# 300 at one blow!

modernizing a NonStop application at Elmer Dienstleistungs GmbH & Co. KG

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### 300 at one blow!

The headline relates to a fairy tale ...



### ... modernizing 300 ScreenCOBOL dialogues

# agenda

- introduction of Elmer Group
- motivation
- course of the project
  - consulting, workshops, prototyping
  - infrastructure setup
  - advanced concepts & solutions
  - implementing, testing and impressions (samples of new features)
  - [release management, if enough time]
  - next steps
- peek into the crystal ball
- conclusion



#### Elmer Group

- specialized retailer for sanitary, heating and air conditioning in Germany
- modern, mid sized and family led group of firms
- trans-regionally operating provider
- closeness to customers reflected by more than 60 distribution- and exhibition locations







# initial situation

- snapshopt of existing "Legacy" application software
  - dialogues implemented in ScreenCOBOL
  - Pathway servers implemented in COBOL
  - data sets mainly based on Enscribe
  - manual source code management, history managed via Backup

#### • findings

- software development and user interfaces definitely not "state of the art"
- integration and interaction with other IT systems critical
- modernization projects piling up

# objectives

- state of the art graphical dialogue interface
- modernized software development
- open minded about new stuff

### constraints

- modernizing embraces more than 300 ScreenCOBOL dialogues
- first modernizing step is not touching COBOL servers and not changing any interfaces

approach allows parallel operation with existing software

planned "step by step" rollout to the branches

• Elmer IT staff getting involved in software development

aiming at independant maintenance and future development of new applications

# course of the project

1. CommitWork: consulting, workshops, prototyping

# CommitWork consulting – initial topics

- customer questions:
  - rich or thin client?
  - what for is OmnivoBase?
  - Open Source Tomcat or NSJSP?
  - experiences from other projects e.g.
    - Thyssen Krupp Steel AG
    - Rasselstein GmbH

#### what for is OmivoBase? an application environment – desktop view



choose between desktop- or single window view

#### OmnivoBase – user & dialogue management

• adaptable menus, user privileges, groups, standardized groups, open window design, invoking external programs from menu, ...

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# prototyping

- a sample part of order management application was implemented at this project stage
- performance tests and -analysis were carried out by using actually available "Wyse thin clients"

# Migration effort analysis

- later, only analysis samples were taken from existing systems and existing source code was rated following a certain scoring
- criteria included:
  - amount of lines of code
  - amount of fields to display
  - portion of business logic / plausibility
  - amount of server calls
  - amount of calls to sub-dialogues
- analysis findings:
  - Min:
  - Max:
  - Average:

- 7 hours per dialogue
- 16 hours per dialogue
  - 9 hours per dialogue





# infrastructure

- hardware:
  - NonStop NS2000 with NonStop OS release J06.09
  - installing virtual SuSE Enterprise Server for CVS, Nexus & Jira
- software:
  - CVS repository
  - Maven repository Nexus
  - Jira for project monitoring and tracking
  - Java on NonStop
  - initially Tomcat, later NSJSP
  - OmnivoBase
- Elmer staff seminars individually and along the project, covering Java, CVS, Maven, NSJSP & OmnivoBase



# modularizing

- without breaking down into modules, a monolythic construct is arising, possibly leading to a system collapse, when growing rampant
- the whole application is split up into 24 separate projects, each consisting of many modules
- by utilizing vertical partitioning, single projects out of the total application can be deployed to different NSJSP clusters (an option supported by OmnivoBase)

this kind of separation is transparent for developers and users



#### vertical partitioning of applications (high availability)



shutdown of separate application clusters for software updates is feasible (*NSJSP Cluster*)!



# implementation and testing

- Elmer IT implemented appr. 125 dialogues and CommitWork took appr. 175 dialogues
- state of the art tools like JIRA were utilized to cover project-, task- and error management
- migration of dialogues very close to "old" dialogues in some cases combining dialogues or implementing ergonomic enhancements

### "300 at one blow!" - code conversion in a very short time



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# ScreenCOBOL-Inspector – generated view

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# ScreenCOBOL-Code – CDS from Commitwork

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**CommitWork** 

### Java code - 1:1 manual conversion



#### CommitWork

# this finished dialogue

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# **OmnivoScreenCOBOL & OmnivoSwing**

- OmnivoScreenCOBOL Wizard:
  - generating view classes from ScreenCOBOL screens

utilizing OmnivoSwing elements for user interface design

- generating code fragments for behavior classes
- OmnivoSwing
  - based on Java Swing; currently containing 79 classes
  - enhanced functionality:
    - binding to transport objects
    - validation
    - data mapping and conversion



# intermediate conclusion OmnnivoScreenCOBOL & OmnivoSwing

- sticking to planned efforts by utilizing OmnivoScreenCOBOL & OmnivoSwing
- till today no generators avaiable, providing maintainable, object oriented Java code from ScreenCOBOL code

only views, validations and bindings are generated

everything else is coded manually

source code therefore maintainable and ready for enhancements

developers get along well with the new Java source code!

