



From hard-coded to customizable

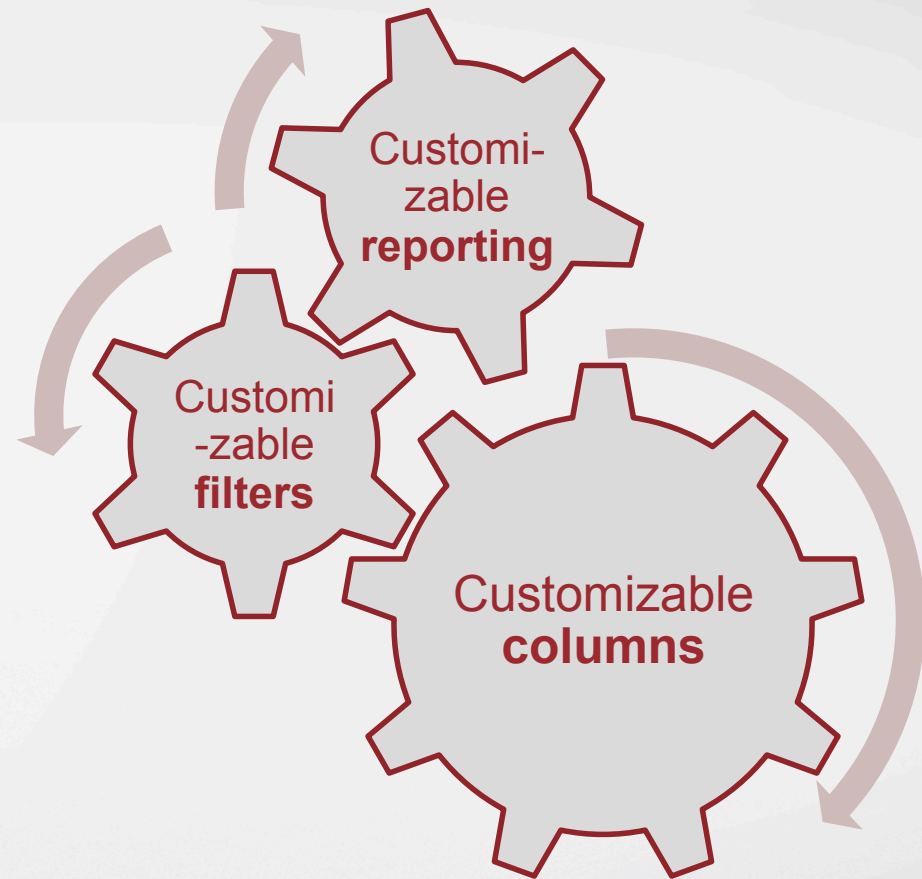
Must haves of a really flexible application

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JDD 2011 Kraków

- **XTRF**
- **Software flexibility**
- **Ideas that work**
 - Customizable columns
 - Virtual columns
 - Customizable filters
 - Manageable views
 - Customizable reporting
 - Charts
- **Summary**



Global management software for translation agencies and localization departments

- **Project**
 - Start: 2006
 - Domain expert + IT expert + Marketing expert
- **Technology**
 - Jboss AS, Hibernate, Spring, Velocity, Eclipse Birt, Jboss Seam, RichFaces and others (150 jar's...)
- **Distribution model**
 - single „ear” file
 - licence server
 - On premises & SaaS
- **Modules**
 - Project management & workflow
 - CRM
 - Invoicing
 - BI reporting
 - more...





Software Flexibility

The ability of software to change easily in response to different user and system requirements.

