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**WesBank: On the Road to SOA  
- Modernizing a Legacy  
Mainframe Application**



**ProcessForum**  
Changing the World - One Process at a Time

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**WesBank**  
We know how

**FIRSTRAND BANKING GROUP**



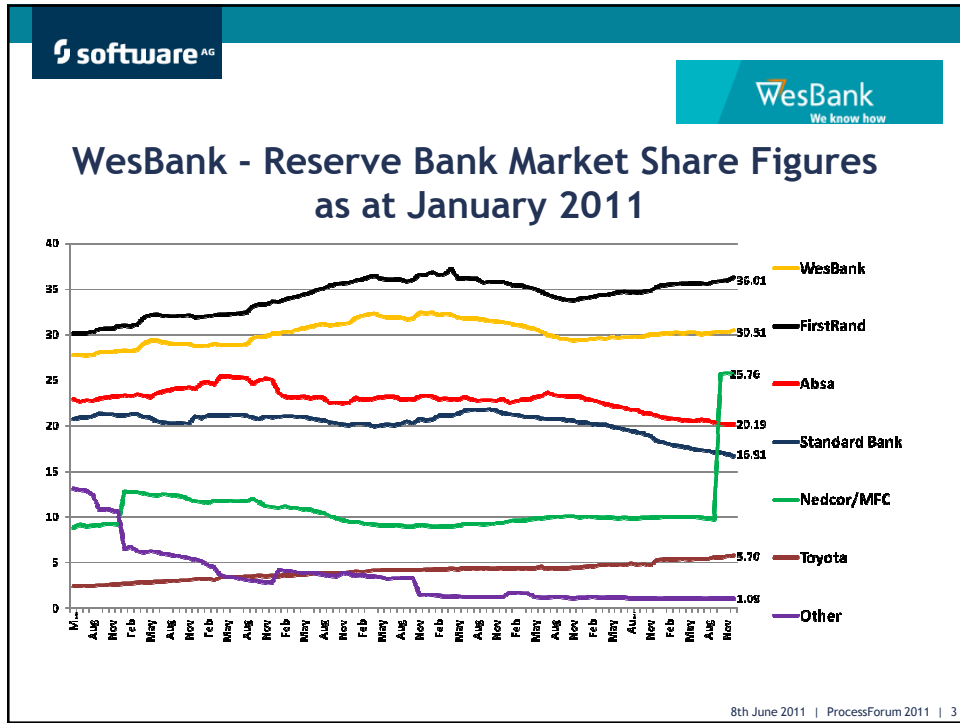
**FNB**  
First National Bank

**WesBank**

**FIRSTRAND BANK**

**RAND MERCHANT BANK**  
A division of FirstRand Bank Limited

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- 
- ### WesBank Positioning
- ▶ 95% of business done through partnerships
  - ▶ Originate using over 50 JV brands
  - ▶ Focused on retail point-of-sale
  - ▶ Strong presence in corporate asset market
  - ▶ Leading supplier of fleet cards in SA market
  - ▶ Leader in the personal loans middle market



## The Challenge



- ▶ *WesBank multiple technologies*
  - ▶ *Natural/Adabas , Oracle, Java/dot net/ etc on*
  - ▶ *Mainframe, Unix and Microsoft*
- ▶ *Unique technology challenges*
  - ▶ *Legacy Mainframe Apps - inefficiencies, redundant code, Cobol code, undocumented, report mode, etc*
  - ▶ *Design limitations - 20 year old application*
  - ▶ *Multiple disparate platforms*



## The Challenge

- ▶ *Business challenges*
  - ▶ *Contractual Self service requirements on key accounts*
  - ▶ *Business realignment and focus*
  - ▶ *Agility in solution delivery, improved turnaround time*
  - ▶ *Single view to user community, internal and external, consolidated reporting*



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## The Solution - Considerations

