

Software Process Improvement

- Software Process Improvement (SPI) methodology is defined as a sequence of tasks, tools, and techniques to plan and implement improvement activities to achieve specific goals such as increasing development speed, achieving higher product quality or reducing costs.
- SPI can be considered as process re-engineering or change management project to detect the software development lifecycle inefficiencies and resolve them to have a better process.
- This process should be mapped and aligned with organizational goals and change drivers to have real value to the organization.

4 Steps of SPI

- ◆ Current Situation Evaluation
- ◆ Improvement Planning
- ◆ Improvement Implementation
- ◆ Improvement Evaluation

How to manage outsourced Project

■ Current Situation Evaluation

- ◆ This step is the initial phase of the process and it is mainly to assess the current situation of the software process by eliciting the requirements from the stakeholders.
- ◆ The elicitation can be conducted through different techniques. For example, individual interviews, group interview, use-case scenarios, and observations.

■ Improvement Planning

- ◆ In this step, the findings should be categorized and prioritized according to which one is the most important or have the most severity.
- ◆ the gap between the current level and the target level should be planned in terms of a set of activities to reach that target.

How to manage outsourced Project

■ Improvement Implementation

- ◆ In this step, the planned activities are executed and it puts the improvements into practice and spreads it across the organization.
- ◆ This iterative way of implementation will help the organization to realize the early benefits from the SPI program early or even adopt the plan if there is no real impact measured from the improvement.

■ Improvement Evaluation

- ◆ Measurement, in general, permits an organization to compare the rate of actual change against its planned change and allocate resources based on the gaps between actual and expected progress.

Why are companies seeking SPI

- Standardization and process consistency
- Cost Reduction
- Competitive Edge
- Meeting targets and reduce time to market
- Improve satisfaction
- Job satisfaction responsibilities and Resource Management.
- Automation and Autonomy
- Proven outcome

Demotivators of SPI

- Time Pressure
- Budget Pressure
- Budget constraints
- Inadequate metrics
- Lack of Management Commitment
- Staff Turnover
- Micro Organization
- Bad Experience and lack of evidence for direct benefits.

What are the different SPI methods?

- SPI has a lot of methods and you can as well define your own method if it is effective or combine between more than one if you do not have any preferences or organization need to adopt a specific method.
- Inductive (Bottom-up Approach)
 - ◆ Quality Improvement Paradigm
 - ◆ Improvement framework.
- Prescriptive (Top- Down Approach)
 - ◆ CMMI
 - ◆ Software Process Improvement and capability determination

Success factors of SPI according to process?

■ Current Situation Evaluation

- ◆ Stakeholder's involvement
- ◆ Top Management Commitment
- ◆ Clear and relevant SPI goals
- ◆ Staff Involvement
- ◆ Encouraging communication and collaboration
- ◆ Business Orientation
- ◆ Information sharing

Success factors of SPI according to process?

■ Improvement Planning

- ◆ Stakeholder's involvement
- ◆ Top Management Commitment
- ◆ Measure objective
- ◆ Staff Involvement
- ◆ Creating process action teams
- ◆ Focusing on long term benefits
- ◆ Information sharing

Success factors of SPI according to process?

■ Improvement Implementation

- ◆ Stakeholder's involvement
- ◆ Top Management Commitment
- ◆ Staff Involvement
- ◆ Staff time and resources
- ◆ Creating process action teams
- ◆ Focusing on long term benefits
- ◆ Information sharing
- ◆ Lack of motivation
- ◆ Lack of short Term Goals

Success factors of SPI according to process?

■ Improvement Evaluation

- ◆ Stakeholder's involvement
- ◆ Top Management Commitment
- ◆ Encouraging communication and collaboration
- ◆ Clear and relevant SPI goals
- ◆ Creating process action teams
- ◆ Information sharing

Moving Forward

- ◆ There is no single process, framework, or methodology that works all the time. Every organization is different.
- ◆ What's more, organizations are made up of people who need to be convinced that the change really is necessary.
- ◆ While these practices can be very useful as guidelines, the most important part of improving the software process is helping people in your organization understand their role in the development of software.

