Getting started with Embedded Windows
An introduction into WinKitLE

http://www.consultingwerk.de/winkitle/

Mike Fechner, Director, Consultingwerk Ltd.
mike.fechner@consultingwerk.de
Marko Rüterbories, Consultant, Consultingwerk Ltd.
marko.rueterbories@consultingwerk.de
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Consultingwerk Ltd.

- Independent IT consulting organization
- Focusing on **OpenEdge** and **.NET**
- Located in Cologne, Germany
- Vendor of tools and consulting programs
- 21 years of Progress experience (V5 … V10)
- GUI for .NET early adaptor (since 10/2006)
- Just started with iPhone/iPad app development

Consultingwerk Ltd.

- Customers in Germany, Europe, USA
- Working with small to large Progress Partners and direct end users
- Supporting some of the largest Progress Partners in Germany, Belgium, The Netherlands, Austria and UK with application modernization and user interface technologies
- Network of partnering consultants, like ic4b for Web UI's, Whitestar Software, DBAppraise

Solutions for the OpenEdge GUI for .NET

- **WinKit**
- SmartComponent Library
- Dynamics4.NET

- Tools can be used together or separately
- Share common code base

Agenda

- Overview OpenEdge GUI for .NET
- Adoption challenges
- Adoption strategies using WinKit
- WinKit Features
- Customer Examples
- Hands-On Labs

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OpenEdge GUI for .NET

A Microsoft® .NET™ based Windows graphical user interface that can replace or be integrated into an existing OpenEdge GUI application

OpenEdge GUI for .NET

- State-of-the-art UI on the Windows desktop
- Integrated feature of OpenEdge 10.2A and 10.2B
- Supported by both GUI clients
  - fat client, prowin32.exe
  - WebClient
- No separate license required
  - Deployment
  - Development
- Access and use any .NET control

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Adoption Challenges

- Need to support pre-10.2A users as well
- Not every Progress partner has SCM strategy that supports parallel development on two versions of the same application
- Thousands of existing screens
  - Progress isn't used to build small applications
- Many Progress applications haven't adopted latest language features at all

Adoption Challenges

- Training requirements
  - OO fundamentals (new programming paradigm)
  - .NET fundamentals
  - Infragistics controls (or any other vendor)
  - OpenEdge 10.0: ProDatasets etc.
- New tool: OpenEdge Architect

Adoption Challenges

- How much modernization is possible without a rewrite?
- What are our architecture requirements?
- Where's a reference implementation of that new target architecture?
- Our application depends on a tailored framework and templates – how can we migrate that framework?

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GUI for .NET adoption using WinKit

- Consultingwerk's best practice approach to GUI for .NET adoption
- WinKit is based on Embedded Windows
- ABL Windows embedded into .NET Forms
- Core feature of OpenEdge 10.2A and 10.2B
- Contents of Window will be embedded into a .NET control

GUI for .NET adoption using WinKit

- Original source code used in the context of GUI for .NET
- Just minor modifications that typically remain code compatibility with previous Progress releases
- **No architectural change required**
- **Existing application framework or templates used**
- Developers may continue to use AppBuilder for maintenance of existing screens

GUI for .NET adoption using WinKit

- Original intention was mixed mode MDI
- Upgrading the appearance of ABL application by using .NET controls (menu, toolbar, Explorer bars, dockable panes, lookups with UltraGrid, …)
- Step-by-step introduction of additional (Infragistics) controls to increase users productivity
- Active X controls contained on the window are well supported (documented in K-Base)

GUI for .NET adoption using WinKit

- WinKit simplifies the integration of ABL windows into the OpenEdge GUI for .NET using
  - Enhancements to existing programs, templates and the framework using include files
  - An API / SDK that simplifies embedding and enhancing existing windows
  - Templates for GUI for .NET designs that can be adjusted to a customers demand

Demo

- WinKit Sample MDI container showing various embedding scenarios
  - AppBuilder view
  - Embedded view (runtime)
  - MDI Childs with Toolbar
  - Independent Windows with ribbons
  - Turning ADM2 Tabfolder into dockable panes
  - Overlaying ABL Browse Widget with UltraGrid control

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WinKit Features

- prebuild GUI for .NET Templates that simply embedding and enhancing of ABL Windows
- functional .NET MDI container
- integration into GUI for .NET by adding 3 include files into program windows
- very often these include files can be added to existing framework without modification of .w files
- menu and toolbar rendering to Infragistics UltraToolbarsManager

WinKit Features

- all program logic remains in the .w file (procedural code)
- .NET event handlers execute ABL triggers as needed
- ABL triggers enabled to cancel processing of .NET events like Form- or Window-Closing

Toolbar- and Ribbon Designer

- Developer utility that allows to modify the generated Infragistics menu and toolbar structures using a Visual Studio like UI Designer
- Add Images, change menu structure, use additional UltraToolbarsManager controls

- **Turn Menu and Toolbar into a Ribbon!**

WinKit Features

- Further enhancements of ABL windows, like
  - integration of DatePopups
  - replacement of selected ABL Widgets with .NET Controls
  - replacement of ABL Browse with UltraGrid
  - integration of SplitContainer, UltraTabFolder or Dockable Panes
  - changes to colors and fonts used
  - …

WinKit Migration Tool

- automated migration of ABL Windows
- based on AppBuilder, AppBuilder API
- integration of required include files
- integration of hooks into existing program logic to refresh .NET UI when required
- removes Windows Icon
- process a single file at a time or a list of files

Demo

- Order maintenance
  - ABL UI
  - Embedded, basic features
    - Toolbar and menu rendered
    - Browser replaced with UltraGrid
  - Embedded, advanced features
    - SplitContainer, UltraTab
    - Ribbon

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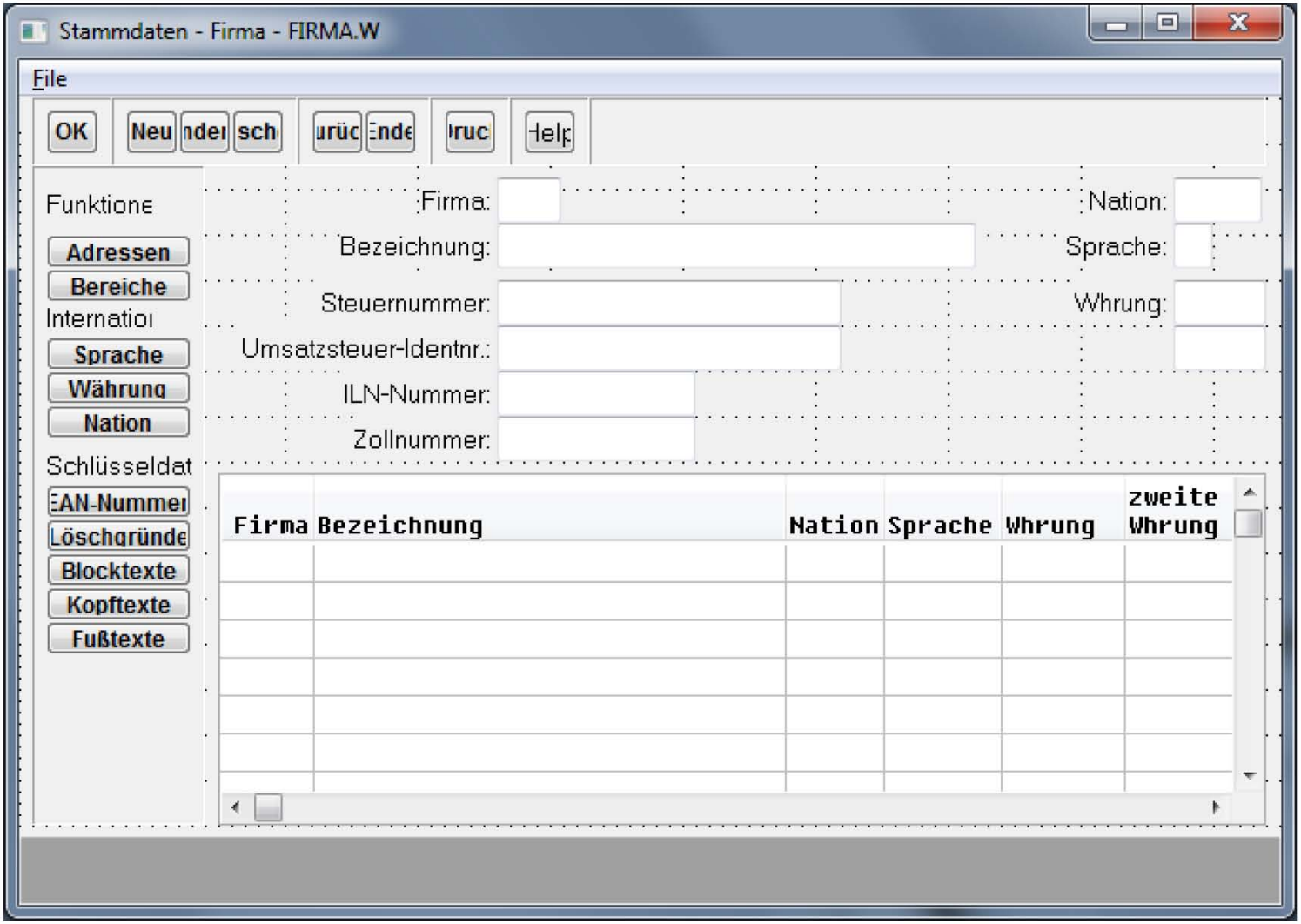
Reference I: Update Texware / Germany