Developer perspective \neq Customer perspective

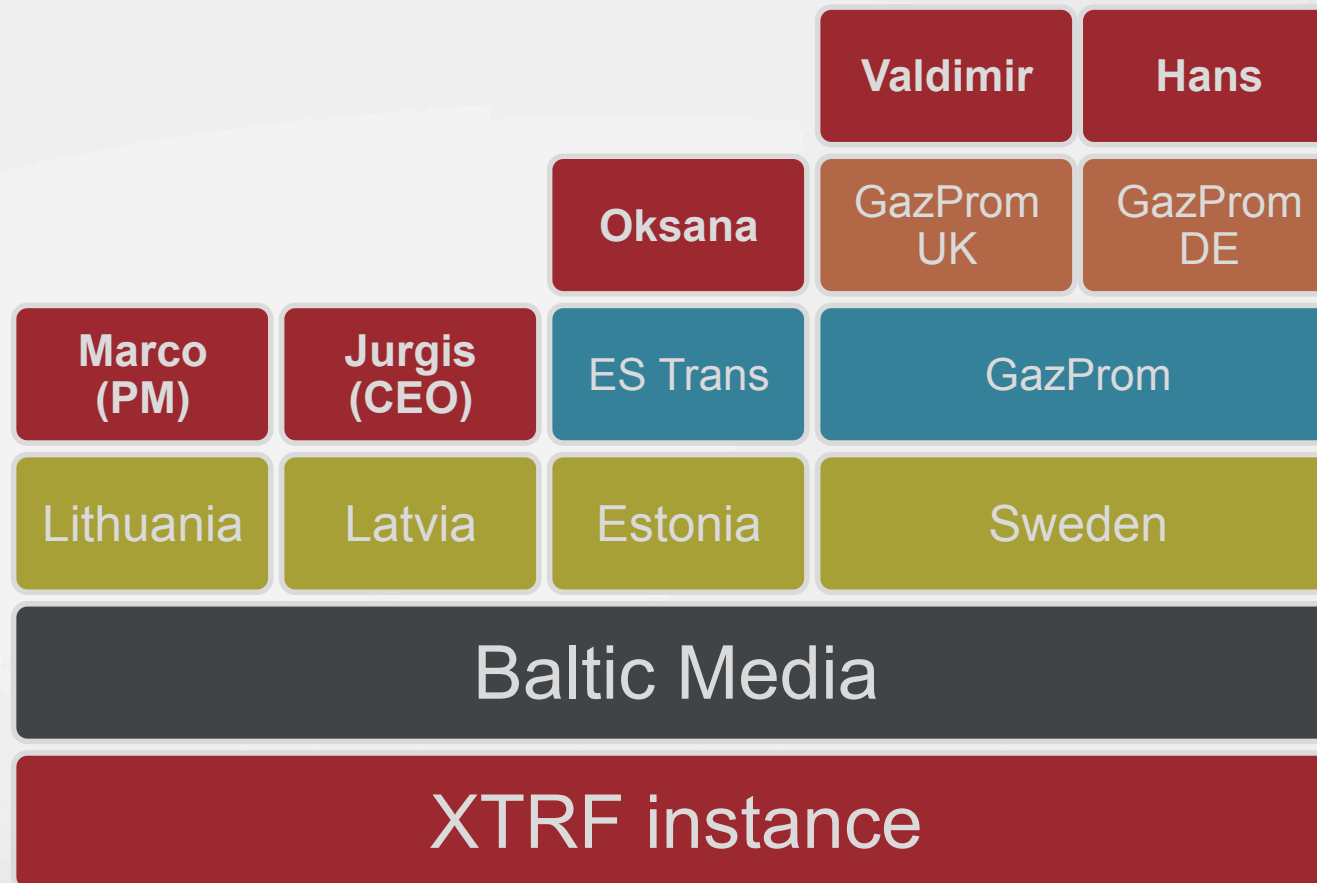
Developer/Architect perspective

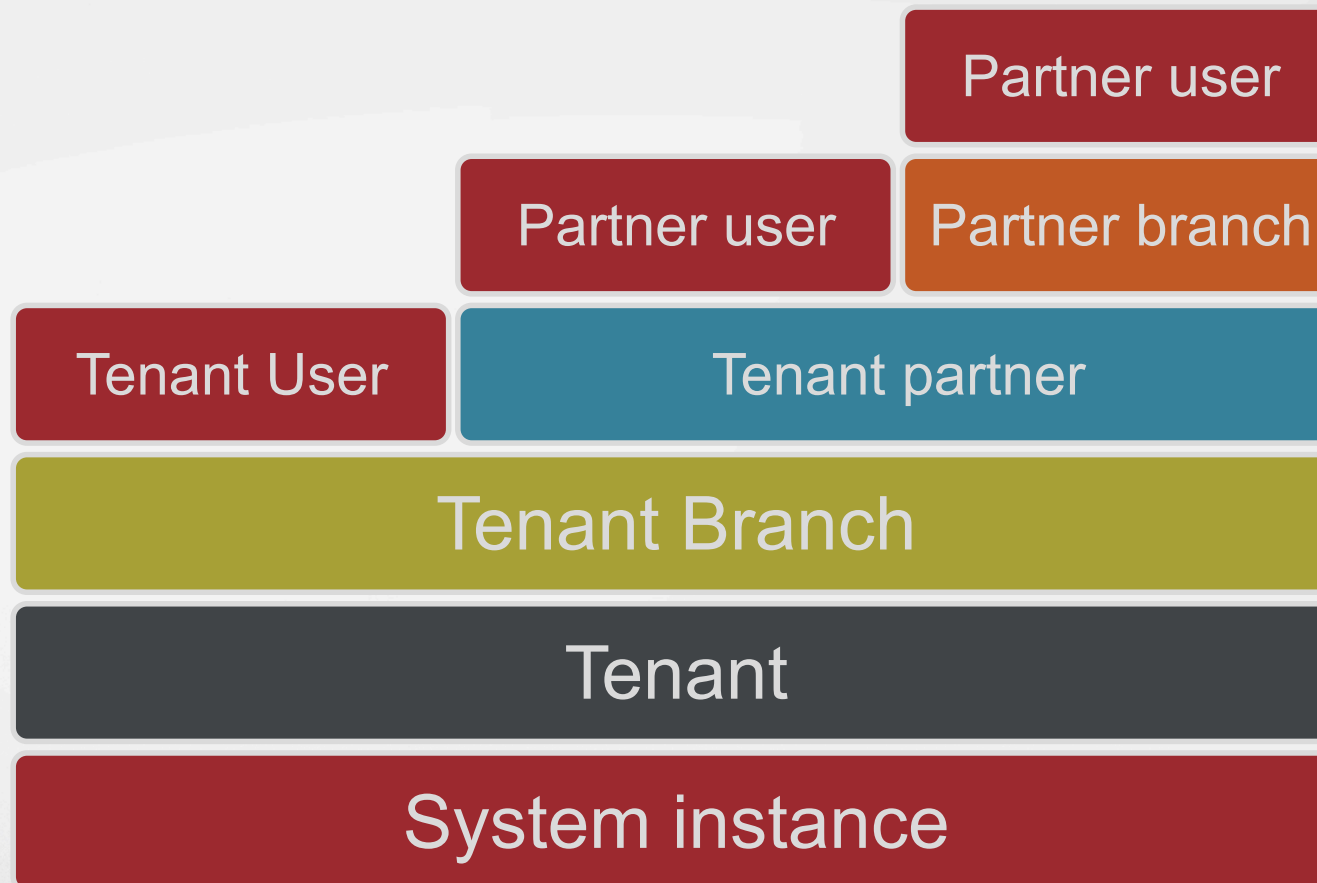
- Software modularity (multi-layered)
- Component/Service orientation (loosely coupled)
- Design patterns (IoC and dependency injection in particular)
- JDBC/JPA – no database vendor lock-in, power of ORM
- Just COOL




