



# Using Protégé in a Domain-Driven Software Product Development Process

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the way you work™

# Agenda

- HR / Compensation Planning Domain
  - Figuring out what raises to give people is simple, right?
- Use of Protégé on key Workscape project
  - Extensions and customizations
- Benefits
  - “We know what an ontology is now, and...”
- Challenges
  - How can we get beyond “this is cool...”?

# Workscope Overview

Workscope provides **benefits administration** and **workforce management** solutions designed to be used by your company's workforce that readily adapt to your company's business processes

- Comp Planning key piece of Workforce Management
- Focus on larger companies (10K Employees +)
- Workscope itself has about 500 Employees

# Representative Workscope Clients

Automotive



DAIMLERCHRYSLER

Financial Services



Health/Insurance



Technology



Consumer/Retail



Manufacturing/Distribution



Transportation



Telecommunications



Government/Defense





# Sample Comp Planning Screen

Compensation - Microsoft Internet Explorer

File Edit View Favorites Tools Help

Address C:\Work\Workspace\CP51Demo\appletLauncher.html

Welcome, Taylor Dunning, today is Thursday, May 20, 2004

## Compensation

**Direct Reports**   **Group Summary**   **Sorting & Analysis**

Plan: Corporate Plan   Period: Calendar Yr 2004   Cycle: Annual   Manager: Dunning, Taylor

[How Do I Get Started?](#)   [View Compensation Guidelines](#)

Direct Reports   View in: System Currency (USD)

Name	Job Title	Curr Code	Current Salary	C/R	Perf Rtg	Merit %	Merit Amt	Adjustment %	Adjustment Amt	Promo %	Promo Amt	Incentive Pay Bonus Amt	Stock #	New Salary	C/R
<a href="#">Dover, James</a>	Admin	USD	20,500	84	E	6.00	1,230							21,730	89
<a href="#">Duncan, Anne</a>	Mrg-Voice	USD	57,692	86	M							0		57,692	86
<a href="#">Evans, Nicole</a>	Dir VOIP	USD	85,750	91	M							0		85,750	91
<a href="#">Friedman, Jason</a>	Mgr-Comm	USD	62,500	94	M							0		62,500	94
<a href="#">Johnson, Mike</a>	Network Mgr	USD	65,000	97	E							0		65,000	97
<a href="#">Reilly, Tim</a>	Sr. PM	USD	46,320	105	M							0		46,320	105
<a href="#">Simpson, Charlo</a>	Director QA	USD	89,500	95	P							0		89,500	95
<a href="#">Singh, Deepak</a>	Prog Mgr	USD	52,300	119	M							0		52,300	119
<b>Totals</b>			479,562			0.26	1,230	0.00	0	0.00	0	0	0	480,792	

**Auto Allocate**

**Reporting & Analytics**

[View Reports](#)  
[Create Comp Statement](#)

Totals	View in:	System Currency (USD)	Current Salaries	Merit %	Merit Amt	Adjustment %	Adjustment Amt	Promo %	Promo Amt	Incentive Pay Bonus Amt	Stock #	New Salaries
<b>Budgeted</b>			3.73	17,882	0.50	2,398	1.28	6,119	166,366	2,676		
<b>Allocated</b>			479,562	0.26	1,230	0.00	0	0.00	0	0	0	480,792
<b>Available</b>			3.47	16,652	0.50	2,398	1.28	6,119	166,366	2,676		

**Save & Close**

Applet com.workscape.compplanner.applet.CompPlanner started

Start   My Computer   10:42 AM

# Project Goals

- Better support “the way you work”
  - Easily accommodate complex, variable compensation programs
  - Integrate program configuration and program planning
  - “Nail the domain”
- Move product from
  - Custom-coding to configuring planning solution
  - 1 hierarchy to multiple hierarchies
  - Element customization to element templating
  - Hard-coded budgets to flexible/modeled budgets
  - Customizing the planning UI to (partially) generating the UI

## Customizations / Extensions for Project

- Modeled key comp planning domain concepts
- Created a metaclass to trace Protégé model classes back to the functional areas of the product and other requirements gathering tools
- Experimented with Modeling UI constructs in Protégé classes to create forms showing more aggregated data
  - Would like to experiment with Owl Wizard as well
- Graph Widget used to model hierarchical relationships



# UI Classes

The screenshot shows the Protégé 2.0.1 IDE interface. The main window displays a class hierarchy on the left and a preview of a 'Direct Reports View' instance on the right.

**Class Hierarchy (Left Panel):**

- UI Construct
  - UI Element
    - Global UI Element
      - Menu (3)
      - Widget (6)
  - UI Template
    - Notification Template (3)
    - Comp Notice Template (1)
    - Employee Profile Template (4)
  - UI Zone (5)
  - User Task (10)
  - View
    - Administration Environment View
    - Approval Path View (1)
    - Budget Transfer View
    - Comp Entry Record View
    - Comp Report View (2)
    - Compensation Notice View
    - Direct Reports View (2)
    - Element Eligibility Definition View (1)
    - Employee Data Discrepancy View
    - Employee Profile View (1)
    - Group Summary View (1)
    - Homepage View
    - Maintain Plan Settings View (1)
    - Performance Measure Distribution View (1)
    - Planning Environment View (1)
    - Project Award View
    - Report Library View

**Class Details (Middle Panel):**

- Class:** Direct Reports View
- Display Slot:** associated program
- Direct Instances:** Special Retention Merit Program, William's Program

**Instance Preview (Right Panel):**

**William's Program** (type=Direct Reports View, name=Arizona\_Insta...)

Your Direct Reports are shown below.