- ERP for textile producers of a German Progress partner
  - AppBuilder view
  - Runtime GUI for .NET
- Own framework, developed in V7/V8
- Transition to multi-window application
- Challenge with pessimistic locking and large transactions
- 10 days of research, customization of customers framework and WinKit

Reference I : Update Texware / Germany



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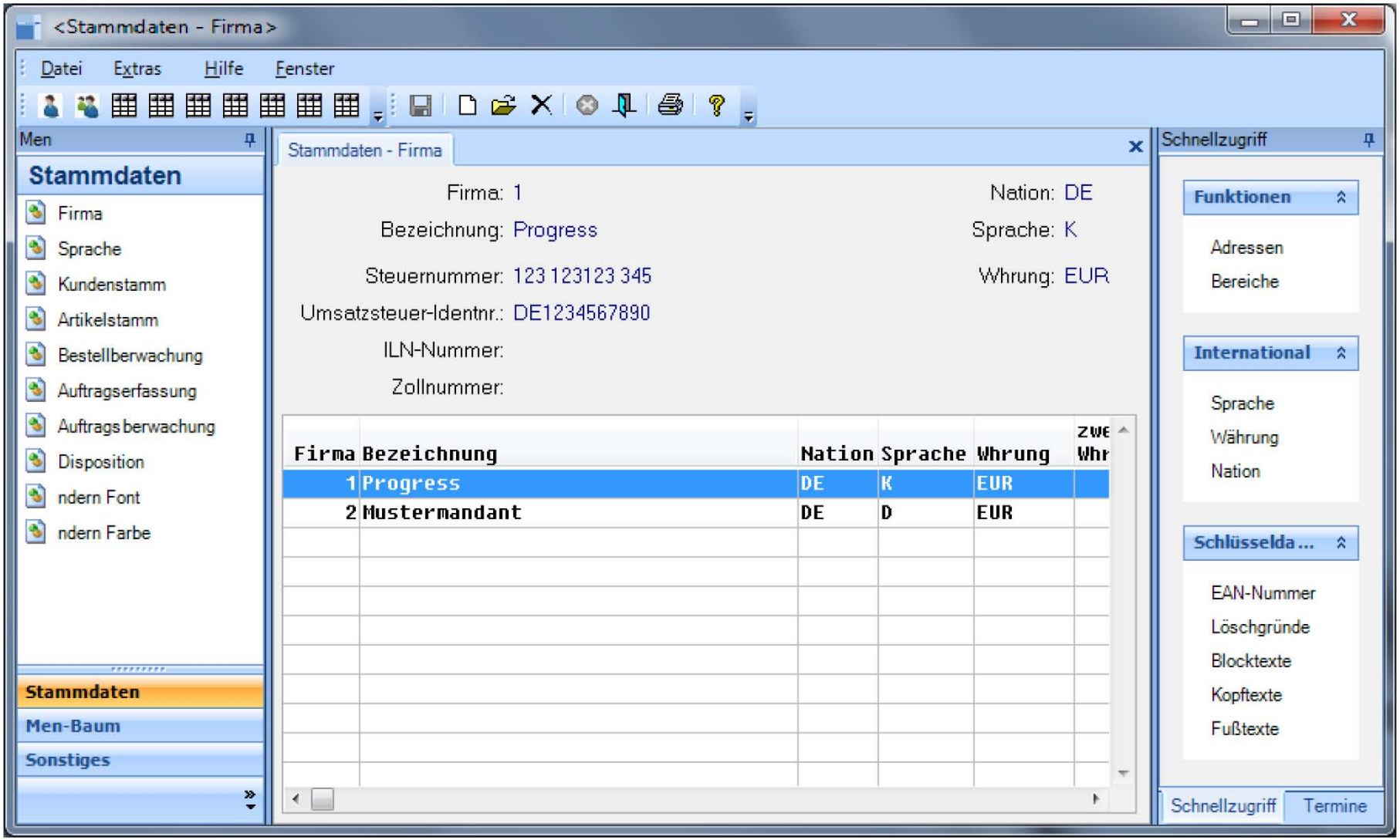

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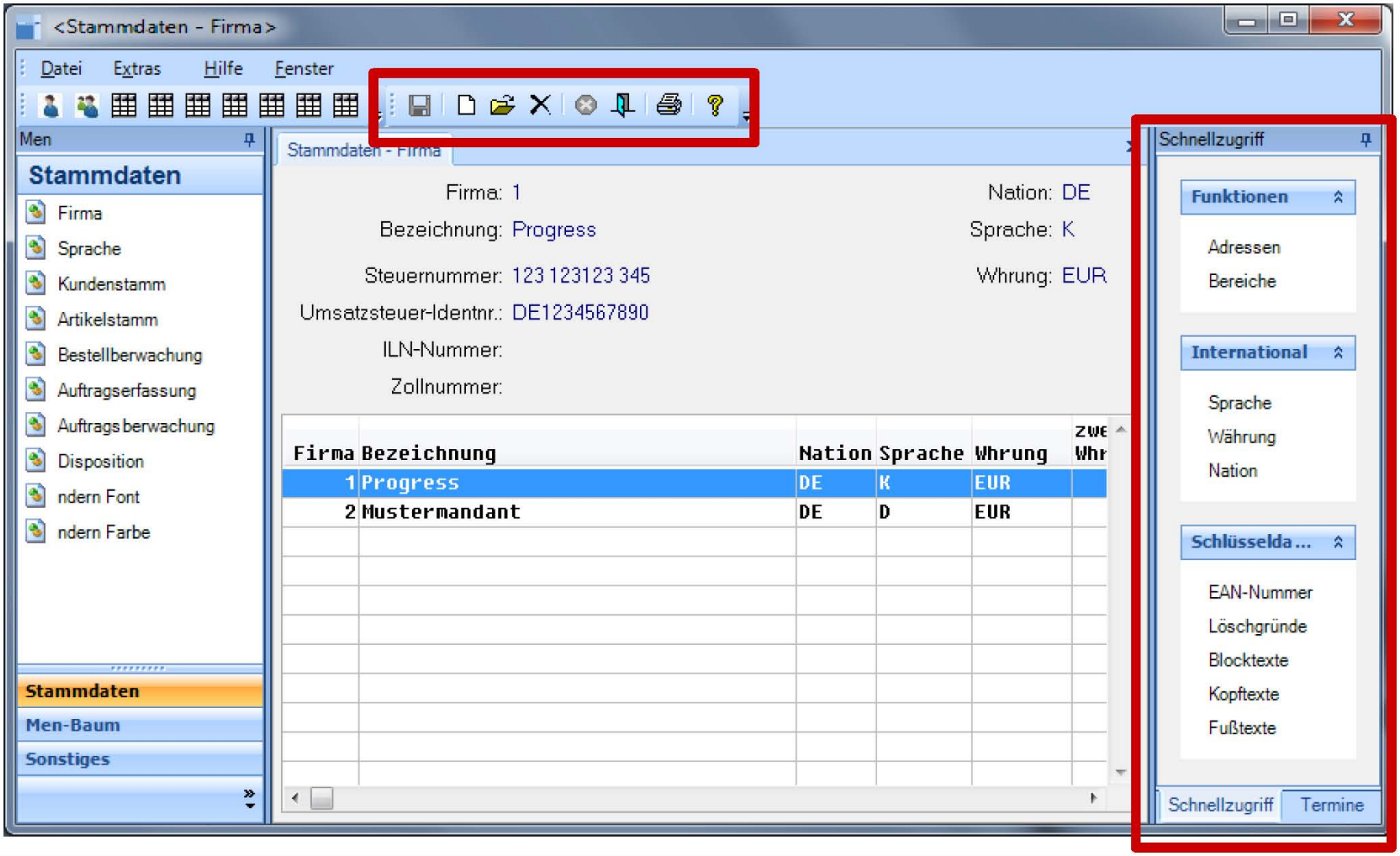


