CMM level 3 process improvement case study

Shanghai Baosight Software

May, 2003

Case study report

- **Introduction of Baosight**
- **R&D center CMM process improvement introduction**
- **Major content of consulting activities**
- **The problems existed before CMM process improvement**
- **Improvement action plan**
- **CMM process improvement result and benefit**
- **Introduction of project management tool**
- **Experience and lesson to learn**
- **Issue discussion**

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Shanghai Baosight Software

- **Baosight was founded in April, 2000, and went to public in April, 2001.**
- **Headquarter is located in Shanghai Pudong Zhangjiang hi-tech area, registered capital 2,60million RMB. It's a listed software company and Shanghai Bao steel group is its major shareholder.**
- **It owns many business divisions, it has 9 branchs and 2 offices in China. It's also parent company of Baoli, Baoxi, Baokang, and Baojing, and cover many industries such as metallurgy, electric power, transportation, finance, trade, medicine. Baosight work on building up "engineer-product-service" industry chain. It achieved a revenue of 640million RMB in 2002**
- **Currently the company has 1336 people(including branch, office, subsidiary company), 12 doctors and 202 masters, 76% employees are university graduates.**

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R&D center CMM process improvement introduction(1)

- **R&D Center works on software product R&D such as industry automatization, enterprise informationlization, intelligent transportation, network security and company and company level basic middle tier and etc.**
- **Before process improvement activities started, the department set up 3 product development groups (industry automatization, enterprise informationlization, intelligent transportation) and an independent test group**
- **Since CMM process improvement work was implemented in 2001, quality assurance group (SQA), configuration management group (SCM), process improvement group (SEPG) and training group were established**

R&D center CMM process improvement introduction(2)

- **Involved in the improvement process, total employee number is 54; total projects number is 12; 5 projects were included in the final assessment; total number of projects involved in CMM pre-assessment and formal assessment is 10; 27 members involved in formal assessment questionnaire and interview, a 50% of the total staff members.**
- **January, 2003, R&D center accomplished CMM level 3 assessment**

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The major content of consulting activities

- **Provide CMM basic knowledge training**
- **Establish SQA group and provide related training**
- **According to CMM level 2 and level 3 key process area, diagnose the weakness and strength of the original processes and develop process improvement plan**
- **Help the organization in defining processes, selecting pilot project to use new processes, and transfer the stable process to the whole organization**

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The problems existed before CMM process improvement

- Project schedule can't be estimated in a scientific way, usually schedule estimate based on experience, and the deviation is big, project is more risky
- Training quality is poor, bad training result, staff has a low spirit to attend training. It takes longer for a new employee really involved in the organization
- Lack of CMM concept, no experience in process improvement, don't know where to start and how to start process improvement work
- Staff member has a low spirit to attend process improvement work
- Lack of project management tool
- How to make ISO standard and CMM standard live together effectively

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Improvement action plan(1)

- MS Project is used as project planning and tracking tool, and an organizational level estimate procedure is developed, WBS method is applied to estimate cost, schedule and effort.
- Training course is reorganized, and organizational level training procedure and plan are developed, periodic training is arranged by an assigned person based on training request proposed in the organization
- With the help of consulting company who provides training and local consultant support, CMM concept and methods is introduced quickly, and a independent SEPG group is responsible for implementing improvement

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Improvement action plan(2)

- SEPG group identified the gaps between current process and CMM level 3 during the process improvement process, and focused on the improvement of weakness while obey the principle of not adding extra effort to project, and periodically reported improvement work so staff can learn about the result of improvement
- Self-developed process database PDS, as a process management tool, provided a good a support for CMM improvement work
- ISO internal assessor join SEPG group to make sure ISO and CMM is compatible in the process of improvement

The compatibility between ISO and CMM

- **If organization has already achieved ISO quality system requirements, then it's easier to implement CMM process improvement work. However, in order to avoid conflict with the set standard of ISO during improvement process, the affected individual and group should know ISO related regulation very well before developing or revising current processes. And, try to use existing ISO management document as much as possible in the new procedure. The newly developed or revised process should be reviewed by an ISO expert**