Customer perspective

- **Cool only if it increases the business value**
- Much more functionally oriented ☺

- **Multiple languages of UI**
 - translation of properties (Strings externalization ☺)
- **Data formatting**
 - Data, time (time zones), numbers and currency values
- **Data localization**
 - Dictionary values (country names, language names)
 - Email templates
 - Document templates (Invoices, POs, etc.)
- **Different ways companies work**
 - Project workflows,
 - Integrated, cooperating software





Project list - 2 items								
ID number	Name	Total cost	Total agreed	Languages	Currency	Deadline	Edit	Delete
2011/2	dddddd	0,00 \$	0,00 \$	AB » AR, AB » HY, AB » SQ, AB » AM,	American Dollar [\$]	2011-11-05		
2011/1	test	0,00 \$	0,00 \$	AB » AY,	American Dollar [\$]	2011-11-05		

Additional columns in project browse

- (C1) customer address
- (C2) language combination,
- (C3) amount. PM name, email,
- etc

CEO:

It is a very important customer !

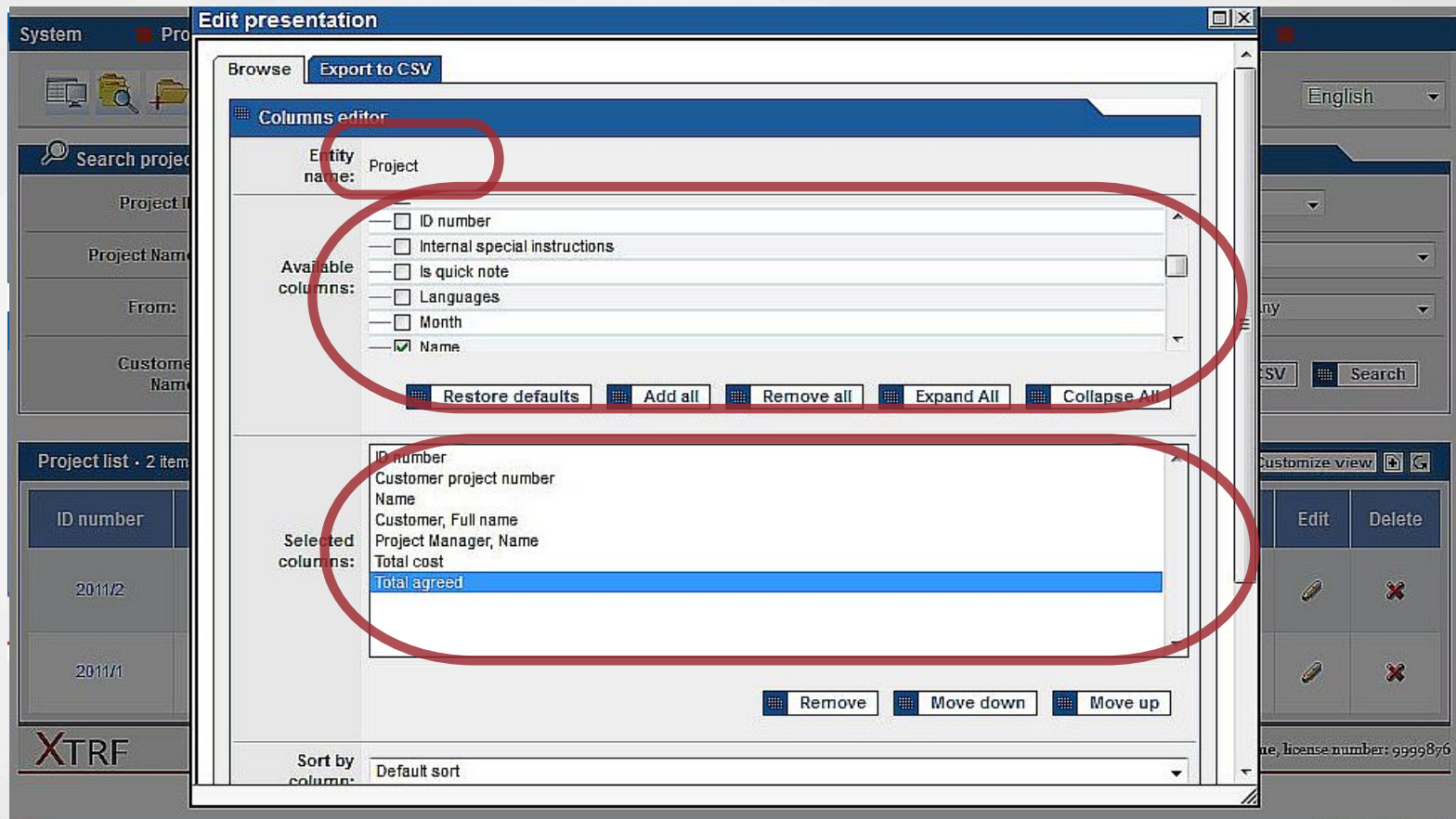
We must do it for him (only this one time...)

**Never allow for
,per customer code branching'
unless you want to have multiple
independent applications soon.**

Make flexibility your
key functional requirement



Customizable columns (2008)



No very innovative but.....