- ▶ *Realistic phased approach*
- ▶ *Low risk option*
- ▶ *ROI*
- ▶ *SOA building blocks*
- ▶ *Deliver business functionality based on business case*
- ▶ *Deliver immediate and long term solutions*
- ▶ *Document and govern*



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## The Solution

- ▶ *Re-host mainframe application on Linux*
- ▶ *Clean-up and optimize existing code*
- ▶ *Introduce Applinx for instant modernization*
- ▶ *Introduce Applinx/Entire X for web deployment*
- ▶ *Re-use existing functionality*
- ▶ *Consolidate functionality on different source applications back to one source*
- ▶ *New development based on SOA principles*



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## The Planned Project

- ▶ *Normal project and a very simple process, Just do it*
- ▶ *Legacy application 20+ years old on mainframe*
- ▶ *Port the database from Mainframe to Linux*
- ▶ *Convert report to structured mode (use Natural Engineer)*
- ▶ *Convert EBCDIC work files to ASCII*
- ▶ *Convert COBOL code to Natural (Code converter)*
- ▶ *Replace COBOL modules (no source) with Natural modules*
- ▶ *Change home grown Menu to ESP Menu*



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## The Planned Project

- ▶ *Change JCL to SCL on ESP Control*
- ▶ *Convert FTP to SFTP*
- ▶ *Integrate to the existing printing process*
- ▶ *Integrate to the existing email statement process*
- ▶ *Test*
- ▶ *Implement*
- ▶ *Exited customer and challenged development team*


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## The Real Project

- ▶ *Port the database - probably least challenging process*
- ▶ *Introduce Natural Engineer and convert report to structured - carried away did 1700 modules iso 170*
- ▶ *Introduce Applinx, few anomalies, but working well*
- ▶ *Convert EBCDIC to ASCII - Special characters translations*
- ▶ *Run converter and convert the code, Create the missing COBOL modules, create the new menu structure, create the new SCL from JCL*
- ▶ *All going quite well, number of challenges, and tracking well on the plan*

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## The Real Project

- ▶ *Testing commenced*
- ▶ *Sort sequences*
- ▶ *Report mode vs. structured mode - array handling*
- ▶ *Cobol conversion, missing code, code interpretation*
- ▶ *Parameter settings - Dates (D), Code Page*
- ▶ *Field increases - COBOL dropped chars, Natural aborts*
- ▶ *API interfaces between Control-M & ESP-Batch*
- ▶ *DYNAMJCL & DYNALLOC*

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## The Real Project

- ▶ *Conversion of packed values and*
- ▶ *Extensive use of binary files*
- ▶ *Compressing and uncompressing of files*
- ▶ *Knowledge of new products used - EntireX, ApplinX, NEE, SPOD, Putty, ESP Control / Batch*
- ▶ *FTP vs SFTP and SCOPY and different command sets for different platforms*
- ▶ *Access control - AD, NATSEC*



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## The Real Project

- ▶ *Technical issues: (Interpretation of commands)*
  - ▶ *Find number vs. Find Loop*
  - ▶ *Report mode vs. Structured mode*
  - ▶ *Global data not passed on setup*
  - ▶ *Stack commands not correctly converted in all instances*
  - ▶ *Multiple access to the same file*
    - ▶ *Different views*
    - ▶ *Redefinition in the wrong view*
  - ▶ *Move index not 100%*

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## The Outcome

- ▶ *Original delivery date not met*
- ▶ *Implemented successfully in February 2011*
- ▶ *Made possible by a very committed team of professionals and a business in dire need of these capabilities*
- ▶ *Stability in 1 month*
- ▶ *Established the platform to proceed on the journey*

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## Final Considerations

- ▶ *Do you really know the hidden functionality in your Legacy applications*
- ▶ *Do you know the extent of usage of Work files, utilities, interfaces, etc*
- ▶ *Require a full understanding of complexities by all parties*
- ▶ *Availability of specialised technical skills*
- ▶ *Comprehensive test runs and comparisons*
- ▶ *Well motivated and coherent team spirit*
- ▶ *We did it!*



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Thank You!