

Let's not argue about practices!

Some non-conventional ideas from a successful process improvement effort, originally undertaken in a developing country

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Warning!

This presentation is full of opinions



Brief company profile

- PSL is a growing IT company supplying software services and products.
- The North American market is served through [PSL Technology Corporation](#), a small commercial office in Dallas.
- European markets are attended by [PSL Europe](#), located in Spain. Central and South American markets are served through [PSL Colombia](#).
- Software development centers in Colombia and Spain. Planning to open a new one in **San José, CR.**
- PSL provides best in class software services, at a fraction of the cost of comparable alternatives.

Brief company profile

- PSL has served clients in Canada, the US, the UK, Spain, and several countries in Central and South America.

Some recognitions

- In 2006, PSL was conferred the prestigious **IEEE/SEI Software Process Achievement Award**.
- One of **eight companies worldwide**, at the time of its assessment, to achieve **SEI CMMI level 5** recognition.
- **First** Ibero - American company (region describing Latin America, Portugal & Spain) to achieve **SW - CMM level 5** recognition.

Brief company profile

- **ISO 9001 certified.** In process of registering its **ISO 27001** system.

Other practices

- **Six Sigma.**
- Practices from **eSCM** (Carnegie Mellon's e - Sourcing Capability Model) and **ITIL.**

The chaos - PSL before the SPI initiative

Before 1996

- **Portfolio of very reliable COBOL - developed products.**
- **PSL was recognized for its' highly functional, dependable and innovative products and services.**

1996

- **Release of a new ERP developed in C++.**
- **The “beast of complexity” woke up: Over budget, late to market, less functionality than expected, more than 10 defects / KLOC reported by its two initial clients.**

The chaos - PSL before the SPI initiative

FER (Defects / KLOC)	> 10 D / KLOC
Average hours to remove defects	14
Engineer years to fix software	40

- **Suspended system sales and software development projects.**
- **Software development and service groups were chaotic and employee motivation almost nil.**
- **Customer satisfaction in its lowest level in company history.**

Transforming performance or going bust. Process Improvement became our most important business challenge.

The Challenge

- ✓ **Underperforming and troubled small company,**
- ✓ **... of all places, located in Colombia,**
- ✓ **... competing with the biggest and best in the world,**
- ✓ **... with insufficient resources to undertake the journey,**
- ✓ **... in a fast changing and fiercely competitive world,**
- ✓ **... trying to achieve world class performance**

Is that possible?

The journey

After following conventional wisdom for some time with just sporadic success, we finally found our way to improve processes and transform performance

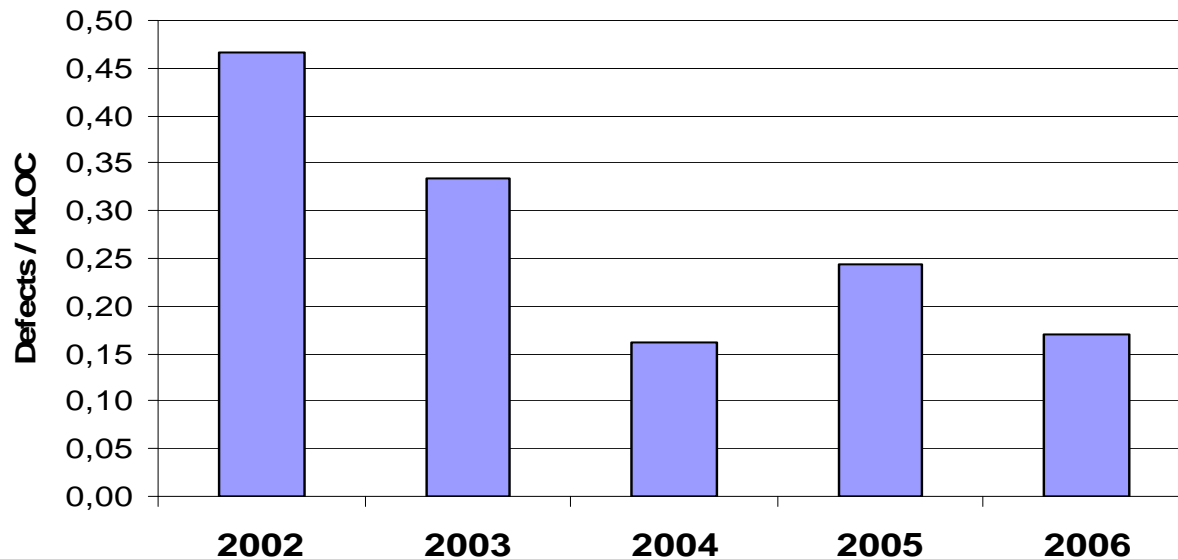
The path toward transforming performance is full of doubts and mistakes, because “It is impossible to understand a system without trying to change it”.

