



Software Process Improvement Case Study



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WSOP Projects

Overview

WSOP is a consulting and SW development company. WSOP develops own products (e.g. NEX.IT) and works on specific projects for customers especially in the financial sector. We needed improvement of the **maintenance process, better information for financial management and better co-ordination sales – engineering.**

The main aspect of the SPIRE project is: **WE DID IT.** We knew for a long period that we have to do something – but it was necessary to receive the initial input by SPIRE and our mentor to do it.

We developed an extension of our internal planning system NEX.IT, it allows exact documentation, enables better document management, improves communication and grants more exact information for financial management. First of all it was additional effort (that's clear). But at the moment we see more and more results and an improvement of quality. So the overall evaluation gives us a good feeling and we are quite sure to reach significant improvements which also can be measured.

The Organisation and its Environment

Staff is 10 persons plus approximately 5-7 freelancers depending on specific projects. WSOP is located in Vienna, Austria but our market is the European Union. WSOP is interested in usage of new technologies and therefore tries to establish a "virtual office" with people working outside the office.

SW development at WSOP is well organised, maintenance sometimes is a problem. Communication (especially engineering – sales) sometimes is poor.

Improve Quality AND Reduce Costs

Starting Point

WSOP has good know-how on software engineering and outstanding know how and experiences in project management. But we did not really use this knowledge for internal purposes - isn't that typical?

A well known situation

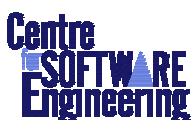
Since long time we said "*something must happen, things have to be changed*". So we planned to start an ISO 9000 project. During the preparation phase we implemented the method 3QS defined by Softwerker GmbH. And then we stopped. We learned that our customers are not really interested in an ISO certificate – they are only interested in good and reliable results. So we decided to save money and not to proceed with the ISO project.

During 1997 we reached the following status:

All projects started fully according to 3QS. But in all cases this was too complicated for our customers and so we have been happy to tailor 3QS according to our customers requirements. So usually the "tailored" result included very rich documentation of requirements, some design documents and almost no documentation which can be used as a basis for maintenance. And this became more and more a problem.

Leopold Weninger, managing director of WSOP: "*In some projects we did not have exact information about the project status, sales sometimes did not know what the developers planned to do and what they actually finalised. So sometimes promises given by sales and reality (seen from point of view of development) did not map.*"

SPIRE Partner sind:





Exactly in this situation we have been informed about SPIRE, we choose our mentor, and as a fact within days the project started. First of all we checked our main business processes and found:

- The development process itself is well organised and documented.
- The communication between the development process and the processes “financial management”, “sales” and “document management” are poor.
- So we set up the project to improve the flow of information from sales to management, engineering and support.

We expected advantages in reduction of workload for the management by systematic process management, improved productivity in engineering and support and reduction of workload for maintenance.

The goals have been defined as:

- Delegation of management activities
- Improve re-use techniques
- Grant necessary documentation for all team members
- Force exact calculation and recalculation
- Start activities to allow the usage of workflow management tools
- And try to go on towards an office with as little paper as possible (we do not rely on the paperless office).

The Improvement Project

Although the project started (and had to be started according to the definitions of SPIRE) within only some days, we have been in a lucky situation: Mr Hofer, a new member of the team just finished his studies at the university. So he has the newest knowledge and was not involved in the existing culture (or in some cases “non-culture”). Mr Weninger was responsible for the project and Mr Hofer was the “key player”. He did a series of interviews, developed new structures and processes and had a lot of discussions with all team members. Because everybody knows “*what we did always*” and “*what really is not necessary*” it was the main job of Mr Weninger to convince the team members that sometimes a new way may be a better way. That was a hard job.

Here is a short list of tasks and subtasks related to the project.

- Refinement of goals
- do the Synquest Assessment
- define (refine) business processes
- check quality manual and update 3QS documents

- redefinition of phases “design” and “test”
- redefinition of review- and quality plan
- definition of document flow and document management
- and finally implementation of process support and documentation database.

The Results

The new system improves the planning of projects, the documentation and financial management.

Planning of projects

According to 3QS – the standard method used in WSOP all phases of software projects are covered (starting with requirements definition and including maintenance and improvement). For all phases exist exact documents describing activities, sub-activities and resources. In combination with NEX.IT – the enterprise resource management system of WSOP – all phases of a project are as well documented as they have been in the past. But also all necessary documents are included and managed by the new system.