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Benefit——schedule estimate

schedule deviation

deviation rate(%)

time   release estimate procedure
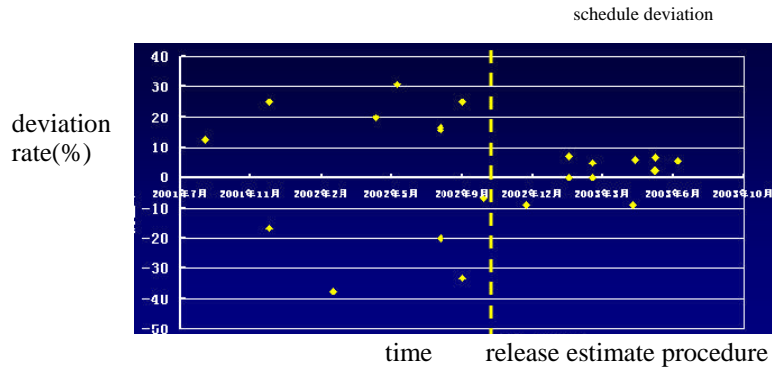
- **Stat. tool：BS PDS Baosight software process database system BS PDS**
- **Scope ：from July 2001 to July 2003, project number is 16, account for 80% of all projects.**
- **Finding：after the release of estimation procedure, average schedule estimate deviation rate reduced 26.36%**
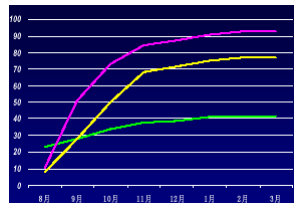

Benefit—process improvement overall statistic
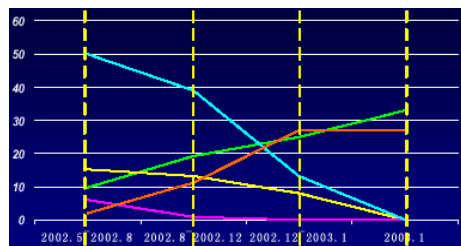
The first preassessment   the second   the third   the formal assessment
green:strength   yellow:improvement opportunity purple: weakness
blue: effort   orange: work product

- Stat.tool：MS Project
- scope：May, 2002 to Jan. 2003, 67% of the total project period, calculated by four stages of process improvement
- finding：as process improvement work is being implemented, SEPG effort gradually reduced, work products gradually increased.

- SPI schedule :165 working days
- SPI effort : 1200 working hours
- part time SEPG ：4.25 persons
- average effort/person ：1.7 hours/man day
- times of pre-assessments：3 times
- average time in between two assessment：41.25 working days/time
- consulting company on-site service times：12 times
- on-site service total efforts：7.5 working days
- training provided by consulting company ：5 times
- consulting company training days：11 working days

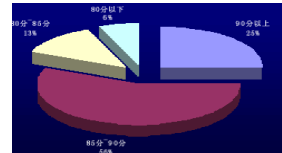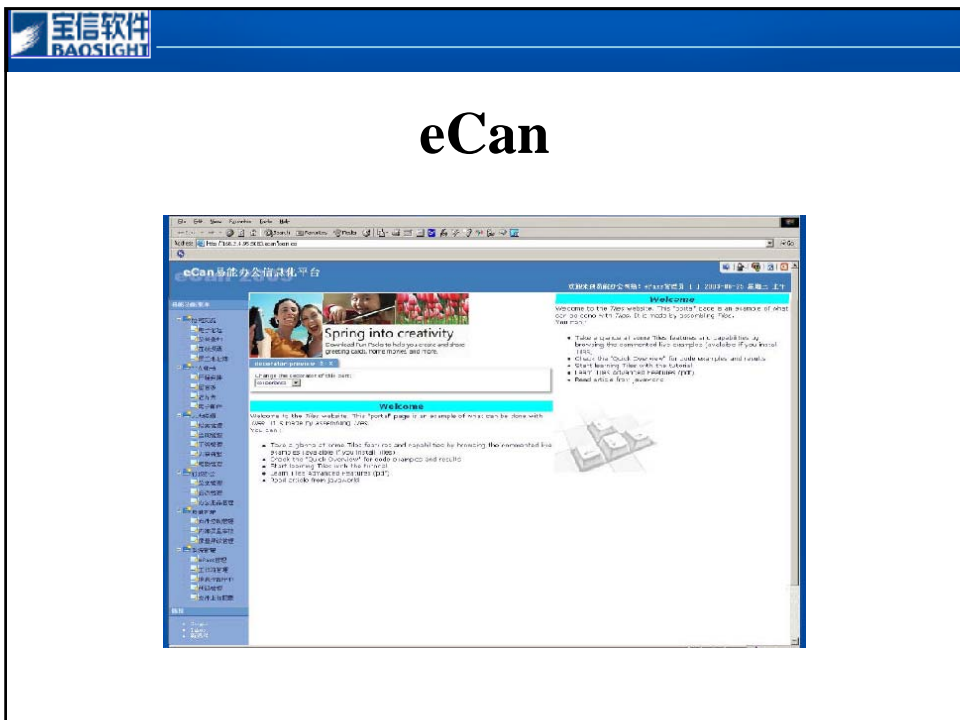# benefit——training feedback information

