Consultingwerk
software architecture and development

SmartComponent Library

For Desktop, BPM, Cloud and Pacific

Introducing the all-purpose framework

Mike Fechner, Director, Consultingwerk Ltd.
mike.fechner@consultingwerk.de

Consultingwerk Ltd.

- Independent IT consulting organization
- Focusing on **OpenEdge** and **.NET**
- Located in Cologne, Germany
- Vendor of tools and consulting programs
- 24 years of Progress experience (V5 … OE11)
- Specialized in GUI for .NET, OO, Software Architecture Application Integration

OpenEdge® application modernization solutions

- WinKit
- **SmartComponent Library**
- Dynamics4.NET
- Tools can be used together or separately
- Share common code base
- **SmartComponents.Mobile, SmartComponents.Web**
- **SmartBPMAdapter for OpenEdge BPM/Savvion**
- **Smart Rollbase Adapter for OpenEdge**

Agenda

- Overview
- Architectural Overview
- Business Logic Design Process
- User Interface Design Process
- Progress Rollbase Integration
- SmartBPMAdapter /.Mobile / .Web
- SmartComponent Library and WinKit
- Review

Overview

- The out of the box productivity with GUI for .NET is far behind the AppBuilder
- **Successful** and **flexible** OERA implementation needs a framework that is easy to implement and that adopts to your needs
- The ***SmartComponent Library*** is our answer to a developers demand for a productive and rich design time experience when using OpenEdge GUI for .NET

Overview

- A ***Component*** is a class that provides rich design time experience in the context of a .NET Visual Designer, like the OpenEdge Architect or Progress Developer Studio

- Our components are ***Smart*** by functionality, interoperability and extensibility – at design time and runtime

Customer quote

- Previous framework: Progress Dynamics, demand to move away from Dynamics because of complexity, end of life time

  “We were excited to get started with the SmartComponent Library and expected a lot. The design, the ease of use and flexibility of the framework have exceeded our expectations by far!”

  Simon Prinsloo, Dovetail, South Africa

At a glance

- Designed to make OpenEdge developers productive
  - ***UI Design*** and ***Business Logic*** development
- Minimum to no manual code for repetitive tasks
- No constraints in GUI design capabilities
- Proven in real-world development
- Support past, current and future of OpenEdge
- ***Supporting latest OpenEdge functionality and future products …***

Agenda

- Overview
- Architectural Overview
- Business Logic Design Process
- User Interface Design Process
- Progress Rollbase Integration
- SmartBPMAdapter /.Mobile / .Web
- SmartComponent Library and WinKit
- Review

Backend Overview

- The SmartComponent Library provides a flexible OERA Backend Architecture
- Applied **O**pen**E**dge **R**eference **A**rchitecture
- Business Entities, Data Access Objects
- Business Tasks, scheduled or async processing
- Common Infrastructure Components

Business Logic reuse – write once use in:

- OpenEdge GUI for .NET
- OpenEdge GUI/TTY/Batch
- WebSpeed
- OpenEdge BPM
- OpenEdge/Pacific Mobile
- Native Mobile Applications (Xamarin Studio)
- Progress Rollbase
- Web Services
- Sonic ESB

GUI for .NET Frontend overview

- GUI for .NET client infrastructure
- Extension to OpenEdge UltraControls / Infragistics NetAdvantage for .NET Controls
- Other Control sets may be used
- Tighly Integrated into the .NET Visual Designer
  - configuration of behavior and design in a single and intuitive place
  - no restrictions to the way .NET Controls are used
  - wizards and property sheets for repetitive tasks

UI Demo

- Customer Explorer Sample application
- Customer Detail screen, Parent Child Data
- Navigating in large data sets (200.000 Customer) Dynamic Viewer Control
- Charts, Google Maps
- Various Drag and Drop operations
- Localization

Agenda

- Overview
- Architectural Overview
- Business Logic Design Process
- User Interface Design Process
- Progress Rollbase Integration
- SmartBPMAdapter /.Mobile / .Web
- SmartComponent Library and WinKit
- Review

Business Logic Design Process

- Main Business Logic Components are
  - **Business Entities**: High level business rules
  - **Data Access Objects**: Data retrieval and update
  - **Business Task objects**
- Multiple programming paradigms
  - object-oriented
  - **ProDataset based or object-relational**
  - procedural

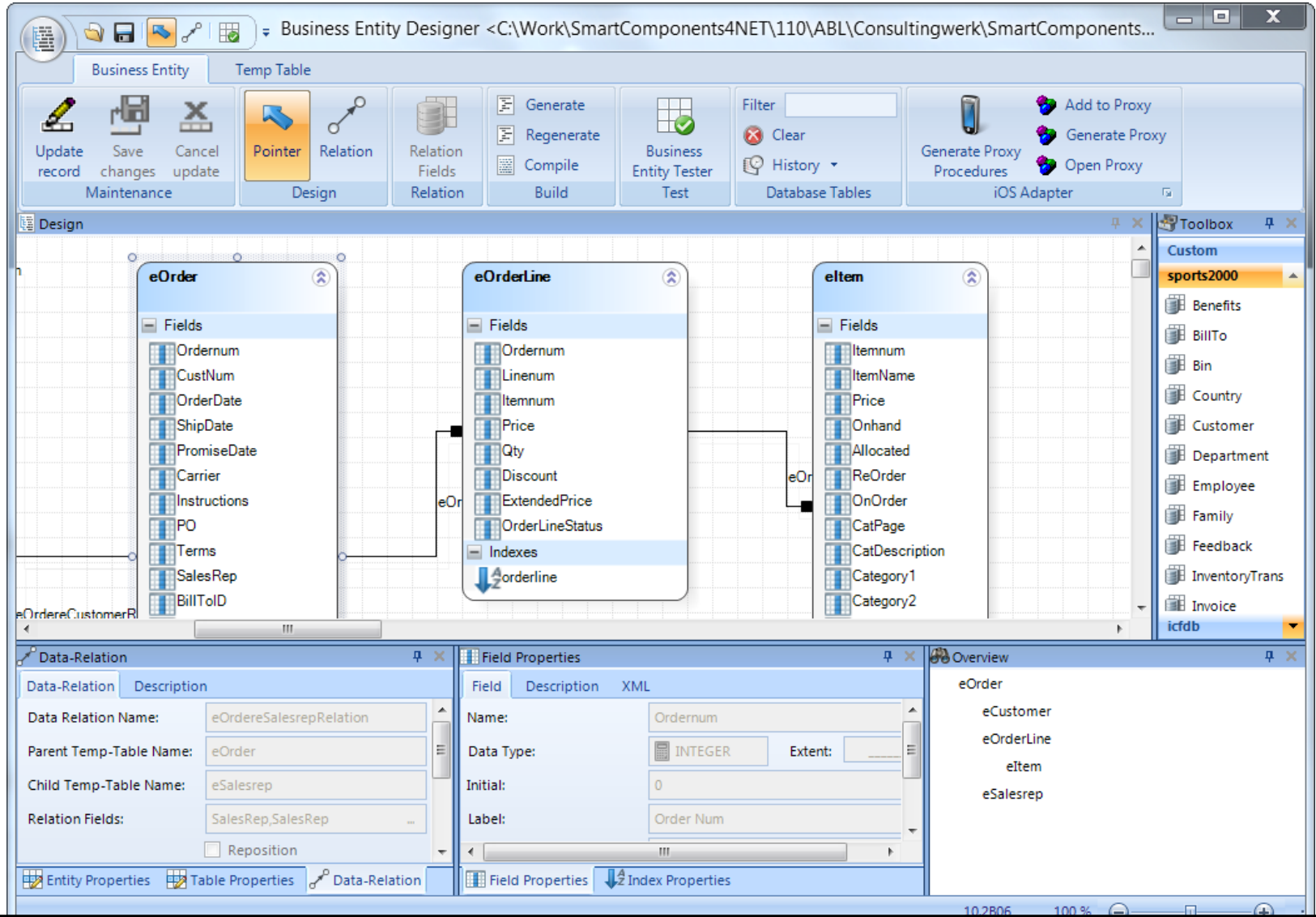
Business Logic Principles

- Built around ProDatasets or object relational
- Strong OO foundation, enhancements
- Use Data Source objects or your preferred way of populating the ProDataset
- Strict separation of layers:
  - UI design process separated from BL design process
- Business Entities are a possible foundation of Business Tasks
- ProDatasets: relational data container
- Alternative: Entity Classes or Model Classes

Business Logic Design Process

- Template based, Visual Design using Diagrams
- Flexible source code generator
  - Customizable templates
  - Customizable code generator (ABL class)
  - Plugin Infrastructure (integrate your own ABL code)
- Query custom repositories during design phase
- Ad-hoc based Business Entity Test utility

SmartComponent Library



Demo 1

- Creation of a Customer-Order-OrderLine-Item Business Entity using the Designer
- Review generated source code
- Review generated Entity Classes
- Ad-hoc Query using Business Entity Tester

Demo 2

- Query Customer using DatasetModel
- Add custom method to Business Entity
- Invoke custom method using Model Method

Demo 3

- Use Business Entity Designer to generate UI
- Open in Visual Designer
- Add to Menu Structure using Drag and Drop