@CustomizableListElement

@CustomizableColumnFinalElement

@CustomizableColumnParentElement

```
@CustomizableListElement  
public class Project {
```

```
    private ProjectStatus status;  
    private Date deadline;  
    private Customer customer;
```

```
    @CustomizableColumnFinalElement  
    public ProjectStatus getStatus() {  
        return status;  
    }
```

```
    @CustomizableColumnFinalElement(formatter = ValueFormatter.DATE_AND_HOUR)  
    public Date getDeadline() {  
        return deadline;  
    }
```

```
    @CustomizableColumnParentElement  
    public Customer getCustomer() {  
        return customer;  
    }  
}
```

```
@CustomizableListElement  
public class Customer {
```

```
    private String name;  
    private Country country;
```

```
    @CustomizableColumnFinalElement  
    public String getName() {return name;}  
    @CustomizableColumnFinalElement  
    public Country getCountry() {return country;}  
}
```

*Simplified,
JPA annotations removed*

Customizable columns (2008)

The screenshot displays the 'Edit presentation' window in the XTRF application. The 'Columns editor' is active for the 'Project' entity. The 'Available columns' list, which is circled in red, contains the following items:

- ☐ Contact person
- ☐ Currency
- ☒ Customer
- ☐ Customer, Account
- ☐ Customer, Account, Home Directory
- ☐ Customer, Account, ID number

The 'Selected columns' list includes:

- ID number
- Customer project number
- Name
- Customer, Full name
- Project Manager, Name
- Total cost
- Total agreed (highlighted in blue)

At the bottom of the window, the 'Sort by' dropdown is set to 'Default sort'. The URL bar at the bottom shows: <https://localhost:8443/xtrf/presentation/edi...sz.xtrf.model.AbstractProject.contactPerson>

Customizable columns (2008)

System ☒ Provider ☒ Customer ☒ Quote ☒ Project ☒ Invoicing ☒ ISO9001 ☒ CRM ☒ Help ☒

English

Search project

Project ID: Customer project number: Status:

Project Name: Source lang.: Target lang.:

From: (yyyy-MM-dd) To: (yyyy-MM-dd) In: Project Manager:

Customer Name:

Project list - 2 items

ID number	Customer project number	Name	Customer	Project Manager	Total cost	Total agreed	Customer		Edit	Delete
			Full name	Name			Account	Address		
							Home Directory	ZIP code		
2011/2		dddddd	asdfsafas	admin	0,00 \$	0,00 \$	c:\xtrf\ftp\customers\fasdfasf			
2011/1		test	asdfsafas	admin	0,00 \$	0,00 \$	c:\xtrf\ftp\customers\fasdfasf			

XTRF User: System Administrator, licensed to: testEnterpriseLicenceName, license number: 9999876

- **Functionality**
 - column selection based on the entire domain model
 - changeable column sequence
 - sorting
 - paging with definable number of rows
 - csv export
- **Customizable for each individual user**
- **Default configuration**

```
@CustomizableListElement
@CustomizableListDefaults[] {
    @CustomizableListDefault(view = "quickNotesView", columns = { "idNumber", "notes", "customerProjectNumber",
        "name", "customer.fullname", "projectManager.displayName", "startDate", "deadline" }),
    @CustomizableListDefault(view = "", columns = { "idNumber", "customerProjectNumber", "name",
        "customer.fullname", "projectManager.name", "totalCostDisplay", "totalAgreedDisplay", "startDate",
        "deadline" }) })
public class Project {
```

- **Consistent, easily maintainable code**

Great, but...

Name	Address, street	Address, city	Address, country
GazProm	16 Nametkina St.	Moscow	Russian Federation
Google	2590 Pearl Street, Suite 100	Boulder, CO 80302	USA



we would prefer to have address in one column in two lines and some colours...

Name	Address
GazProm	16 Nametkina St., Moscow, Russian Federation
Google	2590 Pearl Street, Suite 100, Boulder, CO 80302, USA

Your customer is the ultimate judge of your solution

- Extends customizable tables' column meta-model with artificial column
- Definition includes:
 - localizable name
 - Velocity script exploiting domain model
 - html / raw mode
 - access role
- Available in each view (also as a sub element)
 - e.g. defined for customer but accessible in project browse
- Enables „collection attributes” access

*A long time ago in a
configuration far, far away....*

Class Name	Project			
Name	Address1 *			
Localised Name	Language	Localised Name	Edit	Delete
	Polish	Adres		
	<input type="button" value="Add Localised Value"/>			
Type	HTML ▼ *			
Role Name				
Expression	<pre> #set(\$country1 = "Poland [PL]") #if(\${this.customer.address.country} == \$country1) \${this.customer.address.address}, \${this.customer.address.address2}
 \${this.customer.address.city}, \${this.customer.address.country} #else \${this.customer.address.address}, \${this.customer.address.address2}
 \${this.customer.address.city}, \${this.customer.address.country} #end </pre>			

Virtual columns – result (2010)

XTRF 2.5

System

Browse Projects

DEBUG INFORMATION

Projects List

ID Number	Name	Cust
2011/101	test bundli	Really
2011/100	test	Honorata Gus
2011/99	test	Honorata Gus
2011/98	test	"Sesil"
2011/97	moj projekt	Castor Co
2011/94	TEST	Amelit Tour A
2011/93	waed asdsafd	Honorata Gus
2011/92	f sdf sdfsd	Anna i Monika
2011/91		"Sesil"
2011/90		Wert We Rwe