Training feedback

80-85 (score)	below 80	above 90
13%	6%	25%

months

85-90
56%

green: number of courses   yellow: training person-time/10
purple: training person hour/10
Stat.tool：Baosight software process datanase system BS PDS 1.0
- **scope：from August, 2002 to March 2003, statistic work is done according to monthly training times, number of people and person-time**
- **finding：as the process improvement work go on, training times, number of people and person-time increase like a parabola , all courses have sound feedback, those average score lower than 80 only account for 6%**

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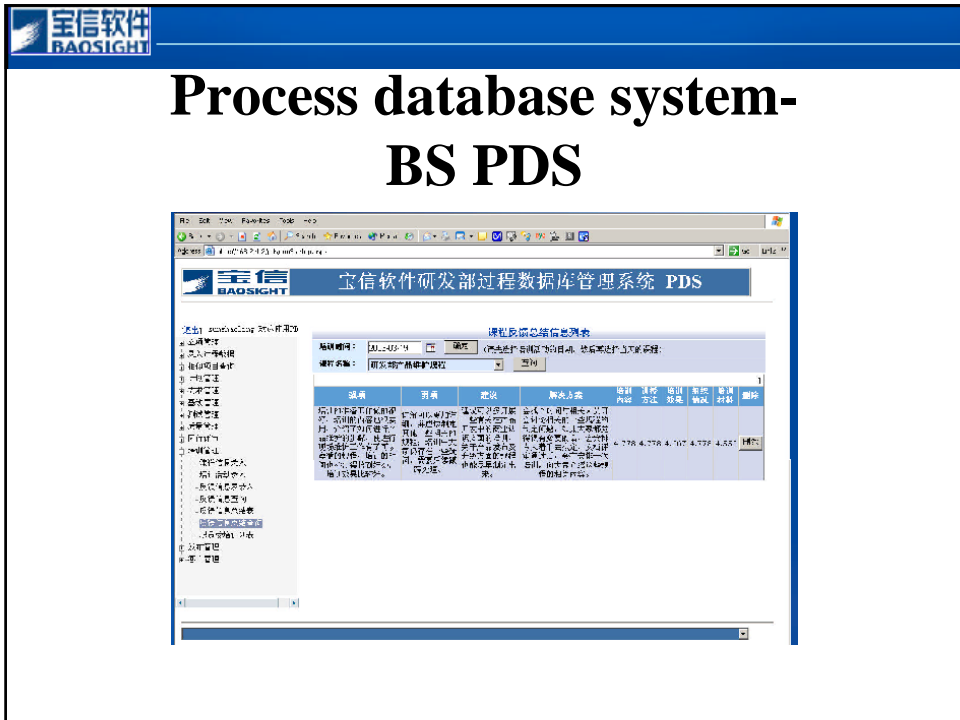- **Issue discussion**

Project management tools

- **MS Office （Visio 、 Project 、 SharePoint ）**
- **Rational （ClearCase 、 ClearQuest 、 UML ）**
- **Testing （MS ACT 、 Rational Purify ）**
- **BS PDS**
- **eCan**
- **eCop**
- **ePass**
- **LOCounter**

Process database system- BS PDS

Process database system-
BS PDS

eCan

eCop3000

ePass

LOCounter

Thank you!
Question is welcomed

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