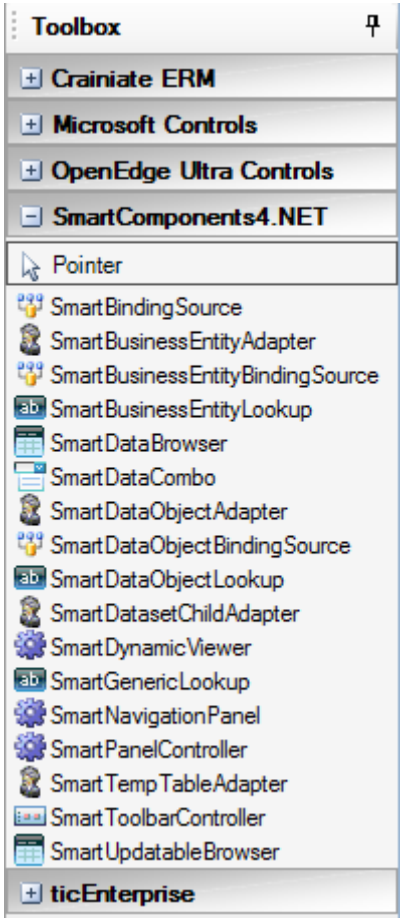
Agenda

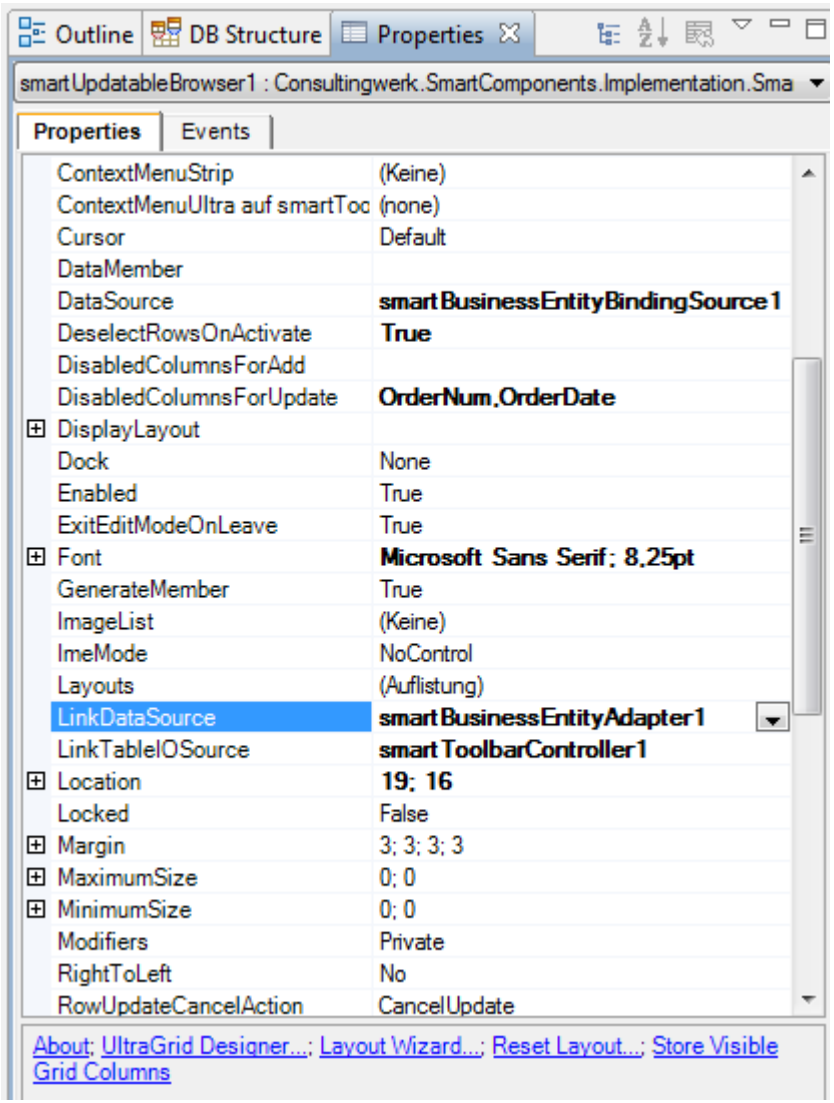
- Overview
- Architectural Overview
- Business Logic Design Process
- User Interface Design Process
- Progress Rollbase Integration
- SmartBPMAdapter /.Mobile / .Web
- SmartComponent Library and WinKit
- Review

User Interface Design Process

- Screen design based on rich foundation classes
- Compose Forms by adding rich SmartComponents and standard .NET Controls
- Connect and parameterize SmartComponents using property grid and Wizards
- Data centric design process: Achieving UI Design productivity similar to the AppBuilder

User Interface Design Process





Demo

- „Complete“ Order maintenance in 5 minutes
- Order Viewer Design
- Order Line Viewer Design
- Item Number Lookup
- Order Form Design, “putting it all together”

Agenda

- Overview
- Architectural Overview
- Business Logic Design Process
- User Interface Design Process
- Progress Rollbase Integration
- SmartBPMAdapter /.Mobile / .Web
- SmartComponent Library and WinKit
- Review

Progress Rollbase

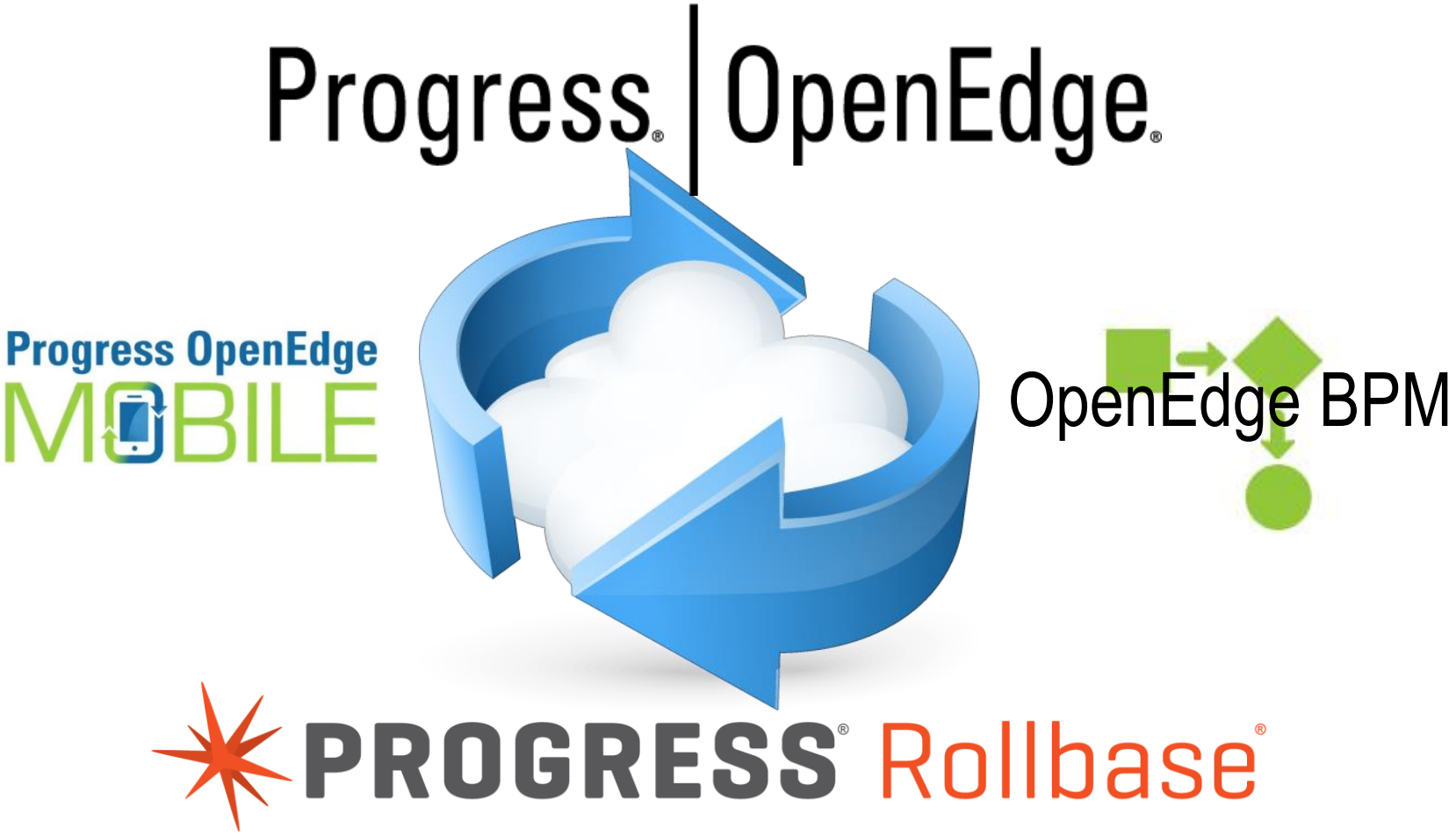
- Platform for rapid building of applications for the web (HTML and JavaScript)
- Browser/portal based design
- Applications for known users
- Portals for anonymous users
- Hosted by Progress Software or on your own (choice of cloud)
- Perfect for building “satellite apps” around core business OpenEdge application
- Subscription based pricing