Columns Editor

Columns Filter

Name default-DR

Default

Shared with Users Customers Providers

Column Selection Tree

- Project
 - ☒ Address1 (Virtual)
 - Categories
 - Contact Person
 - Currency
 - Customer
 - Customer Price Profile
 - Customer Project Number
 - Customer Special Instructions
 - Dashboard Note
 - Day
 - ☒ Deadline

Expand All

Collapse All

Column Order

- ID Number
- Name
- Customer, Full Name
- Address1 (Virtual)
- Project Manager, Name
- Total Cost
- Total Agreed
- Start Date
- Deadline

Move Up

Move Down

Remove

Sort by Default

customer

History English (UK)

Search

ult-DR

Customise

Start Date	Deadline	Edit	Delete
11-11-08	2011-11-11 17:00		
11-11-04	2011-11-18 17:00		
11-11-04	2011-11-04 17:00		
11-11-03	2011-11-24 17:00		
11-11-02	2011-11-16 17:00		
11-10-31	2011-10-31 17:00		
11-10-26	2011-10-26 17:00		
11-10-25	2011-10-25 17:00		
11-10-24	2011-11-14 12:26		
11-10-24	2011-10-27 17:00		

Virtual columns – result (2010)

XTRF 2.5

System Provider Customer Quote Project Invoicing ISO9001 CRM Help Customer Search

Browse Projects

DEBUG INFORMATION

Projects List Add New page 1 of 57 (566 items) Export Refresh default-DR Customise

ID Number	Name	Customer	Address1	Project Manager	Total Cost	Total Agreed	Start Date	Deadline	Edit	Delete
		Full Name		Name	Σ	Σ				
2011/101	test bundli	Really	Shotr Street 10, Small city, Grenada [GD]	tede	0,00 zł	0,00 zł	2011-11-08	2011-11-11 17:00		
2011/100	test	Honorata Gustlik	Jordana 12/44b,Nowa Wiocha Lublin, Poland [PL]	sandra	24334,67 zł	7253,25 zł	2011-11-04	2011-11-18 17:00		
2011/99	test	Honorata Gustlik	Jordana 12/44b,Nowa Wiocha Lublin, Poland [PL]	sandra	4535,58 zł	0,00 zł	2011-11-04	2011-11-04 17:00		
2011/98	test	"Sesil"	Dolna 5, Bratislava, Slovakia [SK]	sandra	1846,02 €	0,00 €	2011-11-03	2011-11-24 17:00		
2011/97	moj projekt	Castor Co	plac Niepodległości 23, Lublin, Poland [PL]	wrobe	40,00 €	70,00 €	2011-11-02	2011-11-16 17:00		
2011/94	TEST	Amelit Tour Agency	Street 439 a, Vilno, Latvia [LV]	aw	0,00 ls	10,00 ls	2011-10-31	2011-10-31 17:00		
2011/93	waed asdsafd	Honorata Gustlik	Jordana 12/44b,Nowa Wiocha Lublin, Poland [PL]	sandra	0,00 zł	34,00 zł	2011-10-26	2011-10-26 17:00		
2011/92	f sdf sdfsd	Anna i Monika G. sp. j.	Świąteczna 5, Miastko, Poland [PL]	db	0,00 €	25,00 €	2011-10-25	2011-10-25 17:00		
2011/91		"Sesil"	Dolna 5, Bratislava, Slovakia [SK]	lukasz	0,00 €	0,00 €	2011-10-24	2011-11-14 12:26		
2011/90		Wert We Rwe	2 Long St.,City London, United Kingdom [GB]	pz	0,00 €	0,00 €	2011-10-24	2011-10-27 17:00		

Searching Criteria – Filters (2008)

Search project

Project ID:

Customer project number:

Status: Any

Project Name:

Source lang.: Any

Target lang.: Any

From: (yyyy-MM-dd)

To: (yyyy-MM-dd)

In: Start date

Project Manager: Any

Customer Name:

Clear filter

Search and export to CSV

Export details to CSV

Search

Project list • 2 items

Customize view

ID number	Name	Total cost	Total agreed	Languages	Currency	Deadline	Edit	Delete
2011/2	dddddd	0,00 \$	0,00 \$	AB » AR, AB » HY, AB » SQ, AB » AM,	American Dollar [\$]	2011-11-05		
2011/1	test	0,00 \$	0,00 \$	AB » AY,	American Dollar [\$]	2011-11-05		

- Hard to compose an attractive appearance
- Get broken with long name in some localizations
- Less and less space for results
- Ever-growing customers expectations
 - PM, customer (city, country), language, dates,....

Filtering insides

```
public interface GenericFilterableService
    <E extends VersionedEntity, F extends GenericFilter<E>> {

    List<E> getAll(final F filter) throws DataAccessException;
    List<Long> getAllIds(final F filter) throws DataAccessException;
    //more generic CRUD operations here
}
```

```
public interface ProjectService extends
    GenericFilterableService<Project, ProjectFilter> {
    //more project specific methods here
}
```

```
public class ProjectFilter implements GenericFilter<Project> {

    private String customerName;
    private Date startdateUpperLimit;
    private Date startDateDownLimit;
    private XtrfUser projectManager;
    // more fields and methods for storing filter data

    public CriteriaWrapper getCriteriaWrapper() {
        CriteriaWrapper criteriaWrapper = getCriteriaWrapper();

        criteriaWrapper.addIlikeAnywhereRestriction("customerName", customerName);
        criteriaWrapper.addBetweenRestriction("startDate", startDateDownLimit, startdateUpperLimit);
        criteriaWrapper.addEqRestriction("projectManager", projectManager);
        // lots of fields skipped
        return criteriaWrapper;
    }
}
```