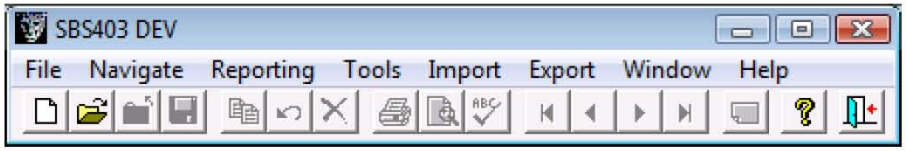
Reference I: Update Texware / Germany

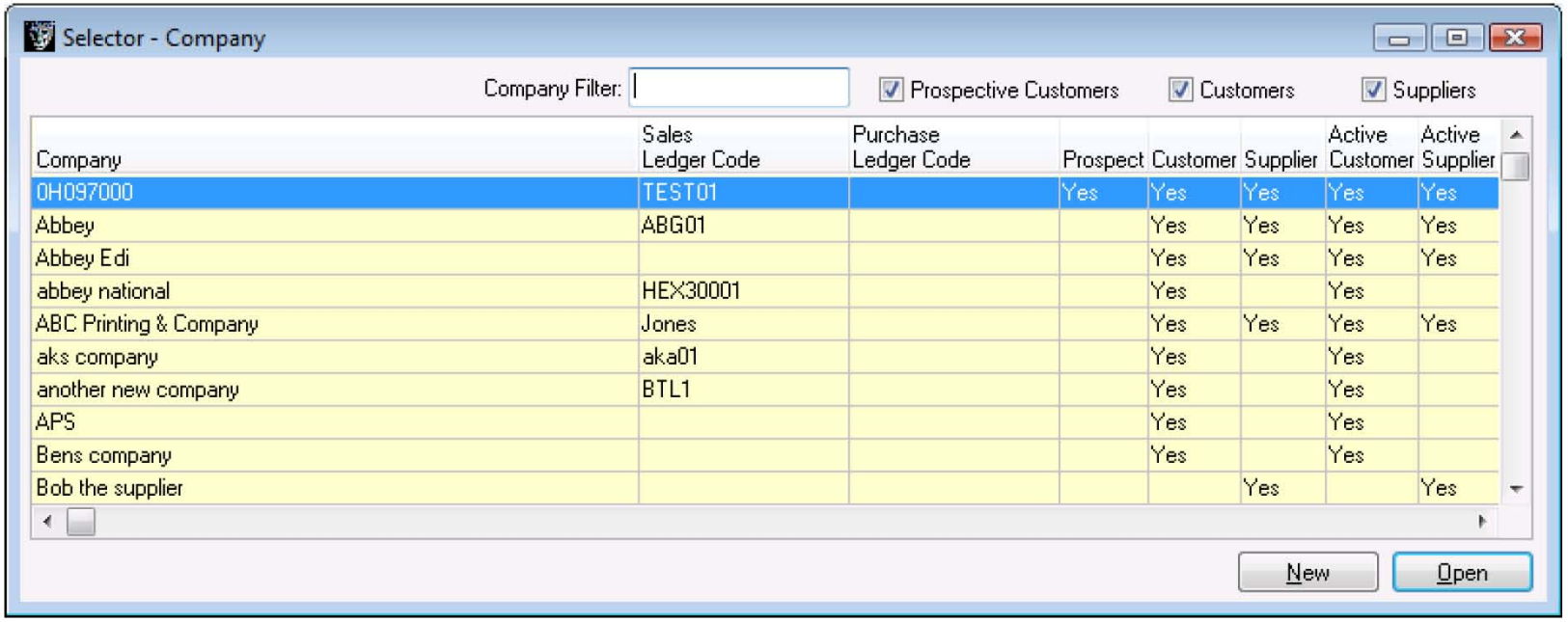
- Case study available at:
- http://www.consultingwerk.de/update-texware/