SmartRollbase Adapter

- Query Rollbase meta data from OpenEdge for Interface generation
- Query Rollbase Data
- Modify (CRUD) Rollbase Data
- Generate ABL Temp-Table from Rollbase objects

- REST Adapter (OE Mobile Integration) allows Rollbase to call into SmartComponent Library backend

Progress Rollbase



Demo

- Progress Rollbase portal
- Customer Object definition
- New Lead Tracking Portal
- Migrate Rollbase Lead into sports2000.Customer

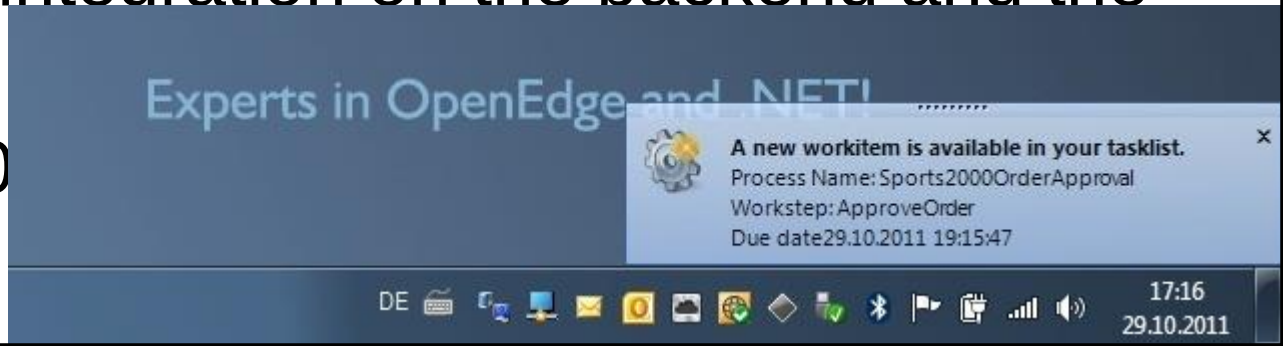
- Review Customer meta data in OpenEdge

Agenda

- Overview
- Architectural Overview
- Business Logic Design Process
- User Interface Design Process
- Progress Rollbase Integration
- SmartBPMAdapter /.Mobile / .Web
- SmartComponent Library and WinKit
- Review

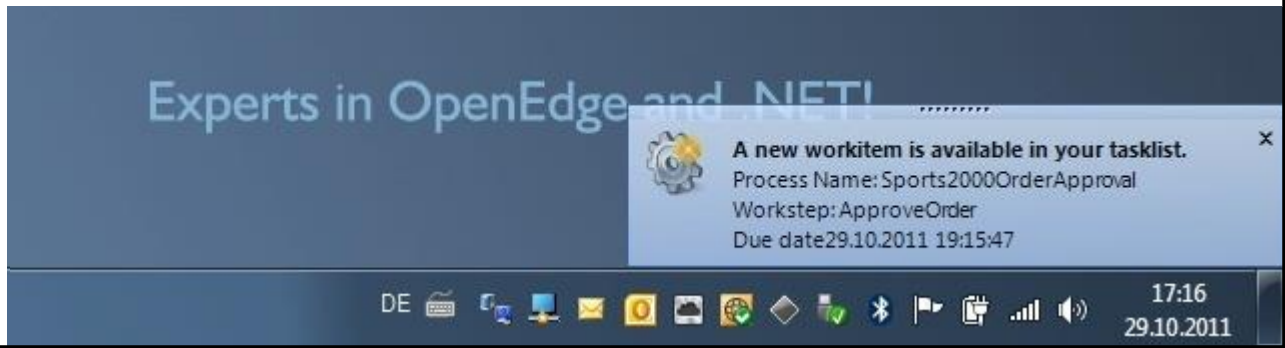
SmartBPMAdapter

- Instant integration of OpenEdge BPM
- Session and connection management
- Task list
- Desktop alerts and notifications
- Workflow Form Designer for end users
- Start new process instances from business logic or on users request
- Legacy code integration on the backend and the frontend
- OpenEdge 10



Demo BPM Integration

- Login to OpenEdge BPM
- Task list
- Start new „approve order“ process instance
- Desktop notification
- BPM Form Designer
- Respond to work item from inbox



Support for OpenEdge Mobile

- SmartComponent Library Backend and OE Mobile = perfect fit!
- Generation of fully functional Business Entity Service Interface from Business Entity Designer
- … just deploy to REST Adapter and start building OE Mobile screens

- (See the “Backend for OpenEdge Mobile presentation” from PUG Challenge 2013)

SmartComponents.Mobile

- Native UI‘s on iPhone, iPad, Android, Windows phone
- Based on Xamarin Studio (MonoTouch/Mono for Android), C# code, .NET framework
- SmartComponents.Mobile offers same API‘s to developer as on GUI for .NET
- Connected to OpenEdge AppServer live or replicated for offline
- Model and Controller platform independent
- View optimized for target device