- Allow customer to define filter view
 - Fixed / default values
 - Hidden fields
 - Date limiters
 - Multi/single selects
 - Auto values
 - Limit number of results
- Reduce the implementation of filters to Filter's class **interface**
- Move all filters to the left for easy GUI composition

```
@FilterDefaultViews(  
    @FilterDefaultView({  
        GROUP_PROJECT,  
        "customerName",  
        "projectManager",  
        GROUP_START_DATE,  
        "startDate",  
    })  
)  
  
public interface ProjectFilter extends GenericFilter<Project> {  
  
    @FilterHibernateMapping(value={"customer.name", "customer.fullname"}, type=FilterHibernateMappingType.OR)  
    @FilterPropertyAvailableToUser  
    StringLimiter customerName();  
  
    @FilterHibernateMapping("startDate")  
    @FilterPropertyAvailableToUser  
    DateLimiter startDate();  
  
    @FilterHibernateMapping("projectManager")  
    @FilterPropertyAvailableToUser  
    VersionedEntityLimiter<User> projectManager();  
}
```

```
public interface GenericFilter<E> {  
    // some methods skipped  
    Iterator<GenericProperty> iterator();  
    PropertyContainer getPropertyContainer();  
    CriteriaWrapper getCriteriaWrapper();  
}
```




demo

Filtering - result

Search Clear Filter

Project

ID Number *

Status
Opened
Closed
Cancelled

Name

Customer Name

Customer Project Number

Individual Customer Any

Project Manager Any

Task Specialisation Any

Provider Name

File Name

Search Clear Filter

Columns Editor

Columns Filter

☒ Filter Expanded ☒ Clear Filter when Selecting This View

Group: Project

ID Number

Type: Text field

Settings: ☐ Hidden ☐ Fixed ☐ Default

Default Value: Empty

Status

Type: Listbox

Settings: ☐ Include Any ☐ Default

Default Value: Empty

Name

Customer Name

Customer Project Number

Individual Customer

Project Manager

Task Specialisation

Provider Name

File Name

Available fields...

Create Group Expand All Items Collapse All Items

Save Reset to Defaults Cancel

default-DR

Agreed Start Date Deadline Edit Delete

0,00 zł	2011-11-08	2011-11-11 17:00		
7253,25 zł	2011-11-04	2011-11-18 17:00		
0,00 zł	2011-11-04	2011-11-04 17:00		
0,00 €	2011-11-03	2011-11-24 17:00		
70,00 €	2011-11-02	2011-11-16 17:00		
10,00 ls	2011-10-31	2011-10-31 17:00		
34,00 zł	2011-10-26	2011-10-26 17:00		
25,00 €	2011-10-25	2011-10-25 17:00		
0,00 €	2011-10-24	2011-11-14 12:26		
0,00 €	2011-10-24	2011-10-27 17:00		

Filtering - result

XTRF 2.5

System

Use Projects

BUG INFORMATION

arch Clear Filter

ect

umber *

tus Opened

section

ject Manager Dominik Radziszowski

arch Clear Filter

Columns Editor

Columns Filter

☒ Filter Expanded ☒ Clear Filter when Selecting This View

Group: Project

ID Number

Status

Available fields...

Group: JDD section

Project Manager

Type Combobox

☐ Hidden

☒ Fixed

Settings ☒ Include Any

☐ Include Not Active

☒ Default

Default Current User

Value Value admin admin

Contact Person, Customer, Accountancy Contact, E-mail

Available fields...

Available fields...

Categories

Contact Person, Active

Contact Person, Address, Province, Active

Contact Person, Address, Province, Country

Contact Person, Categories

Contact Person, Customer, Accountancy Contact, Active

Contact Person, Customer, Accountancy Contact, Categories

Contact Person, Customer, Accountancy Contact, Customer Category

Contact Person, Customer, Accountancy Contact, Customer Country

Contact Person, Customer, Accountancy Contact, Customer First Contact Date

Contact Person, Customer, Accountancy Contact, Customer ID Number

Contact Person, Customer, Accountancy Contact, Customer Name

Contact Person, Customer, Accountancy Contact, Customer Price List

Contact Person, Customer, Accountancy Contact, Customer Status

Contact Person, Customer, Accountancy Contact, Gender

Contact Person, Customer, Accountancy Contact, Individual

Contact Person, Customer, Accountancy Contact, Name

Contact Person, Customer, Accountancy Contact, Person Properties

Contact Person, Customer, Accountancy Contact, Sales Person
















CRM

Help Custom

Export Refresh default-DR

	Project Manager	Total Cost	Total Agreed	
	Name	Σ	Σ	
UJ	radzisz	0,00 €	0,00 €	2
	radzisz	0,00 €	0,00 €	2
222,ul inna	radzisz	1476,00 rph.	0,00 rph.	2
	radzisz	0,00 zł	13501,23 zł	2
	radzisz	1049,74 \$	6024,58 \$	2

User: radzisz, l

System Provider Customer Quote Project Invoicing ISO9001 CRM Help Customer Search

