



ENDANGERED



BANDICOOTS

SLOW
DOWN



XP

Down

Under

A user story..

What's it like to do eXtreme Programming upside down?



Ozzie Slang

- Avoid *whingeing* and *rorting*.
- Turn any *yobbo* into a *tall poppy*
- Don't be a *bludger*.
- Open the *esky*. Grab a *tinny*.
- *Bo peep* why there's *no flies on us*.

State of SW Development



WARNING:

This is a best case XP story

- My previous project was updating an existing application with 2 Million+ lines of C/C++ code
- I was not thrilled with the management ...or the process
- **This** was a clean slate project
 - we used the right technologies
 - had management buy-in
 - had Stellar People

Talk Plan

- **Outside:
the Context**
- **Inside:
the XP Story**

The Development Context

- Memetrics is a "clean slate" startup
- World class interdisciplinary team
- Automating Discrete Choice Modeling
- Experiments
- Aiming for Fortune 1000 Customer
=> 24/7 Reliability
with Integration into
Customer Environments

EVERY BUTTON CLICK IS A CHOICE MEASURING RELATIVE INTEREST


BROWSER MENU


Back Forward Reload Home Search Netscape Images Print Security Stop


Location: What's Related

W M MORRIS *Welcome to the W M Morris Financial Advisory Network*






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Should we believe all the hype associated with internet stocks? Is the net community over-valued and heading for a bust? Here's some advice on what to look for in internet stocks...

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New legislation has made it easier to set up your own investment portfolio. Here's a great guide from Paul Clithroe on how you can start your own portfolio for as little as \$1,500...

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Your first home is probably the biggest financial commitment you'll make. Make sure you get it right. Our guide to making a success of your first home purchase is right here...

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 SPECIAL OFFER 1 Free financial planner	 SPECIAL OFFER 2 No fee roll-over switch	 Your insurance checklist	 Planning your financial future special toolkit	 Guide to all our services
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LINK BUTTONS

HYPERLINK

NAVIGATION MENU

Internal Details Elided



Requirement:

- hit the databases
- analyze the available info
- process the model
- compute best content
- serve the dynamic content

anywhere in the world
in under a tenth of a second



Best People

Best Practices

Best Technologies

Implementation

Requirements

- Multi-platform (NT/Solaris/Linux)
- Client Integration/Interoperability
 - Oracle/SQLServer/ODBC/...
 - Web Technologies (ASP/PHP/JSP/Perl/..)
 - CRM/CMS/ERP/DSS Integration
- Robust (24/7 support)
- Technology Stability
- Rapid Feature Evolution
 - High Productivity
 - Scalable [Feature Depth; Components; Performance]
 - Continuous Development & Testing Process

Development Process

- Use Cases (User Stories)
- Continuous Testing Process
- Developer Cross Training
- Best Practices

Technology Choices

- Need to integrate/interoperate
 - HTTP Server
 - Web GUI [HTML, GIFs, ..]
 - Customer Databases [SQL]
- Need for Strategic Advantage
 - Predictive Rules Engine
 - Modeling/Analysis

Choice of CORBA

- Mature Standard
- Stable API's
- Well Supported in Major Languages
 - Java, C++, Perl, Python, Lisp, ...
- Satisfies Design Requirements
 - Cross Platform Interoperability
 - Programming Language Interoperability

Core Implementation Technology

- Use in Fortune 1000 for 24/7 Systems
- Standard, Stable Technology
- Match to Design Requirements
- Multi-platform CORBA, SQL, etc. API's
- Rapid Development of Robust Systems
- High Programmer Productivity
- High Quality Compilers & Development Tools

Rapid Feature Evolution

- Conservative Implementation Technology Choices
 - Don't pay cost of rework to follow changing “standards”
- Continuous Development Process
 - Always have a working system
 - No high-risk integration phase
- Comprehensive Testing
 - Internal tests for all non-trivial functions
 - External tests for all exposed functions
 - All tests pass 100% all the time

Rapid Feature Evolution matches with Rapidly Changing Market Demands

- **High Productivity Development Focus**

- High Productivity =>
 Lower Development Cost
- Low Maintenance/High Reliability
- Can “patch”/repair live systems
- Lowers Risk of Change

- **Continuous, Comprehensive Testing**

- Lowers Risk of Change
- Lowers Cost of Change

Integration Technologies

- Driven by Customers
 - Clients
 - Channel Partners
- Capture and Generalize
 - Best Practices
 - Organizational Learning

24/7/365/N

You Can't Do That!