The following results show that, even in precarious initial conditions, our process improvement efforts have worked.

Kurt Lewin’s theory of change

Results

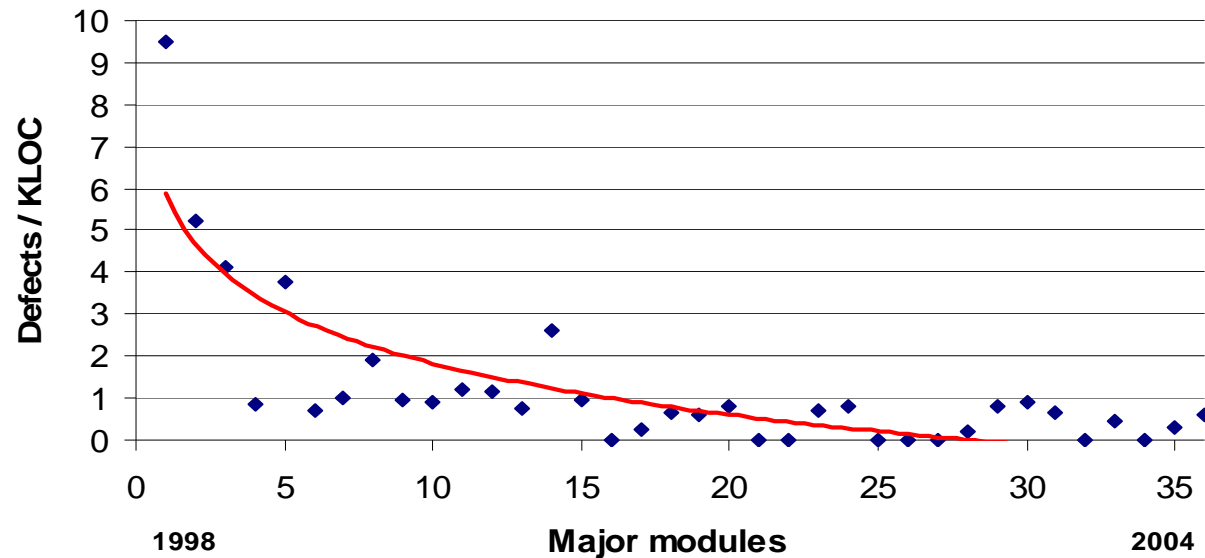
Field error rate - Cust. Software Business applications



FER has been decreased from 10 defects / KLOC in 1997 – 1998 to 0.17 defects / KLOC in customized business applications and 0.30 in PSL products.

Results

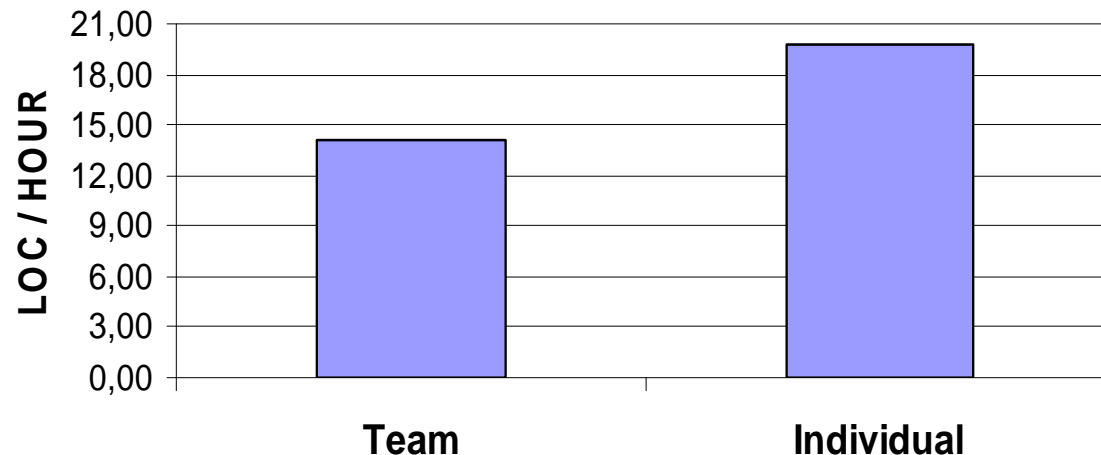
Def / KLOC - Formal acceptance test Business applications