Reference II: Shuttleworth / UK

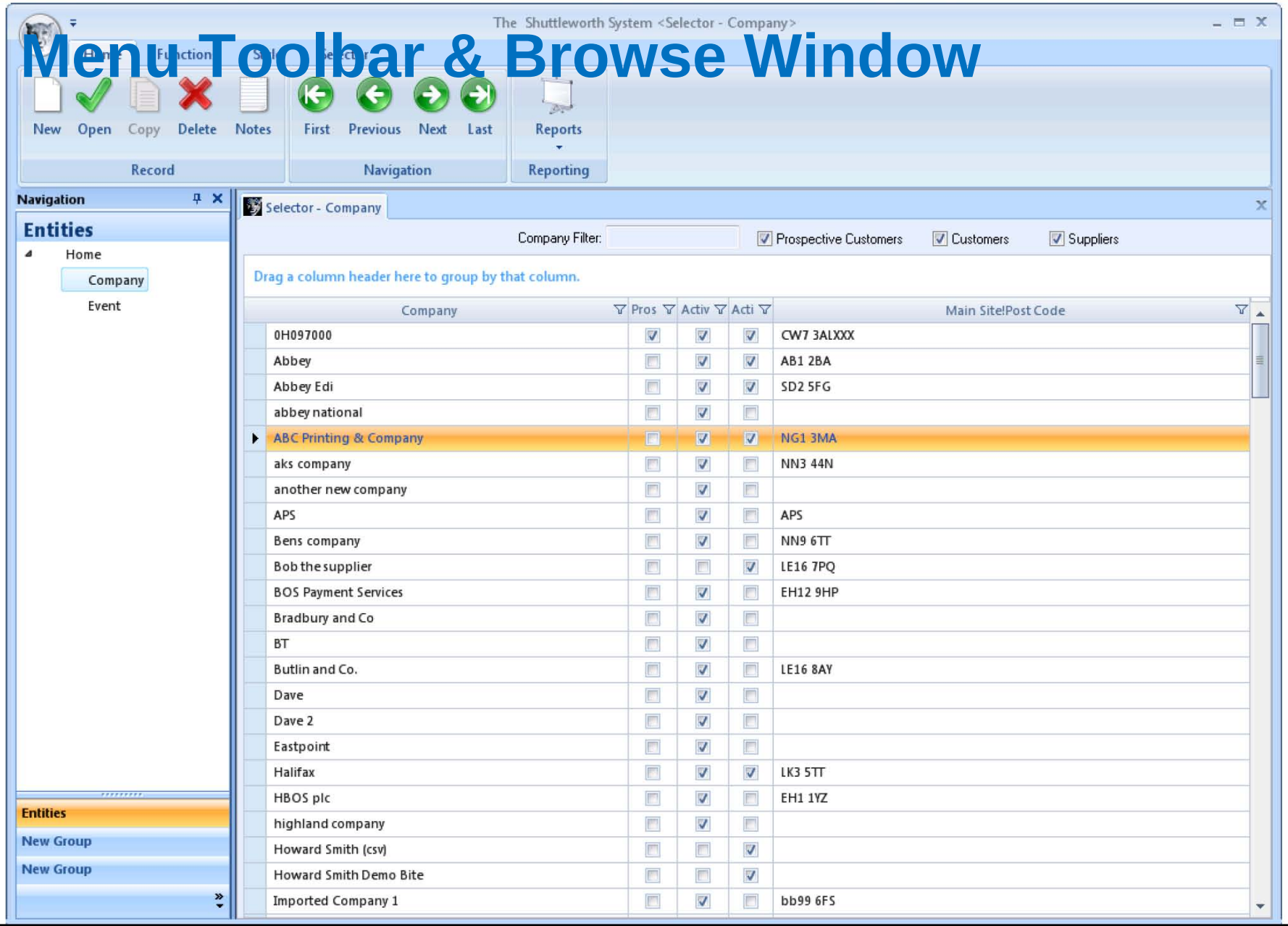
- UK-based Progress Partner
- Huge ERP system for printing industry
- V8 style framework (ADM1-like)
- Clear vision of Outlook look-and-feel
- Browse windows as MDI children
- Data windows as separate windows
  - Similar to Outlook where Emails and Appointments are opened separately
- Majority of changes in existing framework
- Minor changes to existing screens