Decision Support

Program: William's Program | Manager: William Firestone

**Your Direct Reports**

Name	performance rating	CompaRatio	em
William's Sample UK ...	M-Marginal (21-40)		
William's Sample US ...	O-Outstanding (105-1...		

**Plan Your Awards**

associated employee	associated element	award val
William's Sample US Report	William's Org's Merit Elem...	5000.0
William's Sample UK Report	William's Org's Merit Elem...	2500.0

**Currency View Specification:** LOCALCURRENCY | View Group Summary

**Activity Date:** [Empty Field]

**Associated Organization:** [Empty Field]

# Organizational Hierarchy Example

Arizona Protégé 2.0.1 (C:\Program Files\Protege\_2.0\projects\Arizona.ppr, Standard Text Files)

Project Edit Window Help

Classes Slots Forms Instances Queries Classes & Instances Ontoviz Knowledge Tree Instance Tree

Class TorqueSpace Consolidation - Claire (CEO) (type=Hybrid Hierarchy, name=Arizona\_Instance\_100019)

Multi-Type Hierarchy

Country  
Division  
Function  
Region  
Department

Effective Date

Associated Organization

Number Of Levels

Has Org Part

Expiration Date

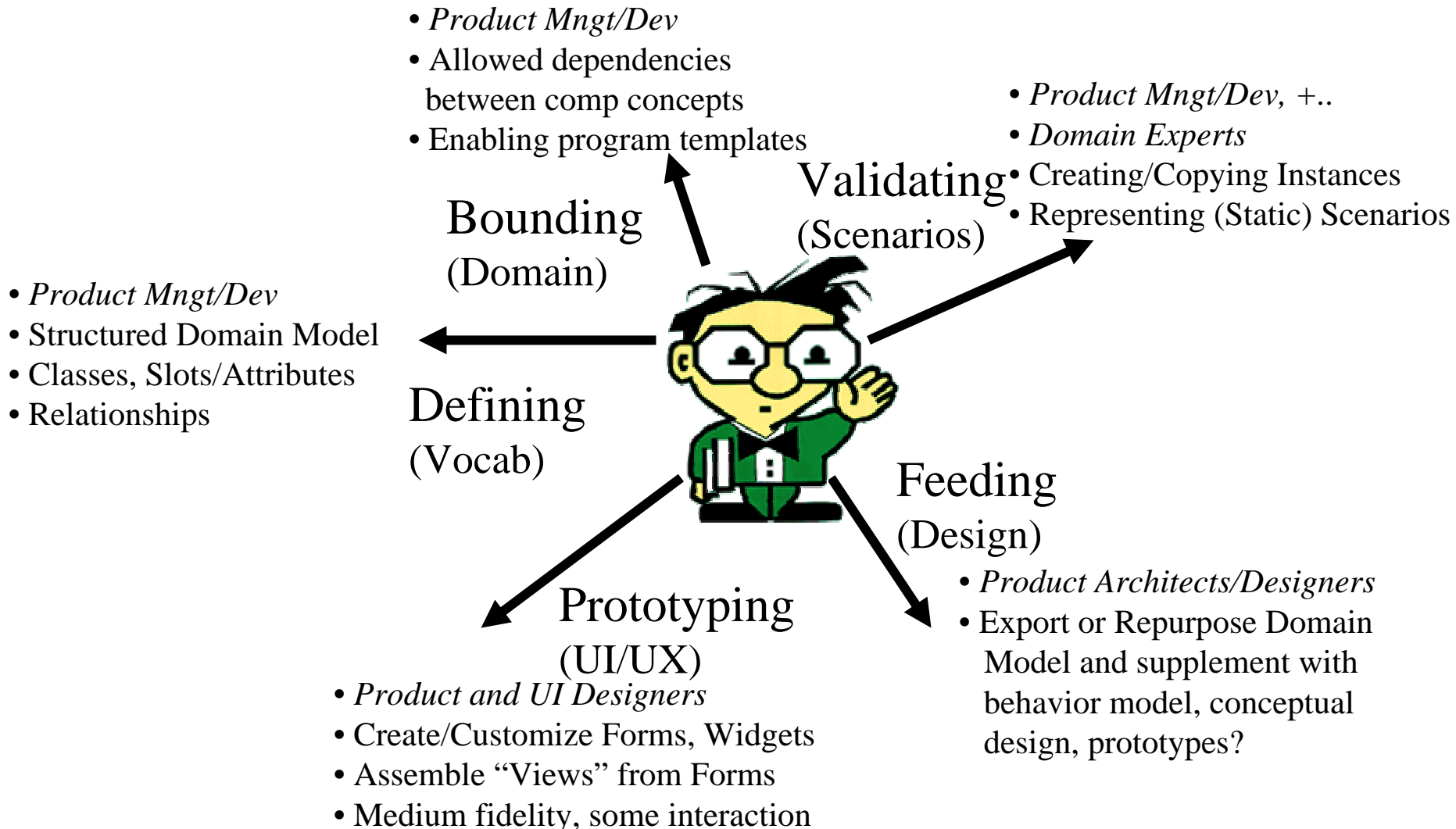
Associated Org Definition Str

Start P... C... P... a... I... M... S... P... A... 7... 5:52 PM

# Domain Model Metrics

- 177 Classes
- 267 Slots
- 595 Instances
- 1040 Frames

# Benefits of Using Protégé on Project



# Challenges to Getting Benefits From Protégé

- Incorporating “yet another tool”
- Integration with Rational Rose perceived as incomplete
- Insufficient time allotted to allowing product managers and engineers to digest and “own” the model
- One champion is not enough to institutionalize use of the tool
- Prototyping, requirements clarification was a success, transition to implementation model less so