How to make successful projects

■ Create a project Plan

- ◆ a schedule that identifies when each task should be completed,
- ◆ a list of resources needed (time, resources, equipment),
- ◆ a list of risks and potential problems,
- ◆ an estimate of how much work will be required.

■ Set realistic Deadlines

- ◆ knows how much time they have to do what they have to do.
- ◆ placing too high of a deadline can lead to frustration on the part of your stakeholders.
- ◆ if you find that you are running behind schedule, it may be helpful to take some time off and reassess the software project.

How to make successful projects

- Communicate effectively with stakeholders
 - ◆ be clear about what you need from them,
 - ◆ make sure you understand their needs and expectations,
 - ◆ avoid giving them too much information at once,
 - ◆ be prepared to answer any questions they have.
- Analyze project challenges and opportunity
 - ◆ This includes knowing the project's scope, having a plan for completing it, and ensuring that all team members are on board with the project's goals.
 - ◆ However, many software projects fail due to risks and opportunities that were not adequately analyzed.

Key Issues and solutions of outsourced projects

■ Choosing the wrong outsourcing model

- ◆ You should choose outsourcing models according to the requirements, budget, scope, and deadlines of the outsourced project.
- ◆ The wrong outsourcing model can negatively affect your product or service quality.
- ◆ The requirements of development processes keep changing, such as materials, time, resources, etc.

■ Uncertainty about the vendor

- ◆ If you're unsure about the background, skills, and experience of the outsourcing, it can cause serious outsourcing problems, such as:
 - ◆ Increased costs. Misunderstandings.
 - ◆ Workflow disruption and Decreased productivity.

Key Issues and solutions of outsourced projects

■ Language and Cultural Differences

- ◆ Offshore outsourcing is when you outsource your business processes to a third-party vendor in a foreign country.
- ◆ For example, American companies outsourcing customer support to [Mexico](#) may find accent and language differences affecting client communication.

■ Ambiguous Cost

- ◆ Firms often outsource business processes to increase profit, however, outsourcing could be problematic for companies who underestimate their budget.
- ◆ If you don't define your budget and project scope clearly, you may have to bear unexpected expenses like additional software, new employees, extended timelines, etc.

Vendor Management

- ◆ Vendor management includes everything a business does to develop and maintain relationships with suppliers.
- ◆ This includes finding and selecting suppliers, negotiating vendor contracts, managing deliveries, maintaining inventory levels, scheduling service visits, controlling supply costs, and identifying ways to mitigate risks related to the vendor supply chain.
- ◆ Understanding the importance of vendor management helps project managers set priorities when it comes to allocating resources to this vital task.

Why Vendor Management important in PM?

- ◆ Good project managers recognize the needs of employees in their departments and develop reliable supply chains to keep those workers performing at their best.
- ◆ Vendor management gives you the insight you need to provide consistent access to the supplies your team needs.
- ◆ Vendor management is part of your overall project management strategy, so it ties into other aspects of developing a project.

How does vendor management work

- Project managers involved in vendor management begin by assessing the supplier needs for the project and setting objectives for cost, delivery schedules, and reliability.
- Vendor lifecycle management is an approach that takes a wide view of the supply chain and how it relates to your company's procurement processes, so you can track those relationships from the initial contact through the final closure of a vendor account.
- A vendor management system is a strategic process designed to identify, choose, and monitor the companies and individuals who provide necessary products, services, and equipment for your business.

How do you perform vendor analysis

- Cost, including initial monetary outlay and ongoing costs
- Return on investment (ROI)
- Service commitments, including timely delivery and available scheduling options
- Quality of the product or service being supplied
- Operational stability of the supplier
- The potential for building long-term supplier relationships
- Past performance of the supplier based on historical vendor data

Successful vendor management requires

- Accurate documentation
- Relevant info and expectations
- Reporting
- Project Management Software
- Synchronization
- Risk Management
- Trust