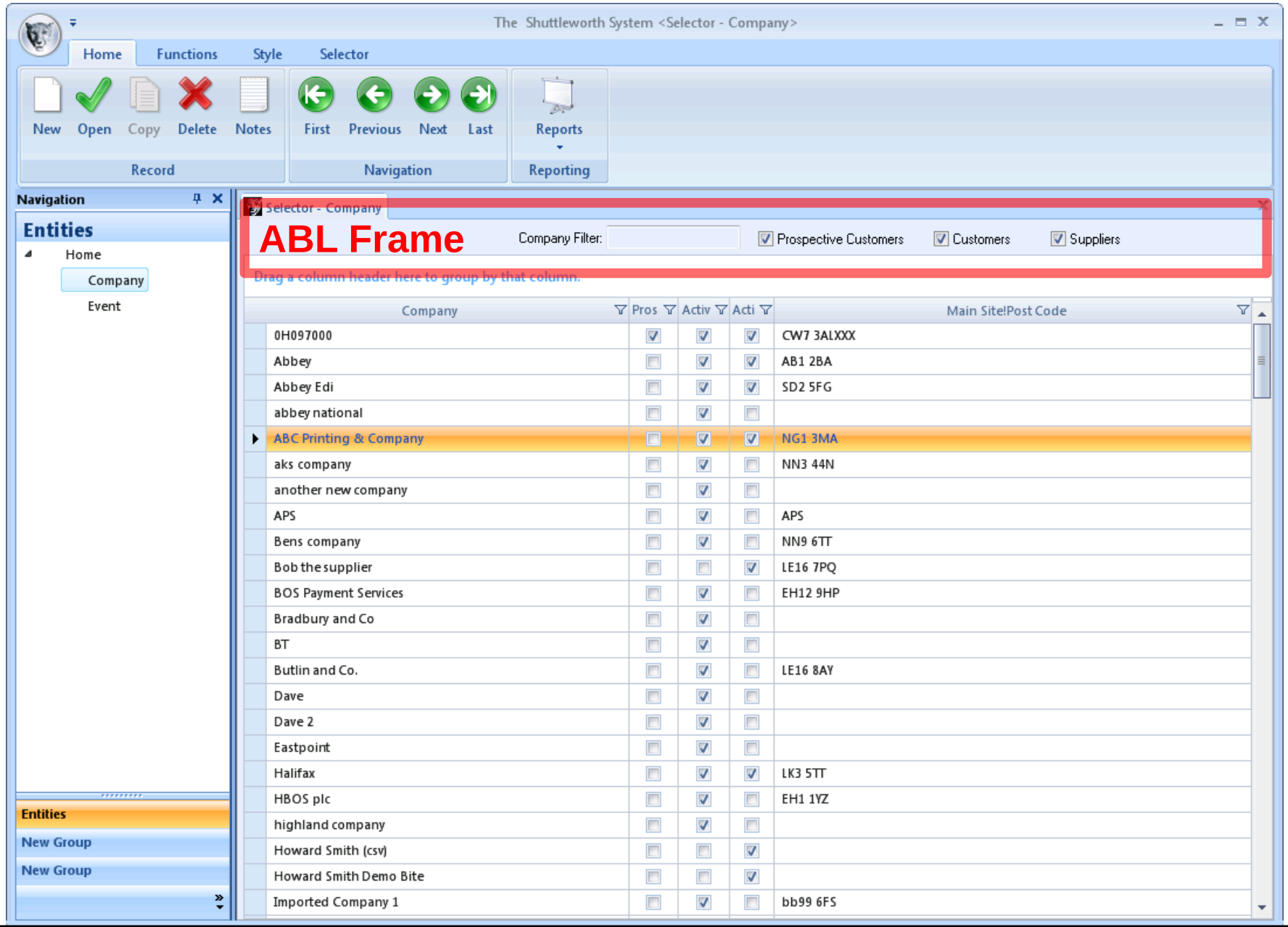
Menu Toolbar & Browse Window



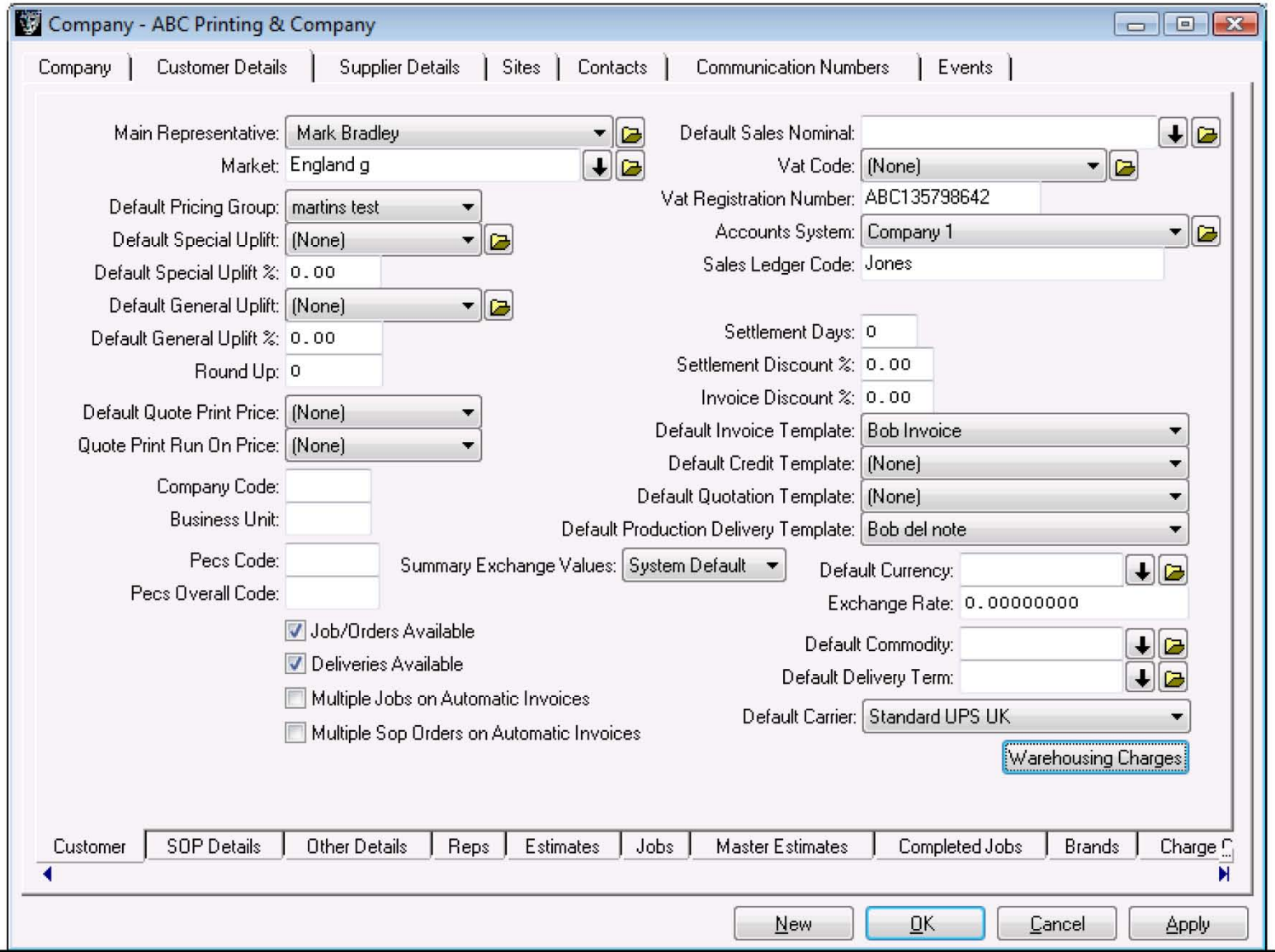


Menu Toolbar & Browse Window

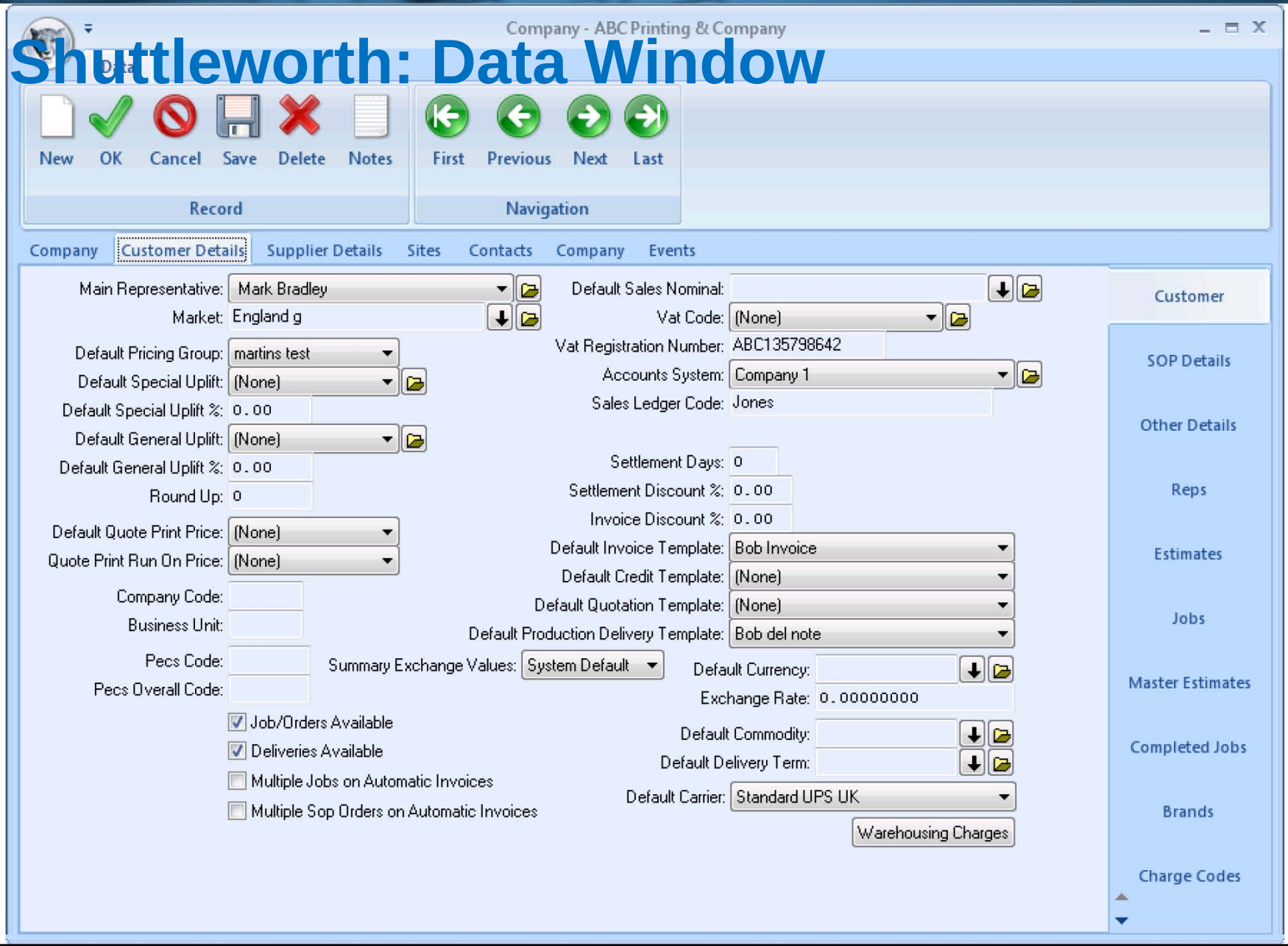



The Shuttleworth System <Selector - Company>
Home
Functions
Style
Selector
New
Open
Copy
Delete
Notes
Record
First
Previous
Next
Last
Navigation
Reports
Reporting
Navigation
Entities
Home
Company
Event
Entities
New Group
New Group
Selector - Company
ABL Frame
Company Filter:
Prospective Customers
Customers
Suppliers
Drag a column header here to group by that column.
Company
Pros
Activ
Acti
Main Site!Post Code
0H097000 CW7 3ALXXX
Abbey AB1 2BA
Abbey Edi SD2 5FG
abbey national
ABC Printing & Company NG1 3MA
aks company NN3 44N
another new company
APS APS
Bens company NN9 6TT
Bob the supplier LE16 7PQ
BOS Payment Services EH12 9HP
Bradbury and Co
BT
Butlin and Co. LE16 8AY
Dave
Dave 2
Eastpoint
Halifax LK3 5TT
HBOS plc EH1 1YZ
highland company
Howard Smith (csv)
Howard Smith Demo Bite
Imported Company 1 bb99 6FS