Quality in acceptance test has been improved to an average of 0.37 defects / KLOC.

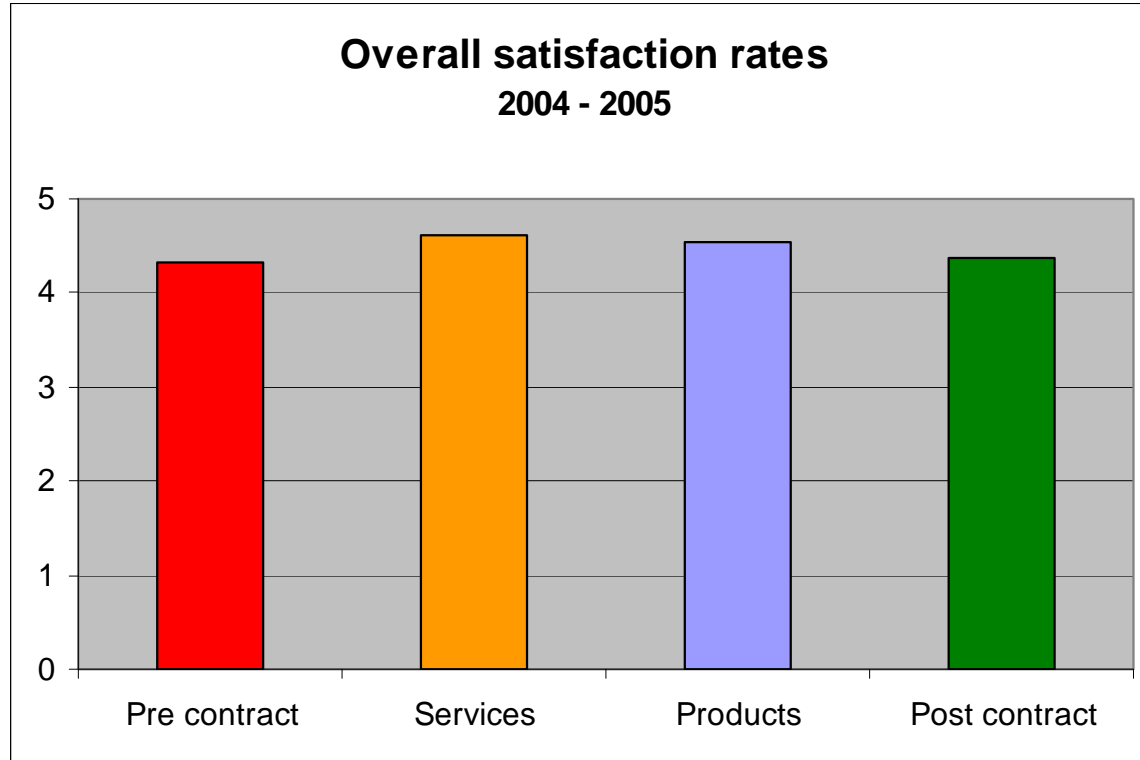
Results

Team and individual productivity J2EE environment



Productivity in Software developments groups has been raised from 1.98 LOC / hour in 1998 to 14.12 in 2006. An improvement of 613%.

Results



Customer satisfaction is at its highest point ever since the inception of the company

The journey

The goals of a Software Process Improvement Initiative are ***beyond the present company's abilities, skills and behaviors.***

- It is nonsense to just plan the technical side of SPI.
- SPI implies change and learning, not only at an individual but on a collective level.
- Change is harder than people think: a fact that may explain why most SPI efforts fail.