Browse Projects

DEBUG INFORMATION

Search Clear Filter

Project
ID Number *
Status Opened

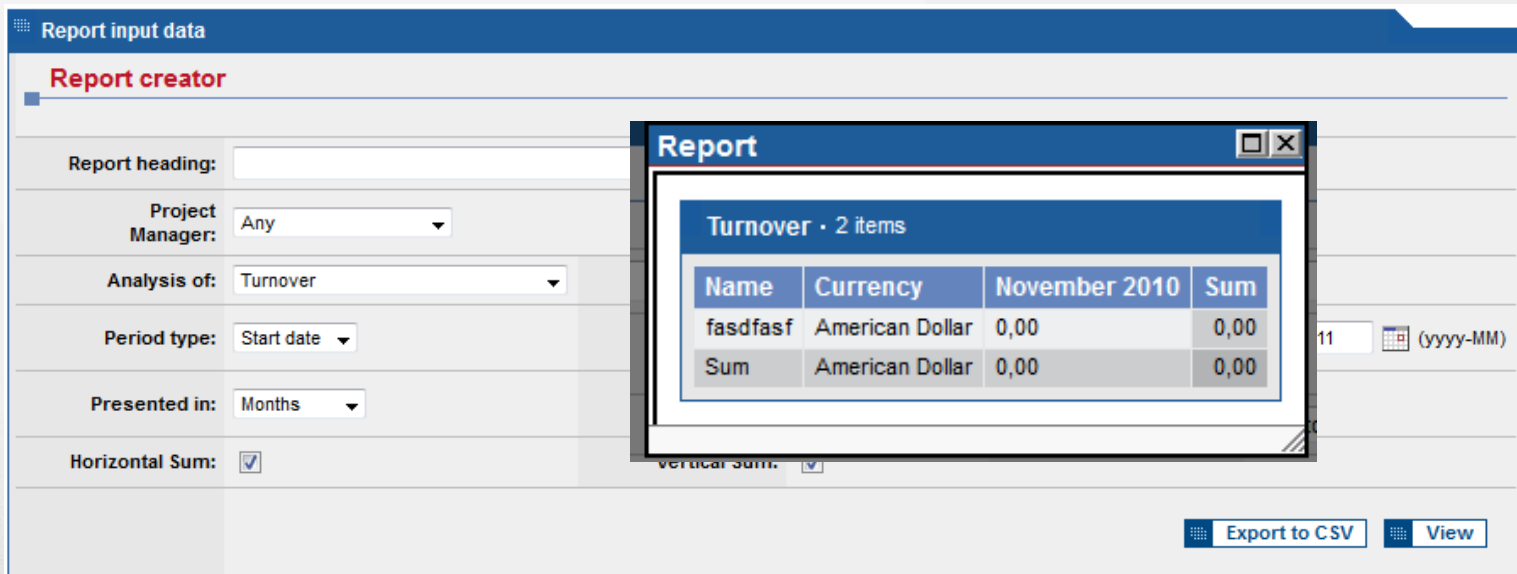
JDD section
Project Manager Dominik Radziszowski
Contact Person, Customer, Accountancy Contact, E-mail

Search Clear Filter

Projects List Add New 5 items Export Refresh default-DR Customise

- **Initialized on system start-up**
 - filter consistency validation
 - filter implementation generation
- **Ultra effective and consistent code**
 - creation of a new filterable property:
 - domain class and filter interface modifications
 - proper annotations
 - migration script for db (out of scope)
 - no more broken queries
 - e.g. addressing badly refactored attributes
- **Extreme flexibility**
 - sub-filters
 - persistent
 - sharable
 - filter subscriptions (email notifications)

- Hardcoded
- Poorly parameterized
- Limited
- Write your own reports if you know HQL...
 - but DB schema/OO model evolution



The screenshot shows the 'Report creator' interface. On the left, there are input fields for 'Report heading', 'Project Manager' (set to 'Any'), 'Analysis of' (set to 'Turnover'), 'Period type' (set to 'Start date'), 'Presented in' (set to 'Months'), and 'Horizontal Sum' (checked). A 'Report' window is open in the center, displaying a table titled 'Turnover - 2 items'. The table has four columns: 'Name', 'Currency', 'November 2010', and 'Sum'. It contains two rows: one for 'fasdfasf' and one for 'Sum', both with a value of '0,00' in the 'November 2010' column. At the bottom right of the interface, there are buttons for 'Export to CSV' and 'View'.

Name	Currency	November 2010	Sum
fasdfasf	American Dollar	0,00	0,00
Sum	American Dollar	0,00	0,00

- Allow user to define own reports using GUI
- Base reports definition on the entire domain model
- Table like reports and charts
- Aggregation functions (number of, value, relation)
 - Defines report content (e.g. project ROI, number of projects, projects total etc.)
 - Defines the base entity for the report (Project, Invoice etc.)
- Columns and rows grouping
 - per customer, per PM, in given time: weekly, monthly
- Filtering
 - Include only VIP customer, only finished projects, etc.
- Individual access rights