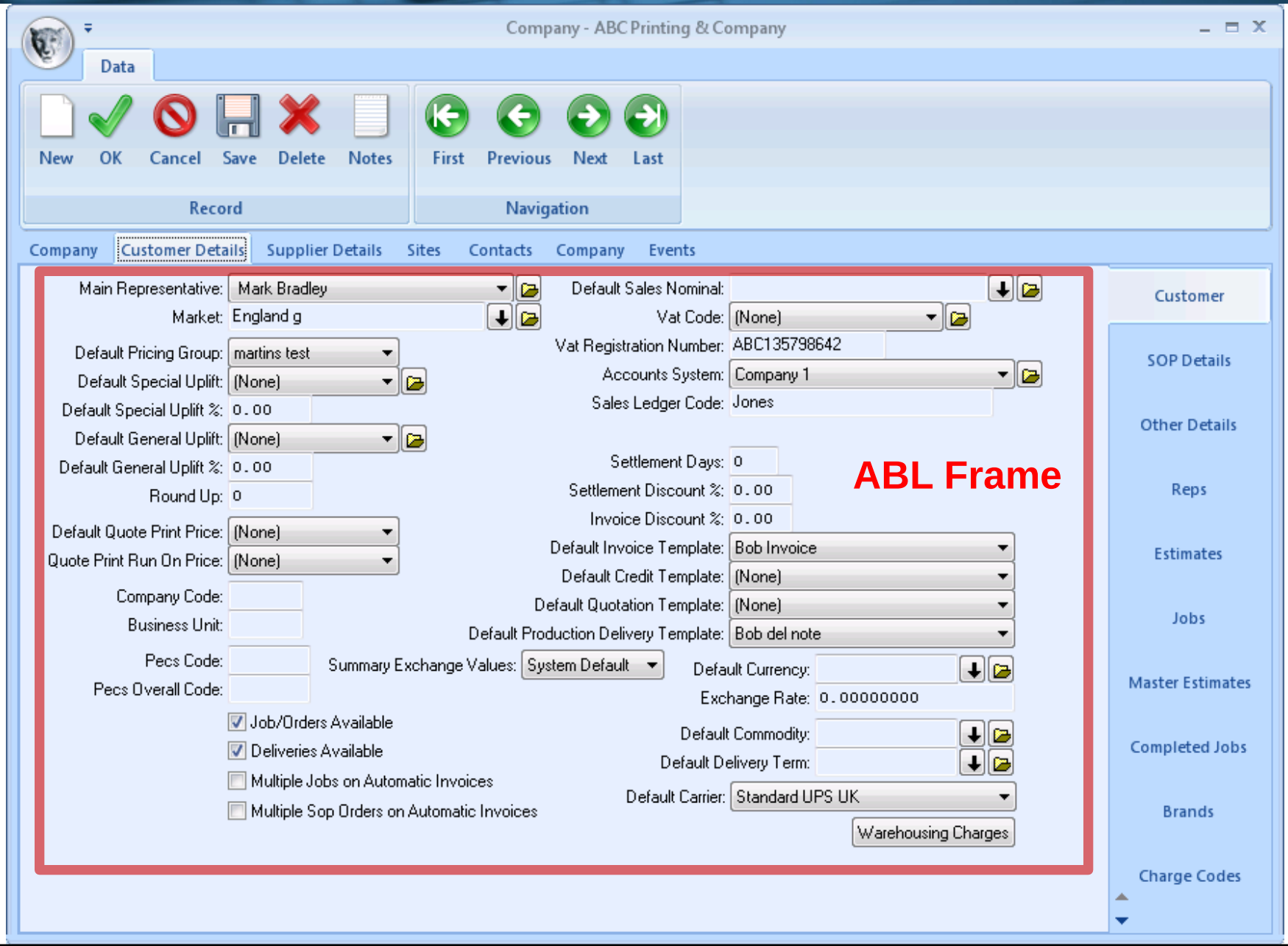
Shuttleworth: Data Window



Shuttleworth: Data Window



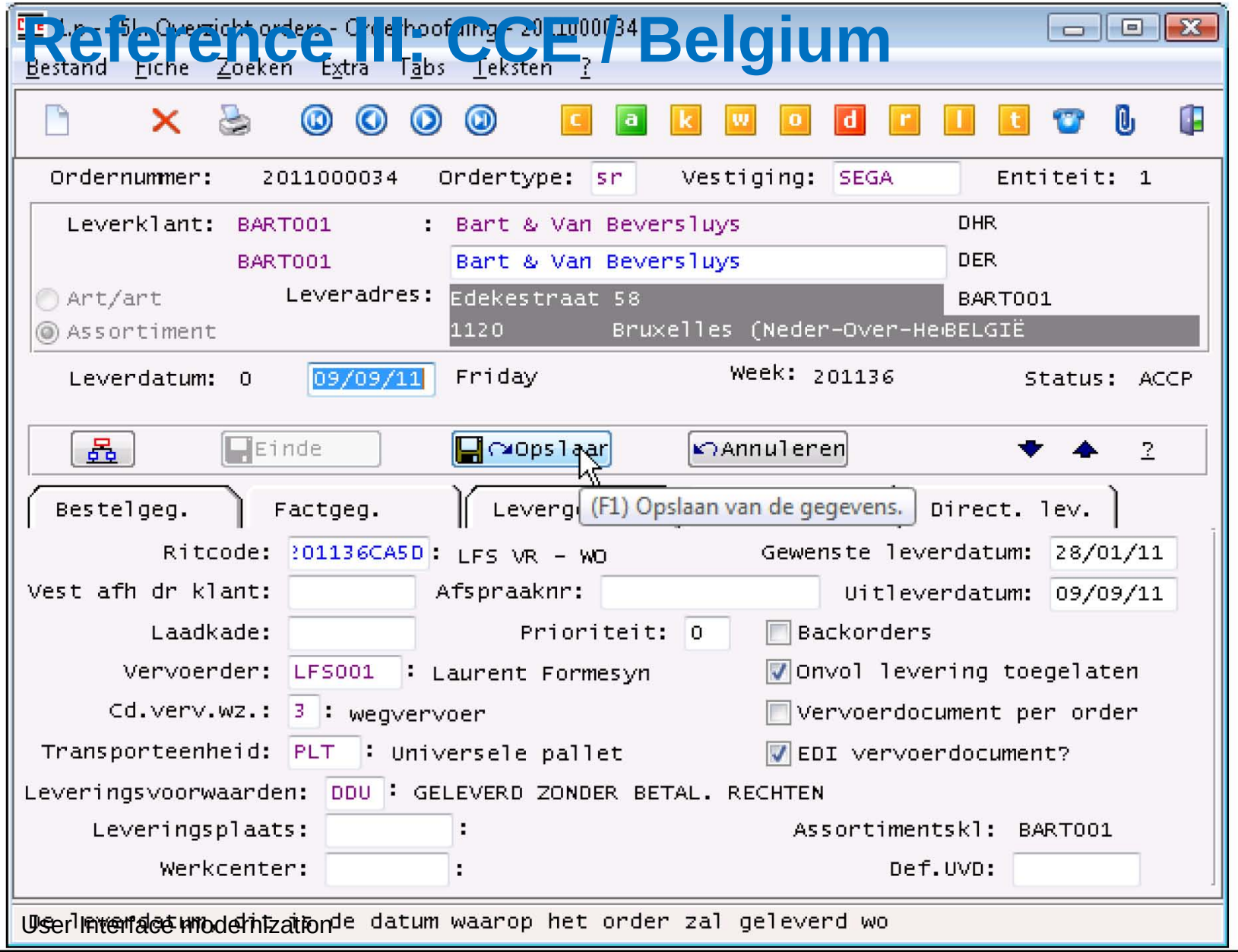
Consultingwerk
software architecture and development