When you can't afford to fail

Common Lisp

Common Lisp Technology

- Use in Fortune 1000 for 24/7 Systems
- Standard, Stable Technology
- Match to Design Requirements
- Multi-platform CORBA, SQL, etc. API's
- Rapid Development of Robust Systems
- High Programmer Productivity
- High Quality Compilers & Development Tools

Lisp Code is Minimalist

```
(<= low-bound some-value high-bound)
```

VS

```
( (lowBound <= someValue)  
&&  
(someValue <= highBound) )
```

```
(f x y z)
```

VS

Generic Functions

;; When we enter the push button's region, arm it.

```
(defmethod handle-event ( (pane ellipse-push-button)
                          (event pointer-enter-event) )
  (with-slots (armed) pane
    (unless armed
      (let ( (pointer (pointer-event-pointer event)) )
        (if (and (pointer-button-state pointer)
                 (not (zerop (pointer-button-state pointer))))
            (progn
              (setf armed :active)
              (with-sheet-medium (medium pane)
                (highlight-button pane medium)))
            (setf armed t)))
        (armed-callback pane (gadget-client pane) (gadget-id pane))))))
```

;; When we leave the push button's region, disarm it.

```
(defmethod handle-event ( (pane ellipse-push-button)
                          (event pointer-exit-event) )
  (with-slots (armed) pane
    (when armed
      (when (progl (eq armed :active) (setf armed nil)))
        (with-sheet-medium (medium pane)
          (highlight-button pane medium)))
    (disarmed-callback pane (gadget-client pane) (gadget-id pane))))))
```

Multiple Inheritance

```
;;; SIMPLE-SLIDER
```

```
(defclass simple-slider
  (range-gadget-mixin ; provides min & max
   value-gadget       ; provides gadget-value
   leaf-pane          ; provides drawing surface
   space-requirement-mixin)
  ((tick-length :initform 5 :initarg :tick-length)
   (tick-number :initform 5 :initarg :tick-number)))

(defmethod handle-event ( (pane simple-slider)
                          (event pointer-motion-event) )
  (when (logtest (pointer-button-state (pointer-event-pointer event))
                +pointer-left-button+)
    ;; User is trying to drag. Change the value.
    (let* ( (x (pointer-event-x event))
            (width (bounding-rectangle-width pane))
            (min-value (gadget-min-value pane))
            (max-value (gadget-max-value pane))
            (value (+ min-value
                      (* (/ (float x) width)
                         (max-value min-value)))) )
```

Aspect Oriented Unwinds

```
(corba:define-method op:activate ((self api-manager) token)
  "Activate the specified object referenced by token."
  (with-safe-return-handler (op:activate self token)
    (with-transaction* ()
      (with-known-object (obj token)
        (activate obj)))
    (operational-constraint-violation (err)
      (error 'BULLSEYE:OperationalConstraintViolation
        :why (reason err)))))
```

- ;; `with-safe-return-handler` is a handler-case which throws some well known CORBA exceptions
- ;; when it catches anything weird (e.g. Unknown, DBOperationFailed).
- ;; `with-known-object` finds the persistent object, and raises UnknownObject if not found.
- ;; `with-transaction*` ensures atomicity, reverts persistent objects to their original state if
- ;; a transaction fails, and notifies objects which so desire that transaction has been successful.

Before and After; MOP

;; This will change the persistent (db) representation.