Sports 2000 for iPad

Customers

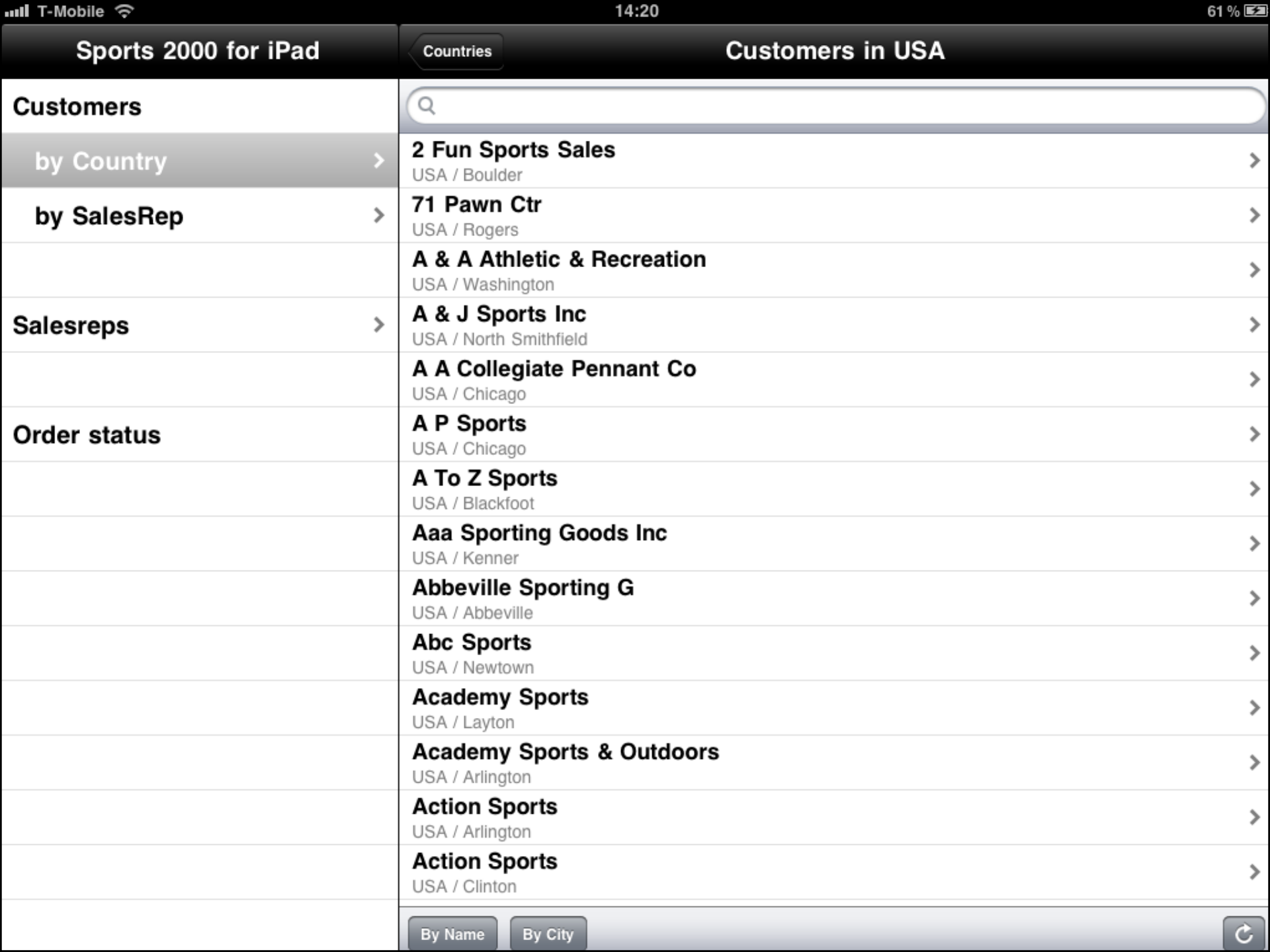
- by Country
- by SalesRep

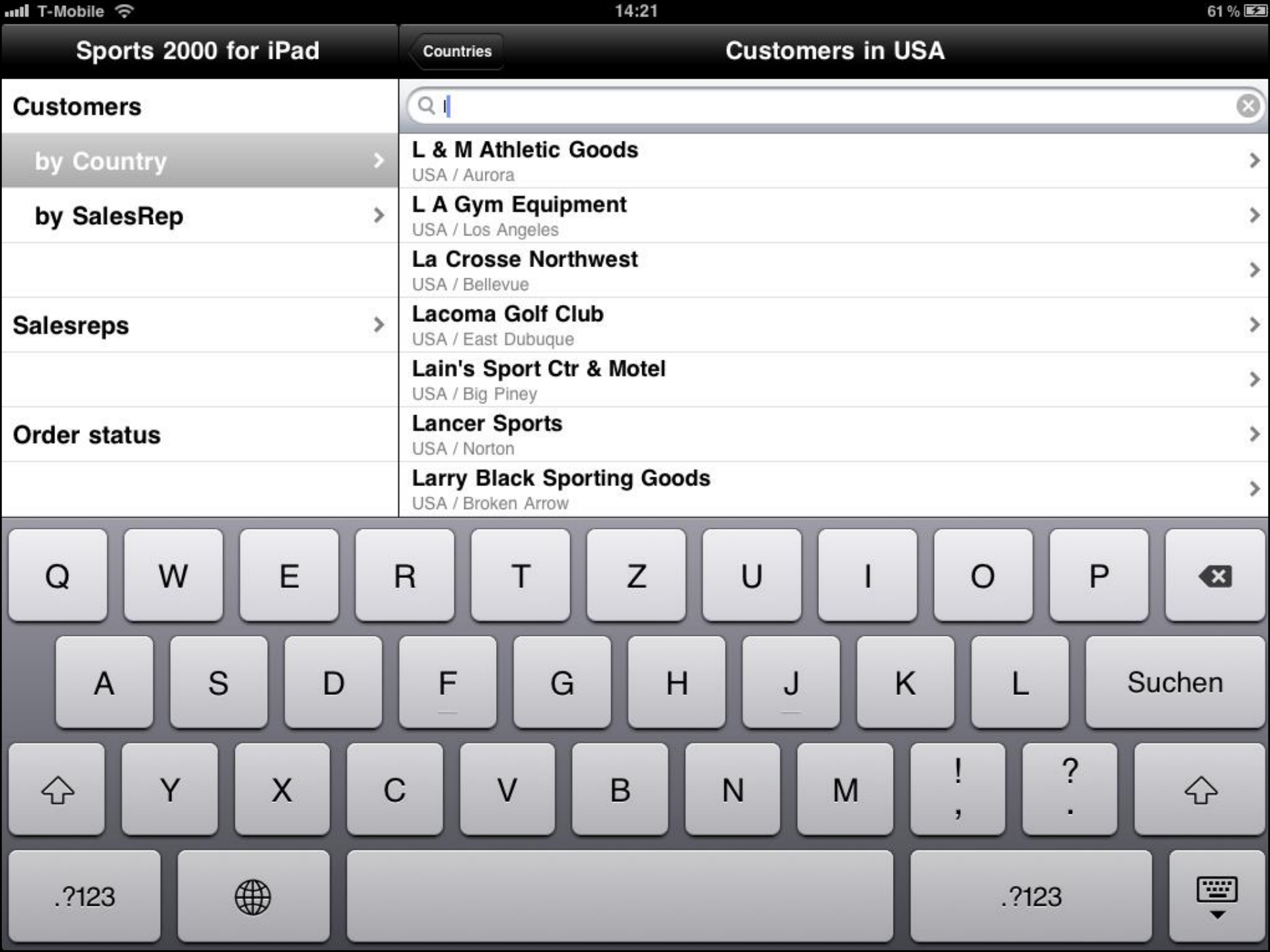
Salesreps

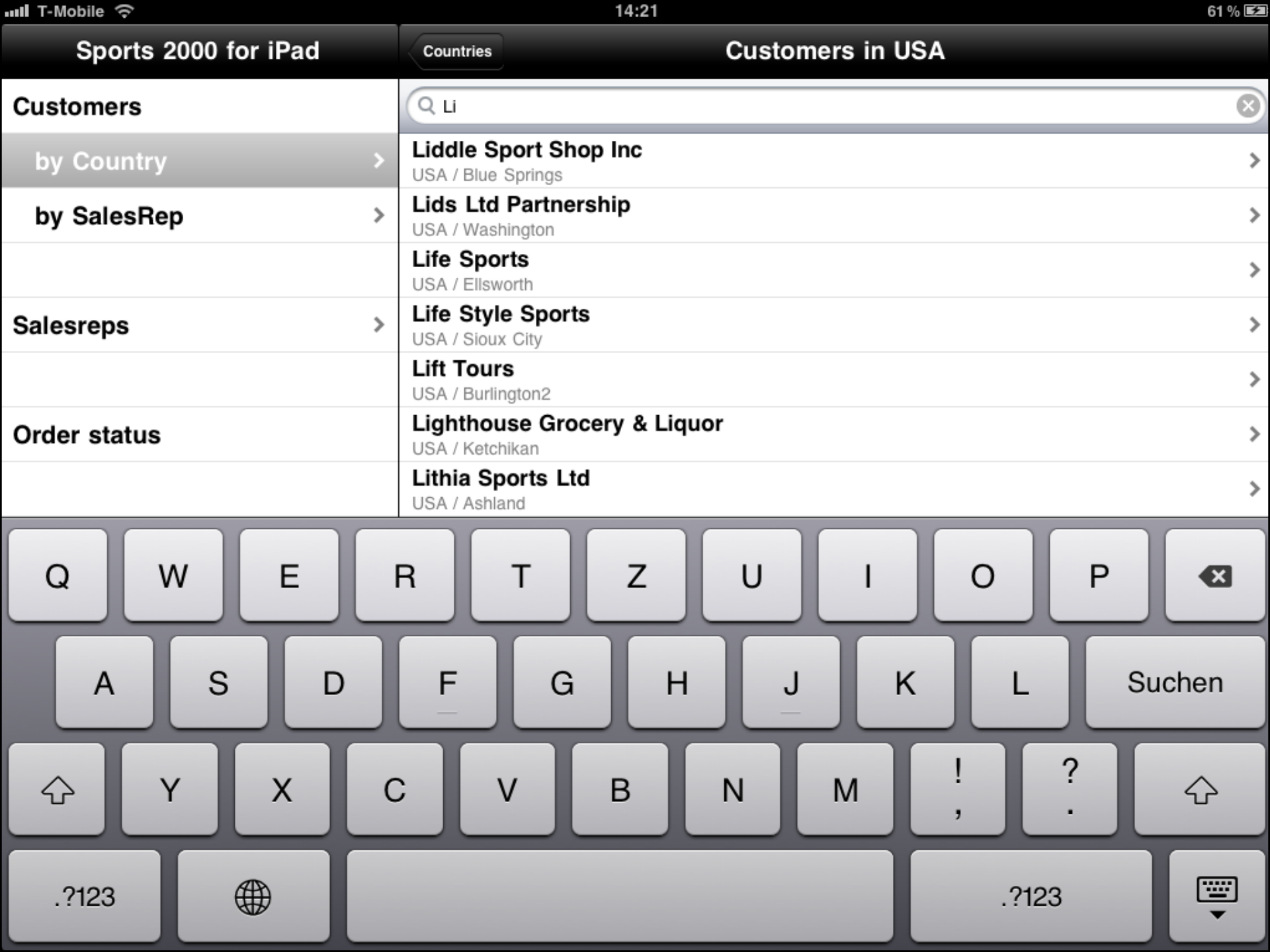
Order status

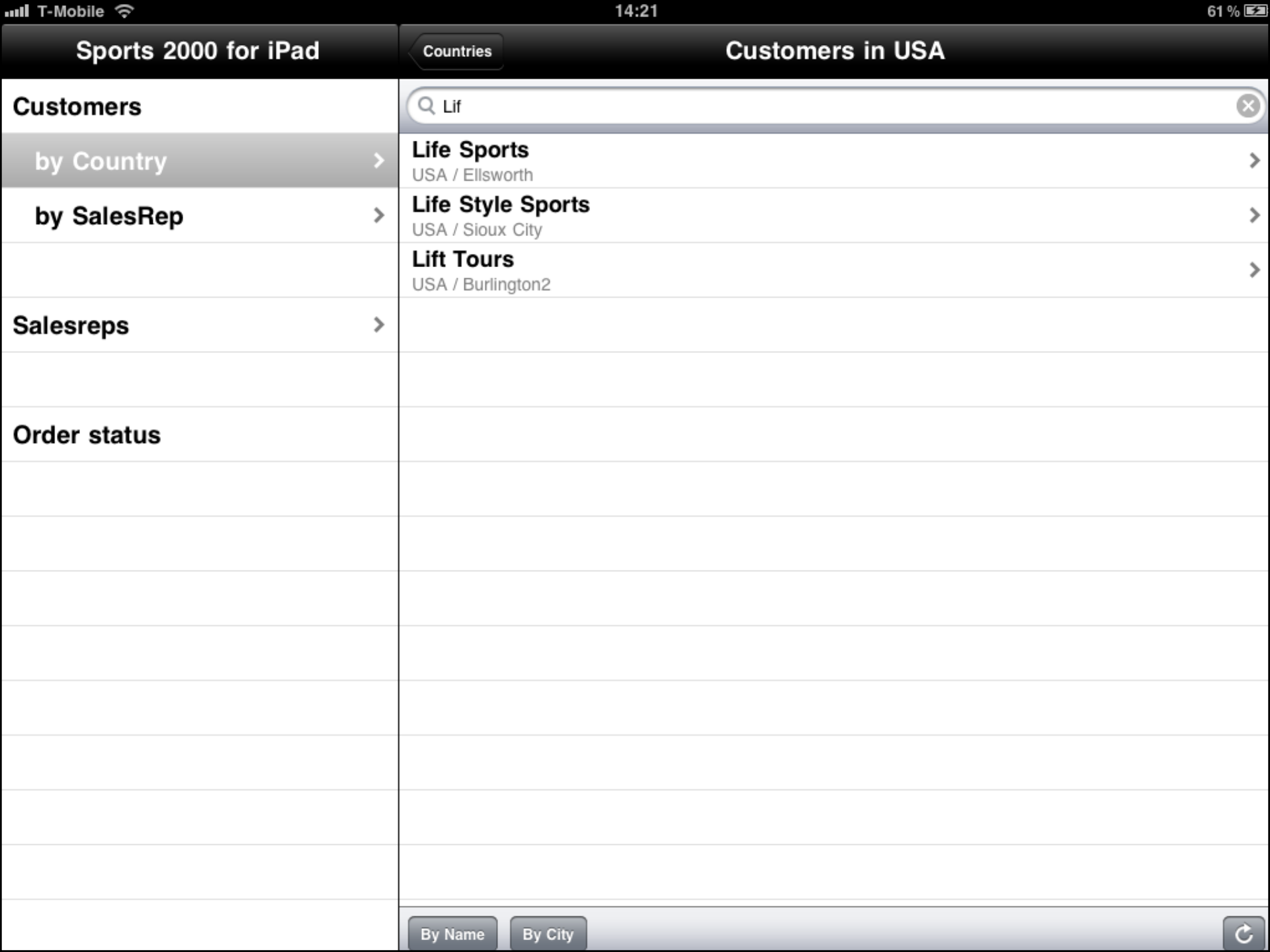
Countries

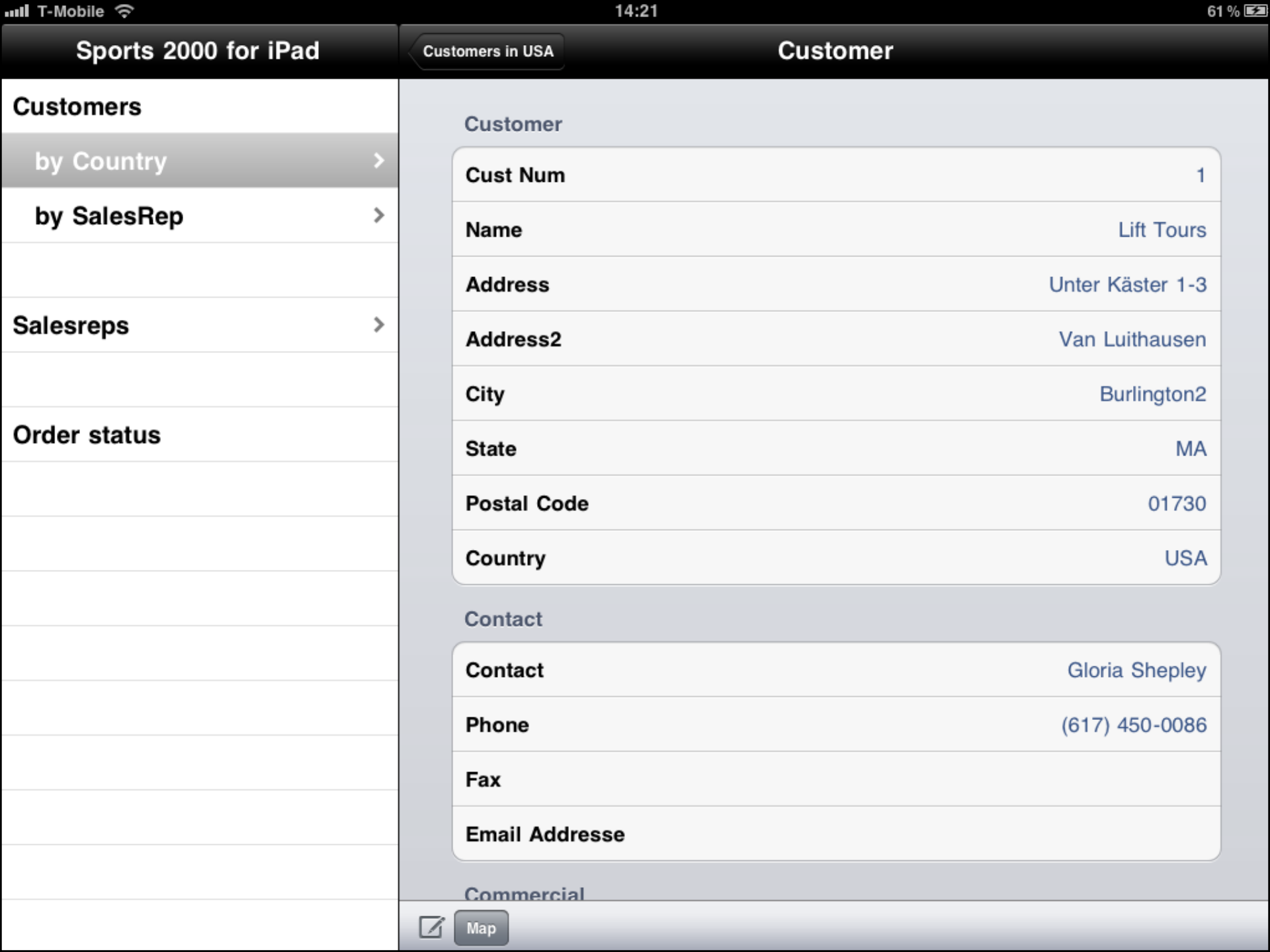
- **Australia**
  Commonwealth of Australia, 1 Customer
- **Austria**
  Republic of Austria, 3 Customer
- **Finland**
  Republic of Finland, 28 Customer
- **France**
  French Republic, 7 Customer
- **Germany**
  Federal Republic of Germany, 0 Customer
- **Italia**
  Italian Republic, 2 Customer
- **Nederland**
  The Netherlands, 3 Customer
- **Sverige**
  Kingdom of Sweden, 2 Customer
- **United Kingdom**
  United Kingdom of Great Britain and Northern Ireland, 12 Customer
- **USA**
  United States of America, 1061 Customer


T-Mobile
14:20
61 %
Sports 2000 for iPad
Countries
Customers in USA
Customers
by Country
by SalesRep
Salesreps
Order status
2 Fun Sports Sales
USA / Boulder
71 Pawn Ctr
USA / Rogers
A & A Athletic & Recreation
USA / Washington
A & J Sports Inc
USA / North Smithfield
A A Collegiate Pennant Co
USA / Chicago
A P Sports
USA / Chicago
A To Z Sports