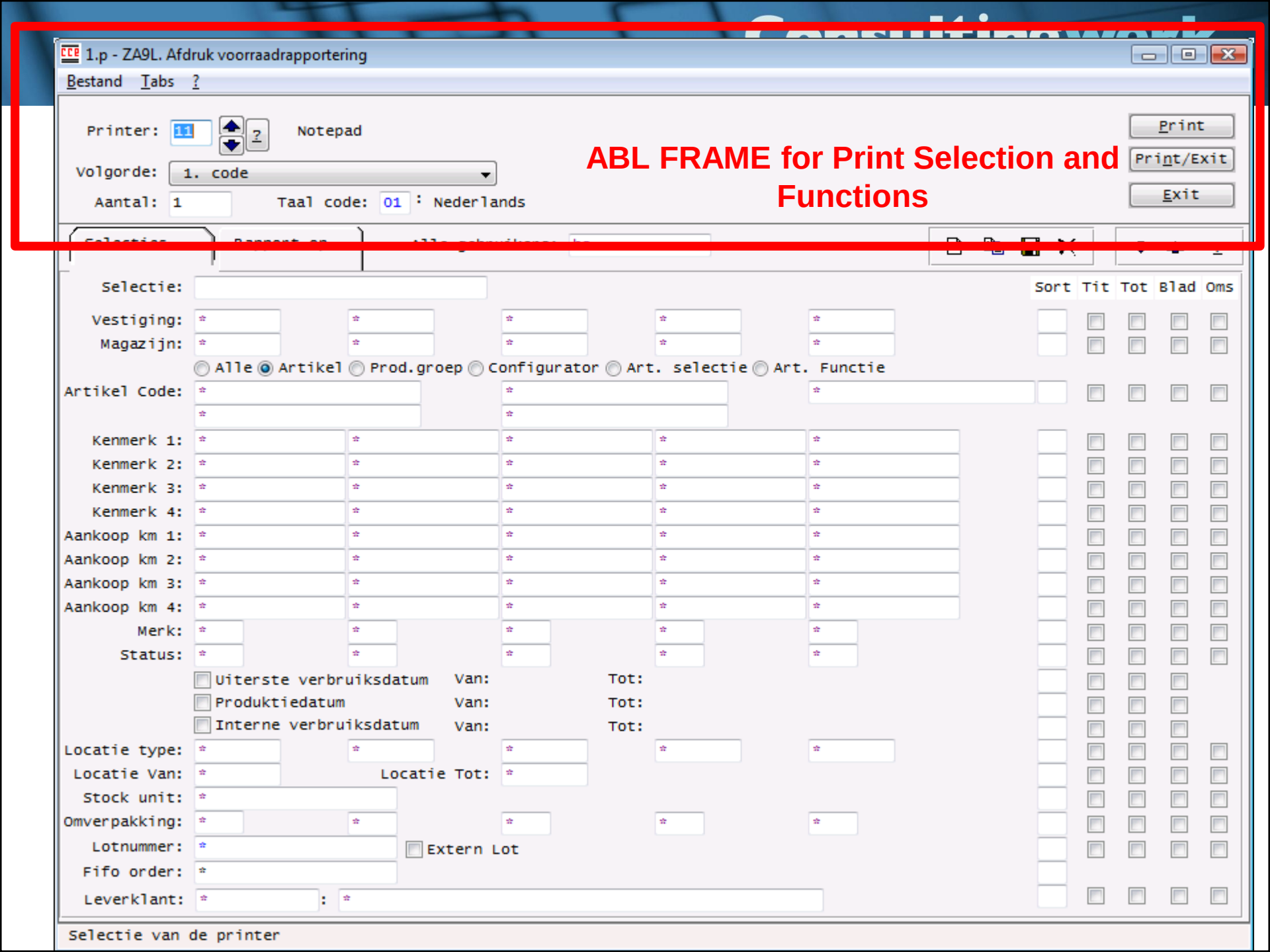
Reference III: CCE / Belgium

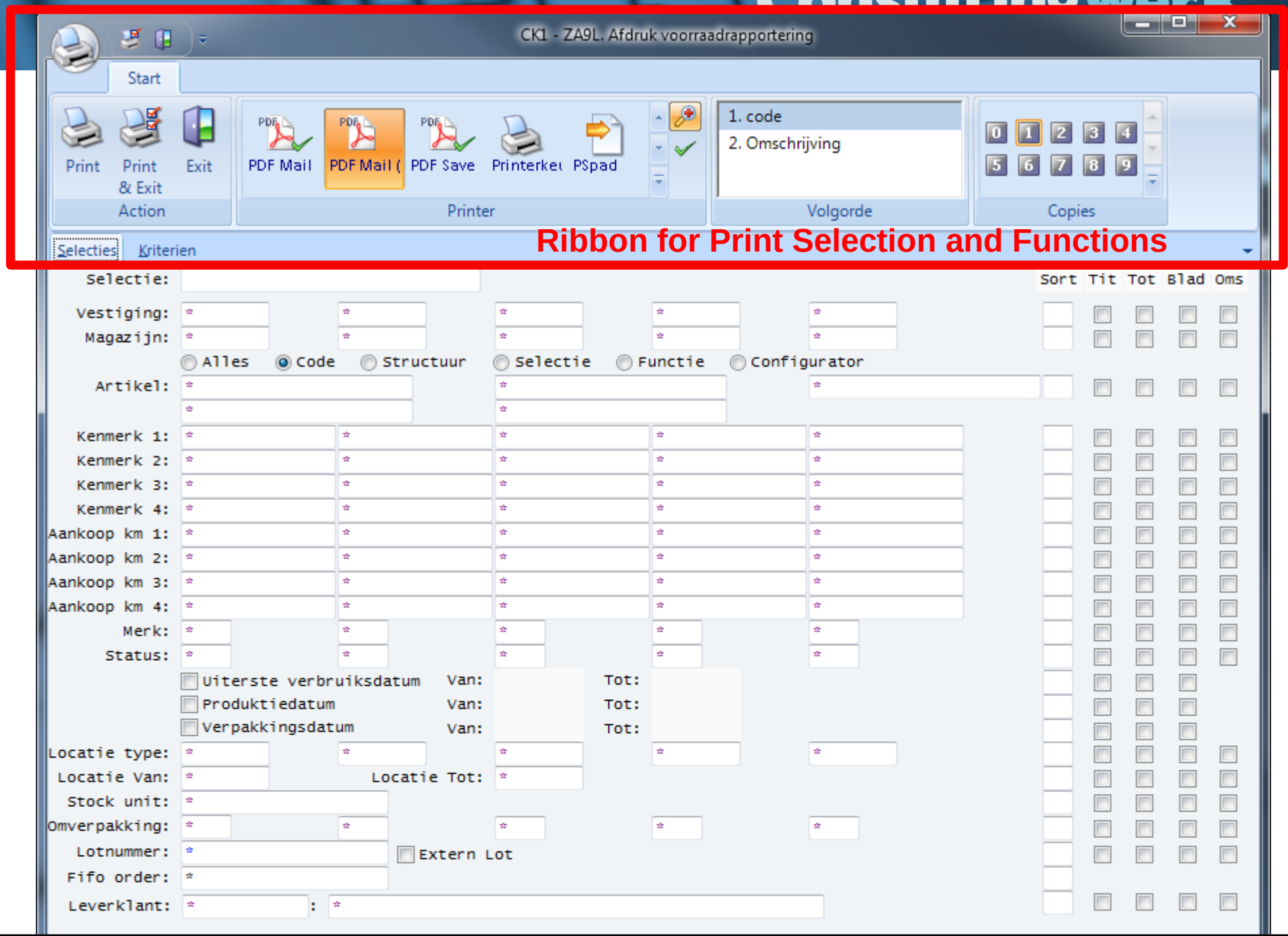
- ERP for food industry
  - before
  - after
- Own framework, developed since V8
- ADM1 elements
- WinKit as an intermediate solution
- High demands for added productivity and “demo” features