;; Note that it looks just like CLOS (no SQL in sight)

;; This is done via the MetaObject Protocol.

```
(defmethod activate ((self content-space))  
  (setf (active? self) t))
```

```
(defmethod activate :after ((self content-space))  
  (request-successful-transaction-notification self))
```

```
(defmethod notify-successful-transaction ((self content-space))  
  (walk-over-active-allocators (alloc)  
    (op:refresh_content_spaces alloc (list (oid self)))))
```

The XP Story



The XP Story

- Working Prototype (VB/VC++ Win only)
- 1 SW Architect
- 1 Project Manager
- 2 months work on
 - User Stories Collection/Generation
 - Architecture Design
 - Prototyping [CORBA, Macros, Testbed]
- No Production Code

The XP Story

- I came as a consultant/pro to
 - Validate Design & Process
 - "Get things started"

The XP Story

- My 3rd day the architect and I started production code
- 2 people make a pair!

The XP Story

- Under 1 year to install CD-ROM
- Typical team size: 6
- 2..3 week iterations [often completed early]
- Swapped pair partners each iteration
- Identical Development Environment account on each workstation
 - Walk up to any machine in bull pen
 - Do a checkout
 - Start writing code/tests

The XP Story

- The people were world class
- We were all "less than perfect" typists!
- Very Intense 8 hour days
 - No EMail
 - No Web browsing
 - Quick Lunches
 - We loved it!
- XP -> CTO => 40 -> 60 hour weeks
 - Not nearly as much fun! 8^(

The XP Story

- Input
 - XP Installed
 - XP web sites
 - I Talked first with Ward Cunningham

The XP Story

- Communication [US/UK/Oz sales]
 - => Secure Web Access
 - User Stories w priorities and status
 - Glossary / Story Dictionary
 - Issues Log [live/interactive]
 - Design Documents & Diagrams
 - Security Policies
 - Milestones, Project Plan ...

File Edit View Insert Format Tools Data Window Help

New Open Save Print Preview Cut Copy Paste Undo Find Replace Spelling Sum Function Ascending Descending Filter MagicGraph MagicText 100%

Arial (Western) 14 Bold Italic Underline Left Center Right % 0 .00 Currency Background Font Borders Format

Version 1.0

	A	B	C	D	E	F	G	H	I	J
1	Version 1.0	Core Est	UI Est	Other Cost	Necessary HC Feature	UI Necessary	Core Cost	UI Cost	Other Cost	Total Cost
2	Setup Stories	0	0	0	1	1	0	0	0	0
3	XOS HTTP Server Installation [Story HC1] [Approved by Product Group 6-Dec-00] [Cost: 0]	0	0	0	1	0	0	0	0	0
4	XOS HTTP Server Installation Test [Story HC2] [Approved by Product Group 6-Dec-00] [Cost: 0]	0	0	0	1	0	0	0	0	0
5	Administrator Installs an Allocator on a new machine. [Core Approved][Core Story 43] [Cost: N/A for HC]	0	0	3	1	0	0	0	3	3
6	Allocator runs Installation Test [Core Approved][Story HC50] [Cost: N/A for HC]	0	0	2	0	0	0	0	0	0
7	Administrator Installs CS Layer [Story HC 51] [Cost: 5 Pair Days]	5	0	15	1	1	5	0	15	20
8	Administrator Tests Remote Connectivity to XOS HTTP Server [Story HC3] [Approved by Product Group 6-Dec-00] [Cost: 0]	0	2	5	1	0	0	0	5	5
9	Administrator and Customer Webmaster install XOS folder off root of Customer Website [Story HC55] [Cost 0]	0	0	0.5	1	0	0	0	1	1
10	Administrator and Customer Webmaster install XOS enabling code on Customer pages [Story HC4] [Approved by Product Group 6-Dec-00] [Cost 0]	0	0	2	1	0	0	0	2	2
11	Administrator Registers Enabled Pages with XOS HTTP Server and Tests Behaviour Capture and Redirection. [Story HC5] [Approved by Product Group 6-Dec-00] [Cost: Core 0, UI ??]	0	1	1	1	0	0	0	1	1
12	Administrator initiates Data Acquisition processes to capture Z's and Y's [Story HC11] [Approved 12-Dec-00] [Cost: Core 0, UI ??]	0	0	1	1	0	0	0	1	1
13	Administrator Starts Redirection and Associated Data Capture [Story HC53][Not Approved] [Cost: Core 0, UI ??]	0	0	0	1	0	0	0	0	0
14	Administrator Conducts Allocator Null Test [Story HC56] [Cost: Core 0, UI??, Reporting 2]	0	0	2	1	1	0	0	2	2
15	Consultant uses Bot to test Structure and Experimental viability of site [Story HC54][Approved 13-Dec-00 by TC, RC, DB] [Cost: Core 15, UI??]	15	0	0	0	0	0	0	0	0
16	Administrator Manages Multiple Customers [Story HC7] [Approved by Product Group 6-Dec-00] [Cost 0 for HC]	0	2	0	0	1	0	0	0	0