You are heading to an unknown territory. It is my belief that planning ahead for the whole journey is a mistake. Each step should be conceived gradually, as the system is understood.

The journey

Process improvement as a series of small iterations each one composed of Initiating, Transitioning, Diagnosing, Establishing, Acting, Leveraging

Phase I	Phase II	Phase III
Eliminate Chaos	Learn how to make software	Learn how to make better, faster and cheaper software

Problem solving

Operational effectiveness

Business Transformation

The journey

Elements of human change and learning should be incorporated in the design of the steps to transform performance (human side of PI).

People do not change:

- **In the middle of chaos**
- **When defensive reasoning is allowed (“why?”)**
- **When we do not take responsibility for our actions**
- **When we are afraid of making mistakes**

People change

- **When we are helped to learn how to think better**
- **Above all, when there is something to strive for**

The journey

Business reasons are not enough to motivate people to change.

- **Life is a search for meaning. The improvement process must be something that gives people a cause to strive for.**
 - ✓ **Vision, goals and purposes should not be limited to corporate achievements. We are also a social organization that wants to contribute to people and society. Trust is key to succeed in any human endeavor.**
 - ✓ **Shared vision and objectives constitute the glue that tie individual efforts.**
 - ✓ **Pride in accomplishment, work, contributing, learning**

This is not a problem of simply pitching the project to employees. They must believe in the larger Cause.

The journey

The way conventional wisdom approaches Software Process Improvement does not facilitate change

Common approach to Diagnosing

- Conduct an assessment to start
- Action items out of assessment
- Assessments evaluate against practices, not against outcomes

People may argue about practices but not about measured outcomes

The journey

Conventional wisdom is not always “wise”

“CMMi staged representation enables organizations to have a predefined and proved improvement path”. “Do not skip CMM levels”

- This could be a good recipe for companies that meet the premises behind the model, but it was not for us.
- CMMi, as any other model, is not enough to support a successful PI journey. Besides, you must tailor it.

***Work with the models, not for them.
Your goal is to improve!***

The journey

One point of view is just one point of view

There are plenty of options available to help companies to improve processes and transform performance.

- **¿What about Six Sigma, PSP, TSP, PMI, RUP, XP, SCRUM, ITIL, ISO 9000:2000, 27000, etc.?**

Listen to people who do not agree with the model, standard, or approach you are using. They have something to say and much to learn from

The journey

Diagnosing – Main activities

- Let people do the thinking to try to solve the problem in selected areas (no education yet in best practices, models, standards, etc.) *The initial approach.*
- Educate practitioners on SPI and best practices in selected areas. Provide them with information about their benefits.
- Assess present skills, abilities, knowledge and behaviors. Plan their development
- Decide what PA / practices to adopt. Design new processes.
- Address and anticipate the difficulties of change. This has to be an open subject.

The journey

Acting – Main activities

- Monitor progress in terms of results, not practices.
- Examine practices when results are below expectations.
- Examine the results of those who oppose
- Provide positive feedback
- Do not punish people.

Establishing and Acting – Main Benefits

- Implementation is easier and led by business and people's needs and priorities. Provides early results.
- Facilitates process of change and speeds up performance transformation. No useless discussions.
- “Creates” time for PI by solving resource consuming problems

Summary

- ✓ We decided to be mature before attempting to grow. It does not make sense to multiply the chaos.
- ✓ The technical side of a SPI is the easiest. *The human side is really tough* and it may explain why most Process Improvement efforts fail.
- ✓ You do not understand the real system until trying to change it.
- ✓ If you decide to undertake a PI initiative, work with the models / standards, not for them. If you have to challenge them as well as conventional wisdom to reach your goals, do it!
- ✓ Excellence is a path, not a destination. You will never get there!

Summary

- ✓ **The success of a Process Improvement initiative resides in Transforming Performance while improving quality of living at work (meaning, excitement, pride, self esteem, accomplishment).**
- ✓ **Coaching is key to succeed**
- ✓ **Listen to the voices of disagreement**
- ✓ **Process Improvement does not kill Innovation**
- ✓ **Process Improvement does not kill Agility**
- ✓ **Certificates do not make software**
- ✓ **Underdevelopment is a cultural problem, not an economic one**



Summary

- ✓ **Work with the best people, the best human beings.**

References

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