We defined the WSOP Standard for SW projects, the phases and activities and the according documents. All new projects are derived from this standard plan and are automatically integrated into the NEX.IT planning and reporting system.

Documentation

3QS offers a series of templates which can be used for documenting specific phases of a project. Some of these documents have been defined as mandatory, other documents can be used optionally. But tailoring always starts from the WSOP Standard for SW projects.

The team members do not start Word or Excel and then select the document, they check which activity according to the project plan they are working on and from this activity described in NEX.IT offers all mandatory documents to be filled in. A strict algorithm checks whether documents are closed or are still open for modification. In case of a redefinition the appropriate document has to be reopened and of course all documents depending on this specific task have to be checked (modified if necessary) and closed again.

This strict management of business processes is an excellent basis for accurate financial management.

Financial Management



A series of reports can be generated automatically (planned/actual - effort/costs/revenues). The results are available in standard format and can be processed directly by other applications in WSOP (billing, accounting, payment, reporting). In general we do not only have the overview belonging to project activities and effort (as we already had in the past), now we also have better information for sales and management.

Here is a very simple example of information gathered using the new system. It is one of the basic elements used in our project recalculation sheets:

<i>Alternativen auswerten</i>	600			
		Karner	B	55
<i>Alternativen ergänzen</i>	550			
		Schanil	W	30
<i>Anforderungen analysieren</i>	400			
		Karner	B	70
		Peer	R	15
		Peer	R	25
<i>Pflichtenheft ausarbeiten</i>	550			
		Schanil	W	45
<i>Pflichtenheft prüfen</i>	600			
		Schanil	W	34
<i>Vorläufiger QS Plan</i>	400			
		Karner	B	50

How to use the new system

The basis of the process management system is NEX.IT. All project plans are stored in NEX.IT, all activities of the day to day business and of projects are planned and managed with NEX.IT. All members of the team provide the actual data.

Mr. Hofer: *“The document management is handled by our system and nobody has to take care about where to find which document.”*

The team uses NEX.IT to identify the project and the phases (or one of the standard activities) and NEX.IT opens all related documents (text files, spreadsheets, project plans, graphics, ...). The well defined access rights grant **“everybody gets his documents – not more, not less”**.

Especially for monitoring purposes and for project management we now have better information, sales has a better overview about the project status and development has better information about market needs (information provided by sales).

Lessons Learned

Most of the problems resulted from time constraints.

Leopold Weninger *“this is not a technical project – it is a project concerning human resources. It is very difficult to start such a project immediately and to finish it during summer time.”*

A real challenge was the co-ordination with all other running activities at last – but really not least – it was not possible to fulfil the financial constraints.

Mr. Hofer: *“The methodology used was very new for us – it does not follow the well known standards of Software Engineering. So we had to learn a lot of new things. But this really was interesting.”*

Mr. Laux, the mentor: *“Understanding the questions of the SYNQUEST - Assessments sometimes was not so easy. It is very general, so it was necessary to translate it to the requirements of software developers.”*

Mr. Weninger: *“We tried to use existing project management software – and did not succeed. So we decided to develop our own method, which includes existing project management tools as a part. The specific items needed have been added by us.”*

How can we integrate our customers into this process and how can we establish a commonly agreed method for quality improvement?

Up to now the new system caused additional effort (analysis, design and implementation). But we also achieved better results especially in reducing effort for searching (in some cases really no longer time for information retrieval is wasted).

This new system is very essential to support our new organisation – the “virtual office”. The members of the team are not always in the office, they work from at home or where ever they prefer to work. Communication and co-ordination is managed via e-mail and server and only one weekly meeting is held.



Actually we see more and more positive aspects in delegation of management tasks, granting exactly the needed documentation, better (re)calculation and reduction of maintenance effort.

What did we learn?

- It is man - not the tool!
- The method must be adaptable
- There are 3 main tasks: training, training & training
- Make sure all partners co-operate
- KISS - keep it still simple
- **Just start, main problem is the first step**

Plans for the Future

The existing prototype is written using MS-Access. So the next step is to integrate it into NEX.IT – this means to rewrite it using VC++.

WSOP plans to proceed on the way to reach a “virtual office”, to implement a workflow management system and to reduce paper. We expect an ongoing reduction of costs and thus an improvement of quality.

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