USA / Blackfoot
Aaa Sporting Goods Inc
USA / Kenner
Abbeville Sporting G
USA / Abbeville
Abc Sports
USA / Newtown
Academy Sports
USA / Layton
Academy Sports & Outdoors
USA / Arlington
Action Sports
USA / Arlington
Action Sports
USA / Clinton
By Name
By City


T-Mobile
14:21
61 %
Sports 2000 for iPad
Countries
Customers in USA
Customers
by Country
by SalesRep
Salesreps
Order status
L & M Athletic Goods
USA / Aurora
L A Gym Equipment
USA / Los Angeles
La Crosse Northwest
USA / Bellevue
Lacoma Golf Club
USA / East Dubuque
Lain's Sport Ctr & Motel
USA / Big Piney
Lancer Sports
USA / Norton
Larry Black Sporting Goods
USA / Broken Arrow
Q W E R T Z U I O P
A S D F G H J K L Suchen
Y X C V B N M
.?123
.?123


T-Mobile
14:21
61 %
Sports 2000 for iPad
Countries
Customers in USA
Customers
by Country
by SalesRep
Salesreps
Order status
Li
Liddle Sport Shop Inc
USA / Blue Springs
Lids Ltd Partnership
USA / Washington
Life Sports
USA / Ellsworth
Life Style Sports
USA / Sioux City
Lift Tours
USA / Burlington2
Lighthouse Grocery & Liquor
USA / Ketchikan
Lithia Sports Ltd
USA / Ashland
Q W E R T Z U I O P
A S D F G H J K L Suchen
Y X C V B N M ! , ? .
.?123
.?123


