reminder on what to use the manifest for.
 - You can use the manifest to obtain knowledge of SPI.
 - It will help you remember what is important about software process improvement
 - Each value and the consequent principles are written so you can easily place yourself into the problem and context
 - Short explanations for each value are provided that can further augment your understanding
 - Each value also has some relevant examples that will make it easier to learn and remember the values and principles



- You can use the SPI Manifesto when you are responsible for planning a SPI project
- You can apply these SPI Manifesto principles in your organization's process improvement project that will support the necessary corresponding change
- Thanks is given to all that shared their experience and worked together to produce this SPI Manifesto but we have not stopped......
 - The next three years at the EuroSPI conferences, additional workshops will be established to substantiate the values and related principles and to "live" continuous process improvement through improvement to the SPI Manifesto



SPI Manifesto Workshop Participants © 2010 Kasse Initiatives, LLC Version 3.4 SPI Manifesto - 71

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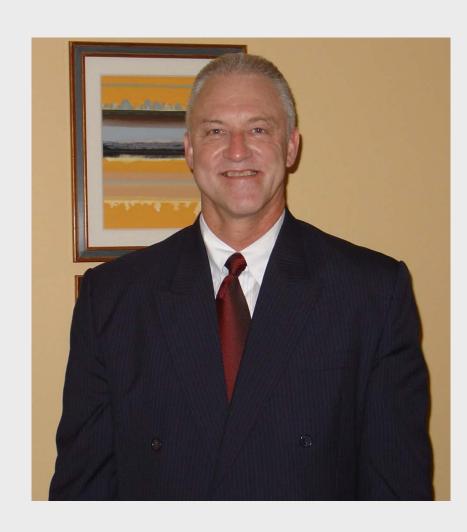
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Books From Kasse Initiatives

Software Engineering

The newly revised and expanded edition of the bestseller, Practical Insight into CMMI* is an essential reference for engineering, IT and management professionals striving to grasp the "look and feel of a titioners up to speed on CMMI* Version 1.2 and includes new material on:

- Reviews and testing:
- Quality factors, quality criteria, and quality metrics:
- Physical architecture:
- Change control boards:
- Supplier agreement management;
- Constraints on alternative solutions;
- Causal analysis techniques.
- Evolving measurements:
- Applying CMMI* to manufacturing.

Written by a world-renowned expert in the field, the book offers a clear picture of the activities an organization would be engaged in if their systems and software engineering processes were based on CMMI* . The book teaches the roles and responsibilities of professionals at all levels, from senior and middle management to project leaders and quality assurance personnel. Offering a full appreciation of the power of CMMI* to enhance systems and software process improvement initiatives, this invaluable reference captures the essence of each of process area by presenting it in a practical context. From project monitoring and control, quality management, and requirements engineering, to risk. management, integrated teams, and measurement programs, this authoritative volume provides a complete understanding of CMMI* and the benefits of this integrated approach in an organization.

Tim Kasse is CEO and Principal Consultant for Kasse Initiatives, LLC. He has over 38 years of systems/software engineering experience and has conducted over 100 assessments worldwide based on the Capability Maturity Model* and CMMI*. Mr. Kasse is also the author of Action Focus engineering from the University of Artzona, Tucson and an M.A.S. in computer science from Southern Methodist University.

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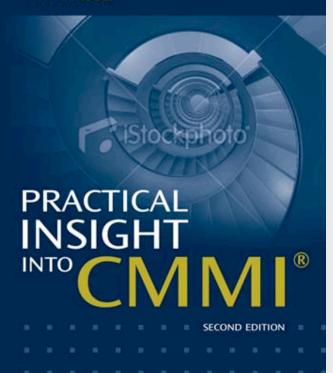
ISBN-13: 978-1-59693-347-7 ISBN-10: 1-59693-347-X



SECOND **EDITION**



TIM KASSE



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