Reference III: CCE / Belgium



Reference III: CCE / Belgium


1.p - ZA9L. Afdruk voorraadrapportering
Bestand Tabs ?
Printer: 11 ? Notepad
Volgorde: 1. code
Aantal: 1 Taal code: 01 : Nederlands
Print
Print/Exit
Exit
ABL FRAME for Print Selection and Functions
Selectie:
Sort Tit Tot Blad Oms
Vestiging:
Magazijn:
Alle Artikel Prod.groep Configurator Art. selectie Art. Functie
Artikel Code:
Kenmerk 1:
Kenmerk 2:
Kenmerk 3:
Kenmerk 4:
Aankoop km 1:
Aankoop km 2:
Aankoop km 3:
Aankoop km 4:
Merk:
Status:
Uiterste verbruiksdatum Van: Tot:
Produktiedatum Van: Tot:
Interne verbruiksdatum Van: Tot:
Locatie type:
Locatie Van:
Locatie Tot:
Stock unit:
Omverpakking:
Lotnummer:
Extern Lot
Fifo order:
Leverklant:
Selectie van de printer


CK1 - ZA9L. Afdruk voorraadrapportering
Start
Print
Print & Exit
Exit
Action
PDF Mail
PDF Mail (
PDF Save
Printerkeu
PSpad
Printer
1. code
2. Omschrijving
Volgorde
0 1 2 3 4
5 6 7 8 9
Copies
Selecties
Kriterien
Ribbon for Print Selection and Functions
Selectie:
Sort Tit Tot Blad Oms
Vestiging:
Magazijn:
Alles Code Structuur Selectie Functie Configurator
Artikel:
Kenmerk 1:
Kenmerk 2:
Kenmerk 3:
Kenmerk 4:
Aankoop km 1:
Aankoop km 2:
Aankoop km 3:
Aankoop km 4:
Merk:
Status:
Uiterste verbruiksdatum Van: Tot:
Produktiedatum Van: Tot:
Verpakkingsdatum Van: Tot:
Locatie type:
Locatie Van:
Locatie Tot:
Stock unit:
Omverpakking:
Lotnummer:
Extern Lot
Fifo order:
Leverklant:

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- Refreshing Toolbars
- Color customization
- Rendering of Browsers

Running .NET Forms from ABL menus

- Requires: The (one and only) WAIT-FOR Statements needs to be .NET style
- Small modification in mainmenu.w program

```
WAIT-FOR CLOSE OF THIS-PROCEDURE .

/* .NET WAIT-FOR not associated to a .NET Form */
WAIT-FOR System.Windows.Forms.Application:Run () .

/* Use this method to terminate the WAIT-FOR, e.g
   from a WINDOW-CLOSE trigger. */
System.Windows.Forms.Application:Exit() .
```

Running .NET Forms from ABL menus

- Requires: The (one and only) WAIT-FOR Statements needs to be .NET style
- Small modification in mainmenu.w program

Replace WAIT-FOR for .NET support

```
WAIT-FOR CLOSE OF THIS-PROCEDURE .

/* .NET WAIT-FOR not associated to a .NET Form */
WAIT-FOR System.Windows.Forms.Application:Run () .

/* Use this method to terminate the WAIT-FOR, e.g
   from a WINDOW-CLOSE trigger. */
System.Windows.Forms.Application:Exit() .
```

Running .NET Forms from ABL menus

- Code of MAIN-BLOCK after implementing the .NET WAIT-FOR

```
MAIN-BLOCK:
DO ON ERROR   UNDO MAIN-BLOCK, LEAVE MAIN-BLOCK
   ON END-KEY UNDO MAIN-BLOCK, LEAVE MAIN-BLOCK:
  RUN enable_UI.
  IF NOT THIS-PROCEDURE:PERSISTENT THEN
    WAIT-FOR System.Windows.Forms.Application:RUN ().
/*     WAIT-FOR CLOSE OF THIS-PROCEDURE.*/
END.
```

Running .NET Forms from ABL menus

- Code of CLOSE Trigger to end the session

```
ON CLOSE OF THIS-PROCEDURE DO:
   RUN disable_UI.

   System.Windows.Forms.Application:Exit ().
END.
```

Running .NET Forms from ABL menus

- Hands on:
  Source converting (keep old ABL menu) (Lab 1)

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Simple embedding

- Calling an ABL window from a .NET Form
  Hands on: Lab 2.1
- Embedding ABL windows using the Progress.Windows.MdiChildForm
  Hands on: Lab 2.2
  - Create an include file (makeEmbedded.i)
  - Add the include file to the ABL window code
- Run a .NET Dialog from an ABL window
  Hands on: Lab 2.3

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Embed an ABL window using the WinKit

- List of include files supplied by the WinKit
  - src/winkit/embedwindow.i
  - src/winkit/embedfinalize.i
  - src/winkit/closewindow.i

Embed an ABL window using the WinKit

- Hands on:
  Lab 3

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Add an Icon to the .NET Form

- Set the Icon property of the oFormControl

```
PROCEDURE finalizeEmbedding :
/*------------------------------------------------------------
    Purpose:
    Notes:
------------------------------------------------------------*/

    /* Mike Fechner, Consultingwerk Ltd. 11.11.2010
       Load an Icon for the .NET Form */
    FILE-INFO:FILE-NAME = "images\window2.ico".
    IF FILE-INFO:FULL-PATHNAME > "" THEN
        oFormControl:Icon = NEW System.Drawing.Icon
                                    FILE-INFO:FULL-PATHNAME).

END PROCEDURE.
```

Add an Icon to the .NET Form

- Hands on:
  Lab 4

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Rendering of Toolbars

- Build a Toolbar from the button widgets in the first 1.5 rows of the ABL window
- Move up the window frame to hide the buttonwidgets

```
Consultingwerk.Util.UltratoolbarsHelper:BuildToolbarFromFrame
    (FRAME {&frame-name}:HANDLE,
     {&window-name}:HANDLE,
     1.5,
     oForm:ToolbarsManager).

oForm:WindowContainerRowOffset = 27.
```

Rendering of Toolbars

- Hands on:
  Lab 5

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Refreshing Toolbars

- Invoke the RefreshTools method of the UltratoolbarsHelper wherever the state of a button gets changed in code

```
FINALLY:
    Consultingwerk.Util.UltratoolbarsHelper:RefreshTools
        (oForm:ToolbarsManager) .
END FINALLY.
```

Refreshing Toolbars

- Hands on:
  Lab 6

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Color customization

- Set the background color of each frame
- Set the background color of the ABL window

```
Consultingwerk.Util.WidgetHelper:SetFrameBackgroundColor
        ({&window-name}, 33, 15, 15).

{&window-name}:BGCOLOR = 33.
```

Color customization

- Hands on:
  Lab 7

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Rendering of Browsers

- Define reference variable for the RenderedBrowseControl

```
DEFINE VARIABLE oGrid AS
 Consultingwerk.WindowIntegrationKit.Controls.RenderedBrowseControl
 NO-UNDO.
```

Rendering of Browsers

- Create the .NET control

```
oGrid =
 NEW Consultingwerk.WindowIntegrationKit.Controls.RenderedBrowseControl
                (BROWSE {&browse-name}:HANDLE,
                 oForm,
                 oForm:ClientArea,
                 FALSE,
                 THIS-PROCEDURE).
```

Rendering of Browsers

- Implement view and hide logic for the RenderedBrowseControl

```
  IF rs-show = 1 THEN DO:
       VIEW FRAME frame-a .
       HIDE FRAME frame-b .
&IF DEFINED (winkitactive) NE 0 &THEN
       IF VALID-OBJECT (oGrid) THEN
           oGrid:VISIBLE = TRUE .
&ENDIF
  END.
  ELSE DO:
       HIDE FRAME frame-a .
       VIEW FRAME frame-b .
&IF DEFINED (winkitactive) NE 0 &THEN
       IF VALID-OBJECT (oGrid) THEN
           oGrid:VISIBLE = FALSE .
&ENDIF
  END.
```

Rendering of Browsers

- Hands on:
  Lab 8

Questions

Don‘t forget to fill out your card!