File Edit View Search Go Bookmarks Tasks Help Debug QA

https://looksee.memetrics.com/sr/story.asp

Bookmarks Linux Today - ... Stop loading this page EarthLink We... Google Directory LinuxApps

ID	Subject	Report	View Closed	Edit	Completed		Priority	Cost	Notes
					% CORE	% GUI			
A. Installation & Setup									
323	[Story 79] Memetrics creates XOS channel adapter.			Edit	0 %	0 %	5		Consultant box mandatory feature
322	[Story 78] Sysadmin installs XOS software on client-provided hardware.			Edit	0 %	0 %	5		Consultant box optional feature
324	[Story 80] Memetrics produces production line boxes in advance which are configurable to a specific CRM.			Edit	0 %	0 %	5	5 days	Consultant box optional feature
325	[Story 81] Memetrics installs channel adapter on client site.			Edit	0 %	0 %	5		Consultant box mandatory feature
321	[Story 77] Administrator installs and tests turnkey XOS box behind customer firewall.			Edit	0 %	0 %	5	10 day	Consultant box mandatory feature
183	[Core Story 62] Administrator runs automated test suite.			Edit	50 %	0 %	1	6	[Core Approved] [Cost 3 automated, 0 by hand]
182	[Story HC8] Installation Security Check.			Edit	0 %	0 %	1	0	[Approved by Product Group 6-Dec-00] [Cost: UI??]
B. Administration									
331	[Story 87] Memetrics administers customer XOS system remotely through a firewall.			Edit	0 %	0 %	5	5 days	Consultant box optional feature
332	[Story 88] Administrator is notified in advance of certain potential problems.			Edit	0 %	0 %	5	20 day	



Subject: [Core Story 62] Administrator runs automated test suite.

Department: User Stories

Author(s): TomC

Ref: 183

Date: Dec 1 2001

ACTIONS REQUIRED:

This issue is currently being implemented and is the responsibility of tomc. It is anticipated to be completed on .

Background

After installation, the Administrator can run a suite of tests to ensure that XOS is installed and functioning properly. This should test, at the very least, that:

- XOS Server starts
- ODS tables are present and accessible
- Allocator processes can start
- Modelling engines can start
- Run canned test rules
- Build canned test model

This should leave XOS in a clean, fresh, initialized state.

Note: Process Note: A checklist of tests incorporating these and tests mentioned in other stories should be developed to ensure that a new installation is functioning properly.

Current Status

[Core Approved][Cost 3 automated, 0 by hand]



Sample Story

1.46 Administrator runs automated test suite.

[Core Approved][Core Story 62][Cost 3]

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- XOS Server starts
- ODS tables are present and accessible
- Allocator processes can start
- Modeling engines can start
- Run canned test rules
- Build canned test model
- This should leave XOS in a clean, fresh, initialized state.

Note: Process Note: A checklist of tests incorporating these and tests mentioned in other stories should be developed to ensure that a new installation is functioning properly.

Constraint Story

1.14 Administrator Manages Multiple Customers

[Approved by Product Group 6-Dec-00][Cost 0 for HC]

The Administrator manages multiple Customers and campaigns and ensures that data captured from one client must be completely inaccessible to another, even in the case where a single visitor has been involved in experiments with 2 or more XOS customers.

Note 1: Customer-level DB security will need to be implemented in the Hosted App product so that customers can view reports without the possibility of seeing other customers' data.