T-Mobile
14:21
61 %
Sports 2000 for iPad
Countries
Customers in USA
Customers
by Country
by SalesRep
Salesreps
Order status
Lif
Life Sports
USA / Ellsworth
Life Style Sports
USA / Sioux City
Lift Tours
USA / Burlington2
By Name
By City


T-Mobile
14:21
61 %
Sports 2000 for iPad
Customers in USA
Customer
Customers
by Country
by SalesRep
Salesreps
Order status
Customer
Cust Num
1
Name
Lift Tours
Address
Unter Käster 1-3
Address2
Van Luithausen
City
Burlington2
State
MA
Postal Code
01730
Country
USA
Contact
Contact
Gloria Shepley
Phone
(617) 450-0086
Fax
Email Addresse
Commercial
Map

Sports 2000 for iPad

- Customers
  - by Country
  - by SalesRep
- Salesreps
- Order status

Details

Salesreps

Brawn , Bubba B.
East

Pitt , Dirk K.
Central

Donna Swindall
Southern

Gilles Ehrer
Bretagne

Harry Munvig
Sverige

Jan Loopsnel
Noord

Kari Iso-Kauppinen
Finland

Robert Roller
Austria

Smith , Spike Louise
West

Add Salesrep

Sports 2000 for iPad

Customers

by Country

by SalesRep

Salesreps

Order status

Salesreps

Customers of RDR

Abbeville Sporting G
USA / Abbeville

Action Sports
USA / Great Bend

Adin Supply Co
USA / Adin

Alfred Sports Ctr
USA / Alfred

All American Sports
USA / Logan

All Seasons Sportarama
USA / Baldwin

All Star Sport Ctr
USA / Bayonne

Alta Sports
USA / Alta

Anchor Angler
USA / Anchor Point

Arkenstone Paint Ball Games
USA / Acworth

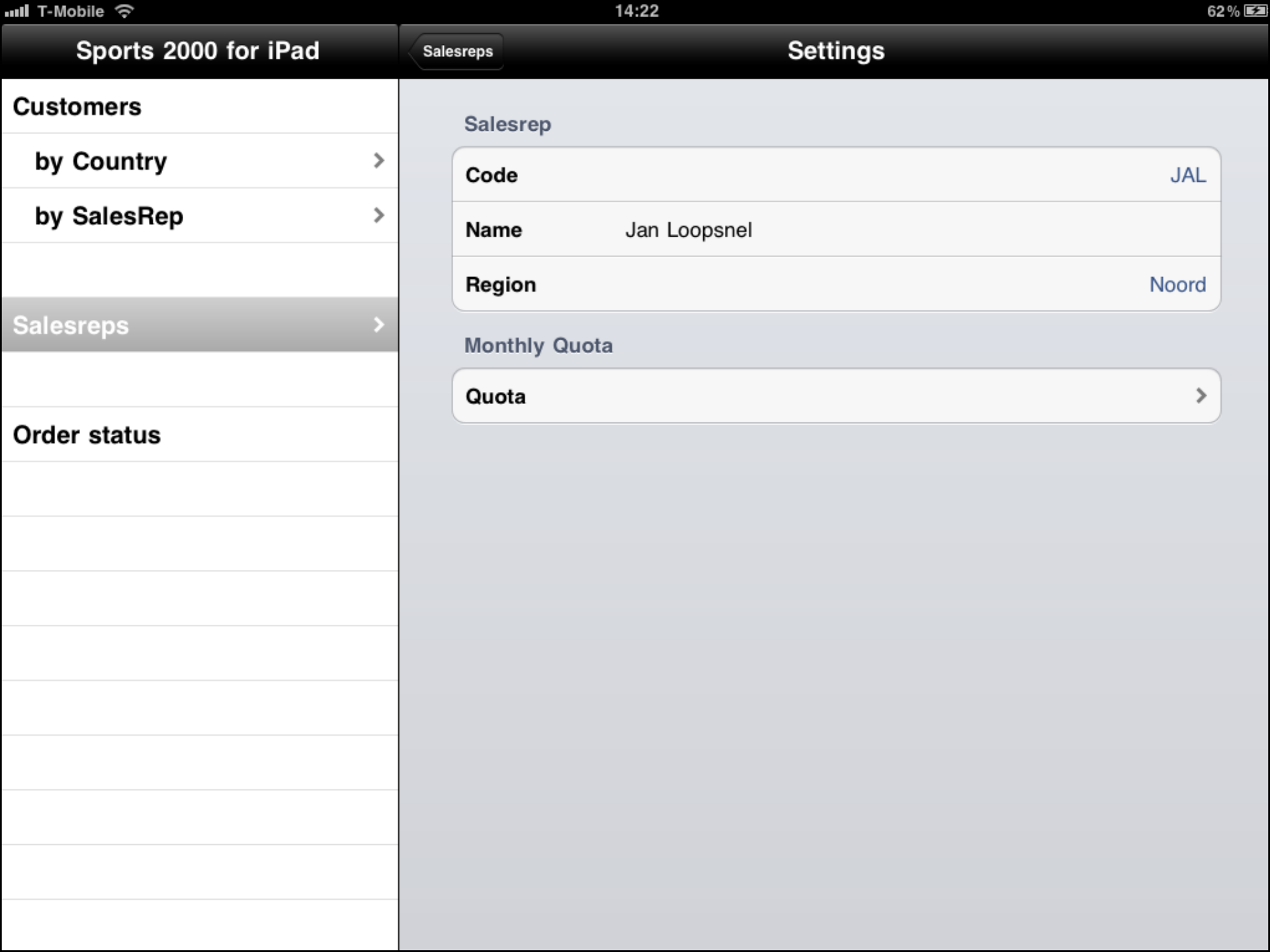
B & M Gun Shop
USA / Abington

Barry's Up North
USA / Aurora

Bear Sporting Goods
USA / Bear

Bell's Sporting Goods
USA / Lafayette

By Name | By City


T-Mobile
14:22
62 %
Sports 2000 for iPad
Salesreps
Settings
Customers
by Country
by SalesRep
Salesreps
Order status
Salesrep
Code
JAL
Name
Jan Loopsnel
Region
Noord
Monthly Quota
Quota