System
Provider
Customer
Quote
Project

Create - Financial Report

DEBUG INFORMATION

Report Definition

Report D

Name

Localised Name

Category

Preferred

Report Type

Data Type

Save Cancel

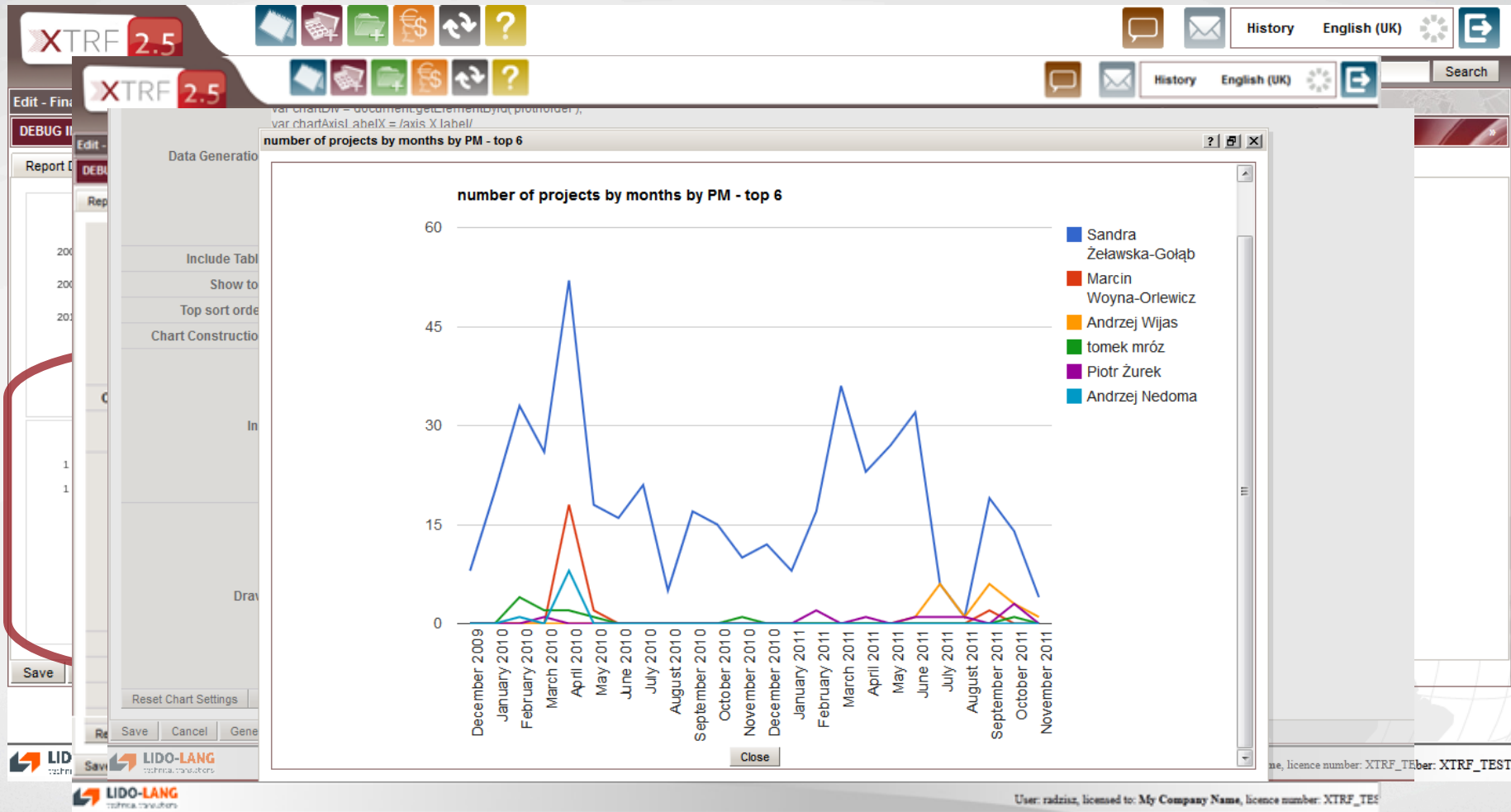
number of projects by months by PM

Generated by XTRF™ on 2011-11-15 23:06

Start Date	Project Manager																	
	Andrzej Nedoma	Andrzej Wijas	Andrzej Wijas	bla bla	Daniel Bochniak	Dominik Radziszowski	Kasia Nowak	Lada Ladenko	Lukasz Wiktor	Maciek Wrobel	Marcin Woyna-Orlewicz	Marta B	Piotr Żurek	Sandra Żelawska-Gołąb	Stanisław Zalewski	tede tede	tomek mróz	Łukasz Kaleta
December 2009	0	0	0	0	0	0	2	0	0	0	0	0	0	8	0	0	0	0
January 2010	0	0	0	0	0	0	0	0	0	0	0	0	0	20	0	0	0	0
February 2010	1	0	0	0	0	0	0	0	0	0	0	0	0	33	0	0	4	0
March 2010	0	0	0	0	0	0	0	0	1	0	0	0	1	26	1	0	2	3
April 2010	8	0	0	0	0	0	0	0	0	0	18	0	0	52	0	0	2	2
May 2010	0	0	0	0	0	0	0	0	0	0	2	0	0	18	0	0	1	0
June 2010	0	0	0	0	0	0	0	0	0	0	0	0	0	16	0	0	0	3
July 2010	0	0	0	0	0	0	0	0	0	0	0	0	0	21	0	0	0	1
August 2010	0	0	0	0	0	0	0	0	0	0	0	0	0	5	0	0	0	0
September 2010	0	0	0	0	0	1	0	0	0	0	0	0	0	17	0	0	0	2
October 2010	0	0	0	0	0	0	0	1	0	0	0	0	0	15	0	0	0	3
November 2010	0	0	0	0	0	0	0	0	0	0	0	0	0	10	0	0	1	0
December 2010	0	0	0	0	0	0	0	0	2	0	0	0	0	12	0	0	0	1
January 2011	0	0	0	0	0	0	0	0	0	0	0	0	0	8	0	0	0	0
February 2011	0	0	0	0	0	0	0	0	0	0	0	0	2	17	0	0	0	7

Sum
Frequency Type: Month
Sort Order: Default ascending

Reporting – charts (2011)



- 130+ installations all over the World
- 15+ full localizations
- 25+ languages supported
- Ranked in the top 3 system in this market
- Own capital

We are offering localization expert services
and are open for partnerships ☺

The Core Team





From a long-term perspective,
flexibility is worth the effort.

Dominik Radziszowski
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