>>MEMETRICS ISSUES MANAGEMENT

New

AND Search

Brief

Filter for: All Categories All Owners All Open

ID	Priority	Date	By	Category	Owner	Due	Cost	Status	Version
428	Priority: 0	Date Raised: Aug 22 2001	Raised By: David Riddle		Owner:	Date Due: Aug 29 2001	Cost:	Status	version num

[Split box and sql server](#)

Hey Kevin,

Just finished the latest test and it seems to should in the allocator log and the main xos log that there are some sql server driver problems. Apparently these are do to a known bug in microsofts sql server, the error message is:

[August 22, 9:11] DB Operation Failed: [Microsoft][ODBC SQL Server Driver][SQL Server]sp_cursorfetch: The cursor identifier value provided (4) is not valid.

The technet support article that deals with this message is:

<http://support.microsoft.com/supportkb/articles/Q175/3/13.ASP>

Let me know what you think these error messages are starting to appear quite fequently in the logs....not sure yet if they will cause a melt down but will up the pressure on the machines next time round and see if they do fail.

Dave.

Current Resolution

New

- Assign as Non Development Issue
- Submit to Product Group
- Bug Fix
- Closed - See Notes/Resolution

Change

427	Priority: 5	Date Raised: Jul 31 2001	Raised By: ICS%omc	SCR change	Owner:	Date Due: Aug 7 2001	Cost:	Status	version num
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[Remove Strata Scavenging from XOS User Interface](#)

The Product Group has decided that Strata Scavenging is not a high priority for the near to medium term. References to it should be removed from the XOS UI.

Current Resolution

New

- Assign as Non Development Issue
- Submit to Product Group
- Bug Fix
- Closed - See

New

This issue has recently been raised by email. It may either be closed as a **Non Development Issue - Open** or passed on **For Product Group Evaluation**.

Category	<input type="text"/> <input type="text"/>
Issue	Split box and sql server
Raised By	David Riddle, Aug 22 2001 Priority <input type="text" value="0 - Deferred"/>
Description	<p>Hey Kevin,</p> <p style="padding-left: 40px;">Just finished the lastest test and it seems to should in the allocator log and the main xos log that there are some sql server driver problems. Appartently these are do to a known bug in microsofts sql server, the error</p>
Owner	<input type="text"/>
Notes/Resolution	<input type="text"/>
Percentage Complete	<input type="text" value="0"/> %
Date Due	<input type="text" value="29"/> <input type="text" value="8"/> <input type="text" value="2001"/>
Expected Cost	<input type="text"/>
Reference	<input type="text"/>
Version Released In	<input type="text"/> Date Scheduled <input type="text" value="5"/> <input type="text" value="9"/> <input type="text" value="2001"/>

13 14 15 16 17 18 19 20 21 | [next page](#)

<input type="radio"/> Cost	<input type="radio"/> Status	<input type="radio"/> Version
Cost:	Status	version num
<p>New</p> <p> <input type="radio"/> Assign as Non Development Issue <input type="radio"/> Submit to Product Group <input type="radio"/> Bug Fix <input type="radio"/> Closed - See Notes/Resolution </p> <input type="button" value="Change"/>		
Cost:	Status	version num
<p>New</p> <p> <input type="radio"/> Assign as Non Development Issue <input type="radio"/> Submit to Product Group <input type="radio"/> Bug Fix <input type="radio"/> Closed - See </p>		

The XP Story: Pragmatics

- When is a story done?
- Issue Escalation
 - The Group is the final arbiter
 - Either consensus or "disagree and commit"
- All code by pairs
 - If odd number, must walk through w partner
- Out of bounds
 - Broken test suite ~1.5 month
 - Hightest Risk in Project

The XP Story: Pragmatics

- "Refactoring" has a different meaning in Lisp
- Spent more time writing tests early on than writing code
 - Investment vs Mortgage
- You know you are winning when you are removing lines of code as function is added

Summary

- I have been doing commercial SW for 20 years using all kinds of languages and processes
- This XP project has the best code quality and the best productivity I have ever seen !!!