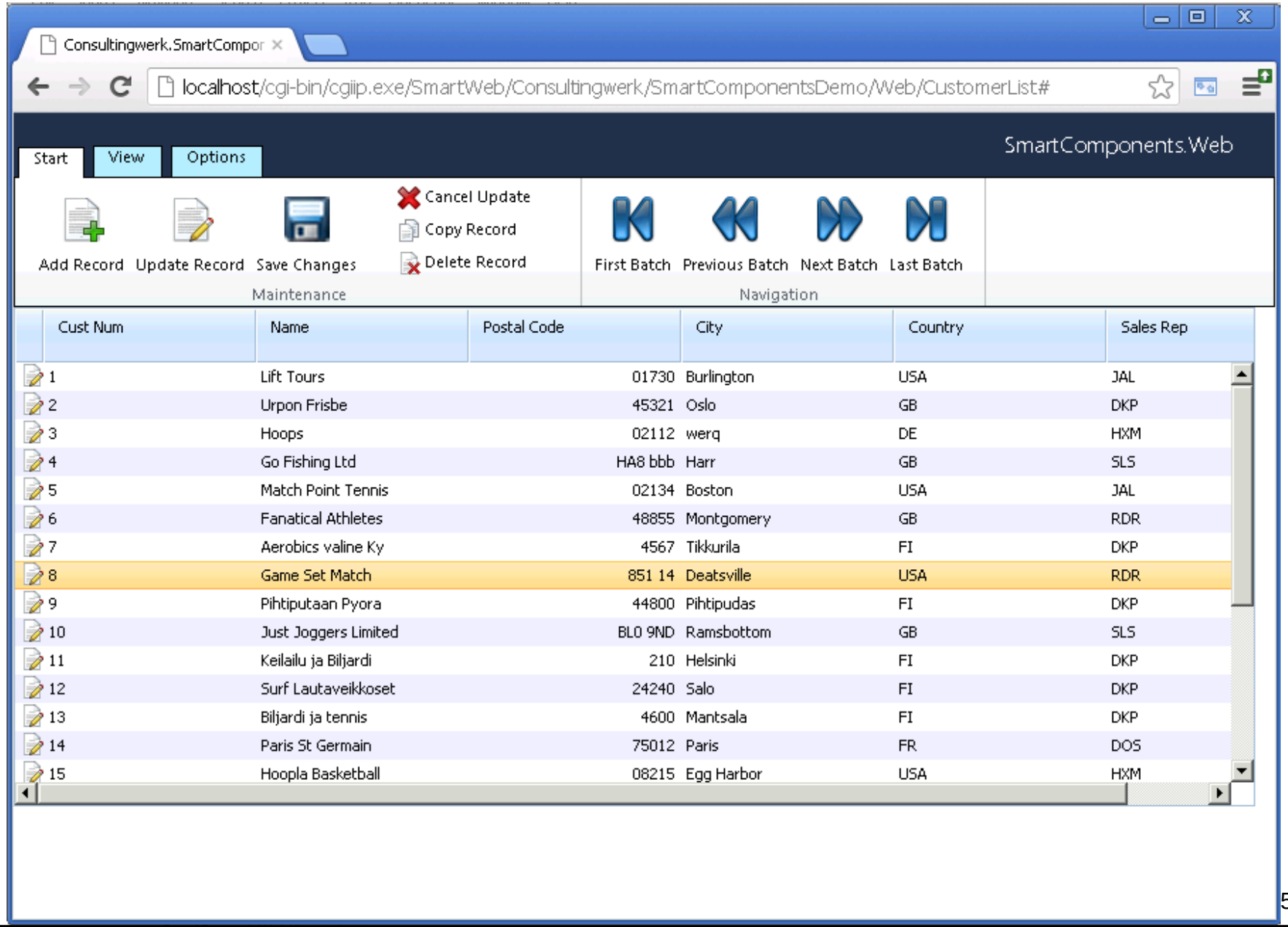
Quota

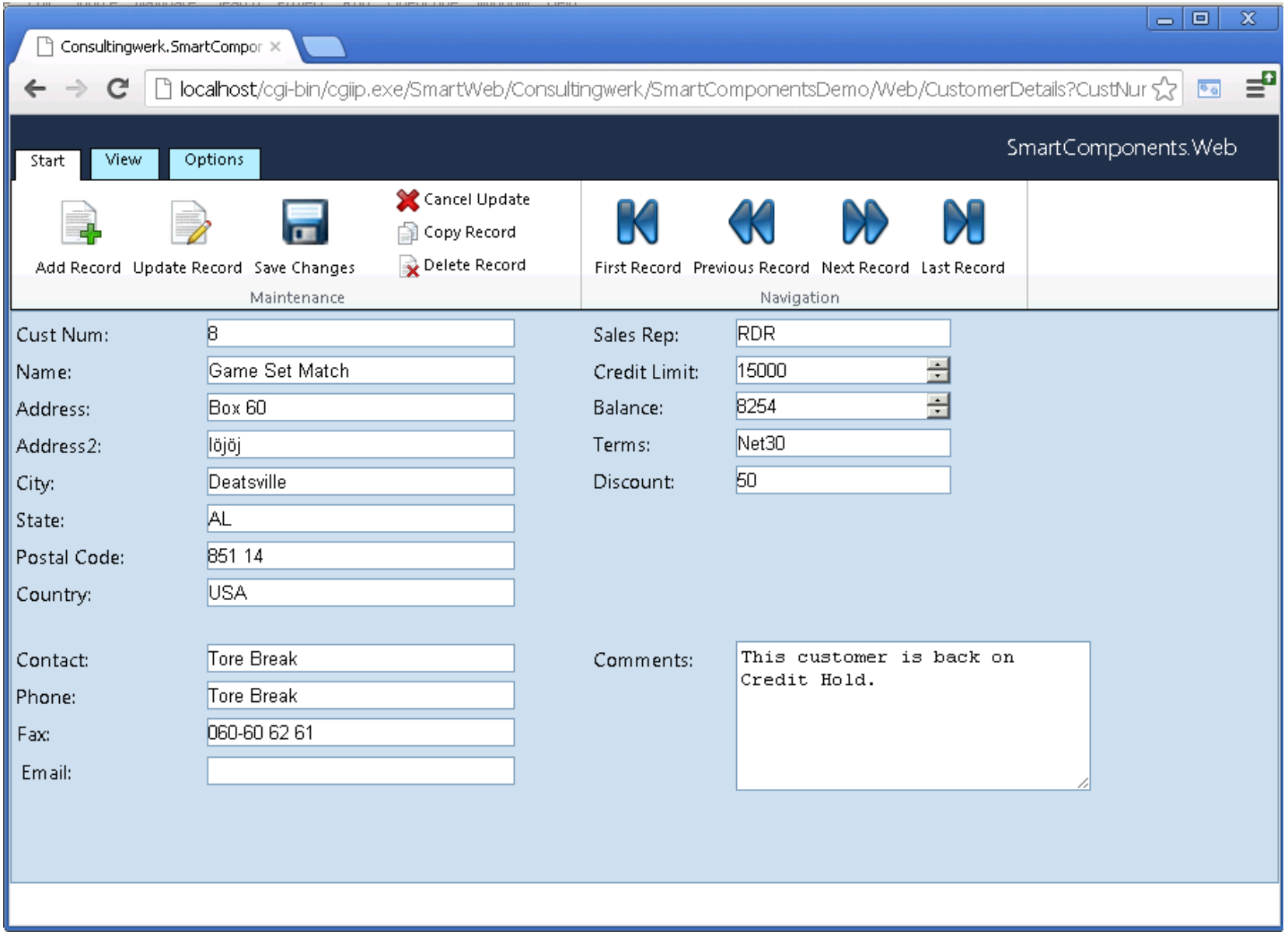
Customers
by Country
by SalesRep
Salesreps
Order status

January	2200
February	2266
March	2334
April	2404
May	2476
June	2550
July	2627
August	2706
September	2787
October	2871
November	2957
December	3046

SmartComponents.Web

- OpenEdge Web Speed backend
- WebSpeed OO-Enabled
- Server side: similar object model as on the GUI for .NET
- SmartWeb Components
- Web Widgets (abstraction from HMTL generation), stylable look and feel
- Design in code, graphical design in repository
- Client side: jQuery objects/HTML/AJAX/HTML5


Consultingwerk.SmartCompor
localhost/cgi-bin/cgiip.exe/SmartWeb/Consultingwerk/SmartComponentsDemo/Web/CustomerList#
Start
View
Options
SmartComponents.Web
Add Record
Update Record
Save Changes
Cancel Update
Copy Record
Delete Record
Maintenance
First Batch
Previous Batch
Next Batch
Last Batch
Navigation
Cust Num
Name
Postal Code
City
Country
Sales Rep
1 Lift Tours 01730 Burlington USA JAL
2 Urpon Frisbe 45321 Oslo GB DKP
3 Hoops 02112 werq DE HXM
4 Go Fishing Ltd HA8 bbb Harr GB SLS
5 Match Point Tennis 02134 Boston USA JAL
6 Fanatical Athletes 48855 Montgomery GB RDR
7 Aerobics valine Ky 4567 Tikkurila FI DKP
8 Game Set Match 851 14 Deatsville USA RDR
9 Pihtiputaan Pyora 44800 Pihtipudas FI DKP
10 Just Joggers Limited BL0 9ND Ramsbottom GB SLS
11 Keilailu ja Biljardi 210 Helsinki FI DKP
12 Surf Lautaveikkoset 24240 Salo FI DKP
13 Biljardi ja tennis 4600 Mantsala FI DKP
14 Paris St Germain 75012 Paris FR DOS
15 Hoopla Basketball 08215 Egg Harbor USA HXM


Consultingwerk.SmartCompor
localhost/cgi-bin/cgiip.exe/SmartWeb/Consultingwerk/SmartComponentsDemo/Web/CustomerDetails?CustNur
Start
View
Options
SmartComponents.Web
Add Record
Update Record
Save Changes
Cancel Update
Copy Record
Delete Record
Maintenance
First Record
Previous Record
Next Record
Last Record
Navigation
Cust Num: 8
Name: Game Set Match
Address: Box 60
Address2: löjöj
City: Deatsville
State: AL
Postal Code: 851 14
Country: USA
Sales Rep: RDR
Credit Limit: 15000
Balance: 8254
Terms: Net30
Discount: 50
Contact: Tore Break
Phone: Tore Break
Fax: 060-60 62 61
Email:
Comments: This customer is back on Credit Hold.