• some impressions ...

# impressions

 new design elements like "input date" field



 dialogue selection for input fields



pop up menu: selection list



other design elements



#### **Commit Work**

# impressions (2)

• validation, error messages, ...

Name1		j	
Name2	Geben Sie bitte 'Name1' der Lieferanschrift ein! 'KEIN	IE' wenn nich	t bekannt!
Cfr			CIO/

• pop up menu for presenting history of messages

<u>A</u> nzeigen <u>N</u> eu <u>L</u> ieferadress
13:25:43: Geben Sie bitte 'Name1' der Lieferanschrift ein! 'KEINE' wenn nicht bekannt!
13:25:41: Angebot kann angelegt werden> Neu (ALT + N)
13:25:41: KUNDE IST NICHT VORHANDEN
13:24:14: Geben Sie bitte 'Name1' der Lieferanschrift ein! 'KEINE' wenn nicht bekannt!
13:24:12: Angebot kann angelegt werden> Neu (ALT + N)
13:24:12: KUNDE IST NICHT VORHANDEN
13:24:09: Angebot kann angelegt werden> Neu (ALT + N)
13:24:09: KUNDE IST NICHT VORHANDEN
13:23:56: Es ist kein Kunde übernommen worden
13:23:32: BITTE ELMER-KUNDEN-KONTO BENUTZEN



# impressions (3)

 dialogue sequences as tab pages no field changes allowed, but fields are visible!

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# impressions (4)

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# impressions (5)

compared to ScreenCOBOL, more table entries can be listed and processed

additionally available are sorting, filtering and different column selections

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#### **CommitWork**



# introducing a new Release Management

- current versioning products used in parallel:
  - Maven's release management works with libraries

different versions are filed in POM files

distinguishes between "Snapshot" and real "Release"

- CVS' release management allows assigning "Release Tags"
   also development in parallel is feasible (so called "Branches")
- OmnivoBase provides client- & server version checking
  - Major Release interface changes force new Major Release
  - Minor Release other changes

# introducing a new Release Management

- the finally selected release management covers every kind of versioning and is focused at:
  - development
  - acceptance
  - production
- to avoid interferences between enhancements and bug fixing for later, there is a distinction between hot fixes for production (CVS Branch) and application enhancements (CVS HEAD)



• decision for deployment of Terminal Servers

optimizing software distribution, currently based upon Java Webstart

• followed by a step by step rollout to the 60 locations of Elmer Group



### peek into the crystal ball

- migrating database from Enscribe to SQL
- coupling and integrating application to other systems
- modernizing services as pure Java servers
- introducing Java based reports (Jasper Reports)
- adapting to TAPI interfaces

• ...



### peek into the crystal ball

#### open for most everything





### requirements accomplished

- modern graphical dialogue interface
  - enhanced user management
  - enhanced management of user privileges
  - higher comfort using dialogues and dialogue flow
- accomplished by:
  - OmnivoBase: user control, user privileges, menu
    - very granular user privileges user can only get access to dedicated dialogues
  - utilizing OmnivoSwing
  - enhancements:
    - buttons instead of function keys
    - utilizing new GUI elements
    - dialogue flow using "Tab Cards", online HELP functions, HELP dialogues,...

# requirements accomplished (2)

- modernizing software development
  - COBOL development using modern IDE
  - source code control using repository (also for COBOL)
  - enhanced release management
- accomplished by:
  - CommitWork Developer Suite (CDS COBOL)
  - using CVS within CDS (revision proof source code management)
  - new release management concept by using CVS, Maven and OmnivoBase



# requirements accomplished (3)

- open for new stuff
  - integration in interactions with other systems
  - modernizing server software
  - utilizing state of the art extensions, available in a Java environment
- accomplished by:
  - various features of a Java environment
    - web services
    - EJB
    - access to remote databases via JDBC deploying OmnivoBridge, ...
  - pure Java migration of existing services
  - utilizing commercial and "Open Source" Java 3rd party products

# additional enhancements

- vertical partitioning (by modularizing) allows almost seamless growth of applications – no limits
- OmnivoBase's architecture ensures full investment protection, allowing to simply exchange middleware products

existing customers already changed middleware environments easily:

- $\text{ CORBA} \rightarrow \text{NSJSP}$
- Oracle WebLogic (previously BEA)  $\rightarrow$  NSJSP
- project management using JIRA

### q&a



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