Demo

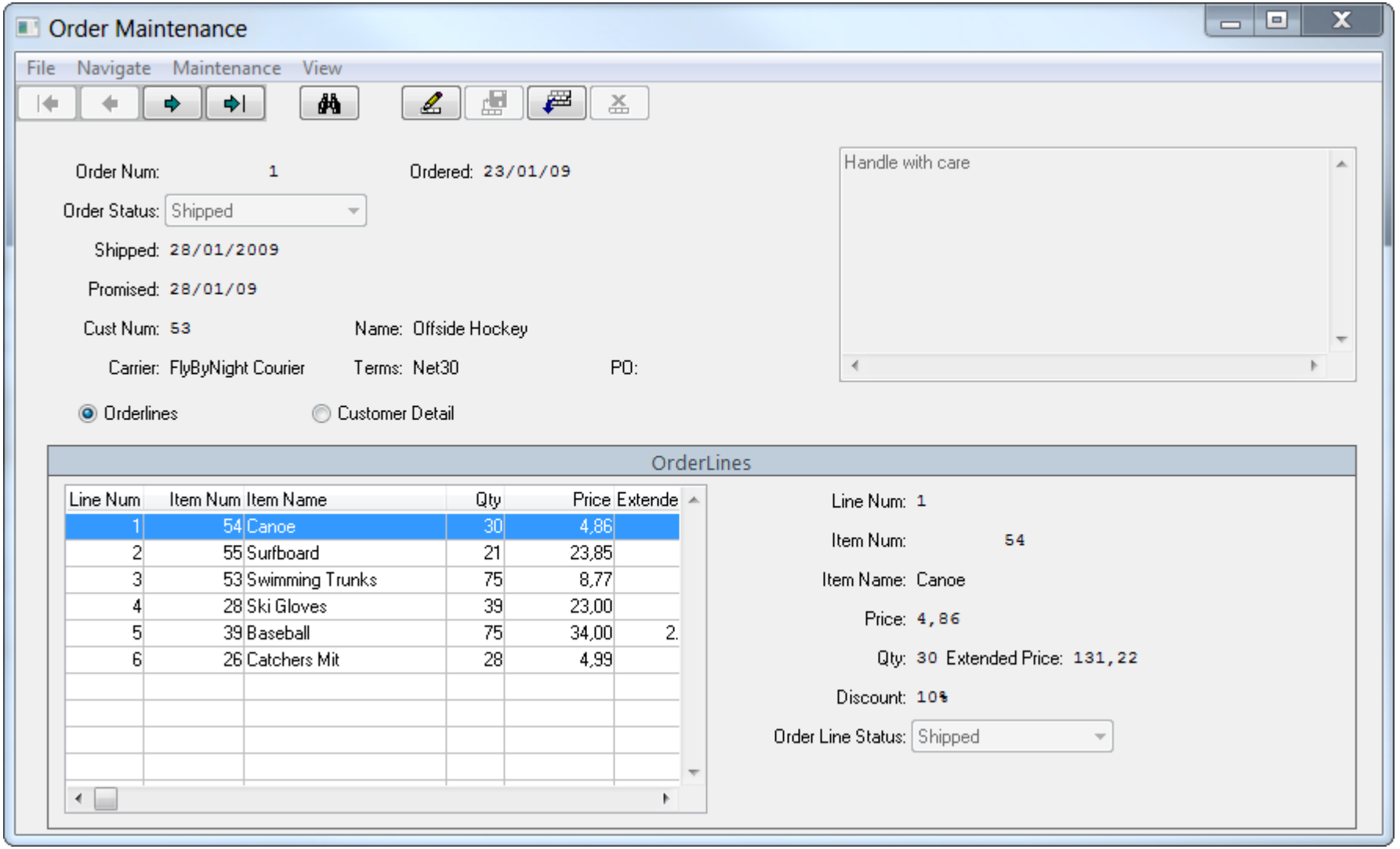
- Consultingwerk ESD Website

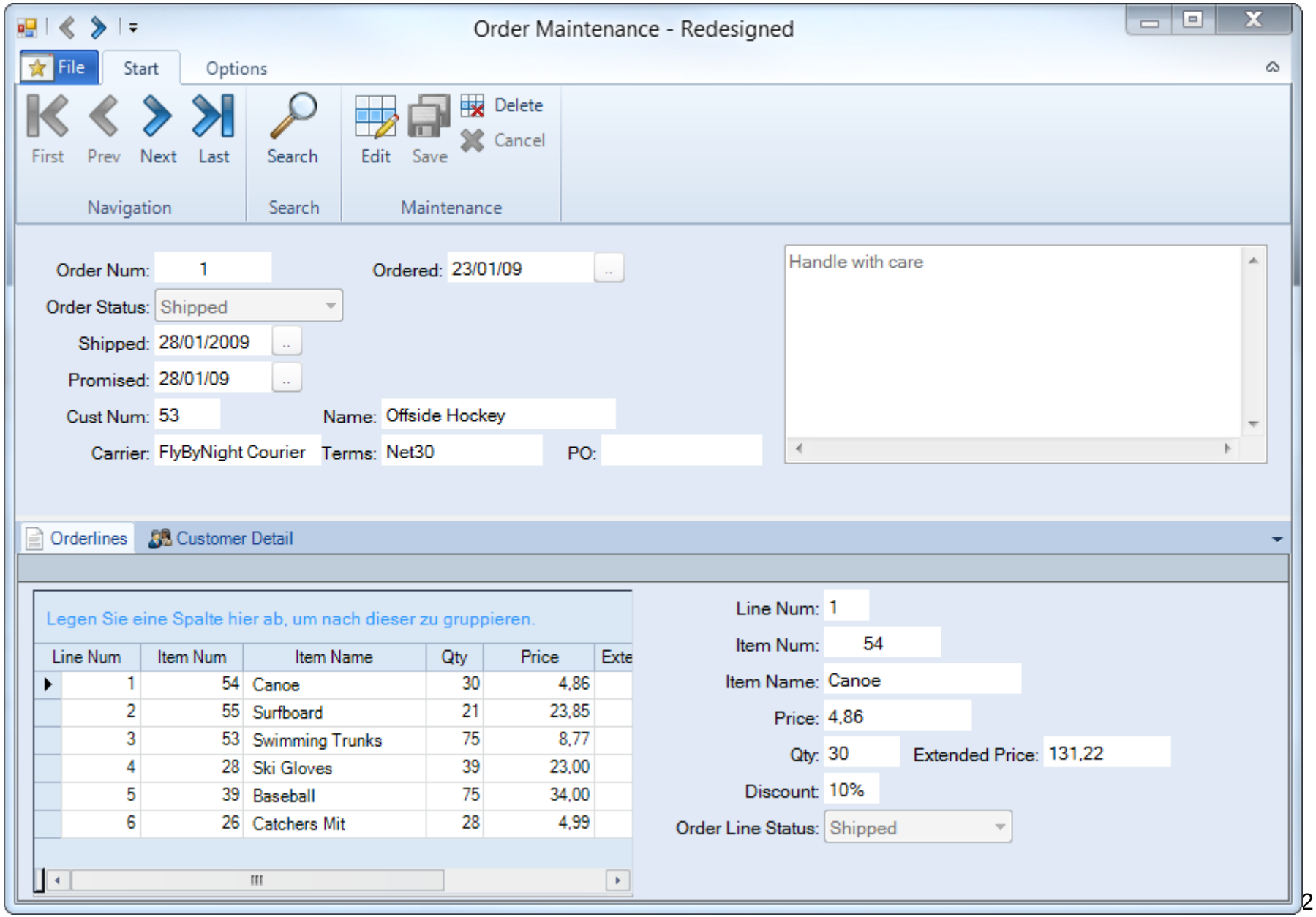
Agenda

- Overview
- Architectural Overview
- Business Logic Design Process
- User Interface Design Process
- Progress Rollbase Integration
- SmartBPMAdapter /.Mobile / .Web
- SmartComponent Library and WinKit
- Review

SmartComponent Library and WinKit

- ***SmartComponent Library*** and ***WinKit*** are part of our GUI for .NET adoption and migration strategy
  - WinKit: Enhancement of existing screens
  - SmartComponent Library: New functionality
- Shared framework foundation classes
- Compatible directory and project structure
- Used side by side in customer projects
- 40 different WinKit implementations already


Order Maintenance
File Navigate Maintenance View
Order Num: 1
Ordered: 23/01/09
Order Status: Shipped
Shipped: 28/01/2009
Promised: 28/01/09
Cust Num: 53
Name: Offside Hockey
Carrier: FlyByNight Courier
Terms: Net30
PO:
Handle with care
Orderlines
Customer Detail
OrderLines
Line Num Item Num Item Name Qty Price Extende
1 54 Canoe 30 4,86
2 55 Surfboard 21 23,85
3 53 Swimming Trunks 75 8,77
4 28 Ski Gloves 39 23,00
5 39 Baseball 75 34,00 2.
6 26 Catchers Mit 28 4,99
Line Num: 1
Item Num: 54
Item Name: Canoe
Price: 4,86
Qty: 30 Extended Price: 131,22
Discount: 10%
Order Line Status: Shipped


Order Maintenance - Redesigned
File
Start
Options
First
Prev
Next
Last
Navigation
Search
Search
Edit
Save
Delete
Cancel
Maintenance
Order Num: 1
Ordered: 23/01/09
Order Status: Shipped
Shipped: 28/01/2009
Promised: 28/01/09
Cust Num: 53
Name: Offside Hockey
Carrier: FlyByNight Courier
Terms: Net30
PO:
Handle with care
Orderlines
Customer Detail
Legen Sie eine Spalte hier ab, um nach dieser zu gruppieren.
Line Num
Item Num
Item Name
Qty
Price
Exte
1 54 Canoe 30 4,86
2 55 Surfboard 21 23,85
3 53 Swimming Trunks 75 8,77
4 28 Ski Gloves 39 23,00
5 39 Baseball 75 34,00
6 26 Catchers Mit 28 4,99
Line Num: 1
Item Num: 54
Item Name: Canoe
Price: 4,86
Qty: 30
Extended Price: 131,22
Discount: 10%
Order Line Status: Shipped

Agenda

- Overview
- Architectural Overview
- Business Logic Design Process
- User Interface Design Process
- Progress Rollbase Integration
- SmartBPMAdapter /.Mobile / .Web
- SmartComponent Library and WinKit
- Review

Review

- The ***SmartComponent Library*** is our answer to a developers demand for a productive and rich design time experience when using the OpenEdge
- Based on OpenEdge standard design patterns
- Flexible OERA implementation
- Perfectly integrated into the Visual Designer
- Progress Rollbase / BPM / Mobile / Web
- **Dramatically reduces training requirements for GUI for .NET, OO and OERA, new feature adoption**
- Full source code available to developers

Questions