

Project Triage & Recovery



Blue Parabola, LLC
D. Keith Casey, Jr @caseysoftware



Who am I?

- D. Keith Casey, Jr. - @caseysoftware
- Chief Stuff Breaker, Blue Parabola
- I break stuff with the underlying goal of understanding and making it better
- Helped organize php|tek, ZendCon, formerly with DCPHP, now with AustinPHP & Flash
- Web2project Head Custodian

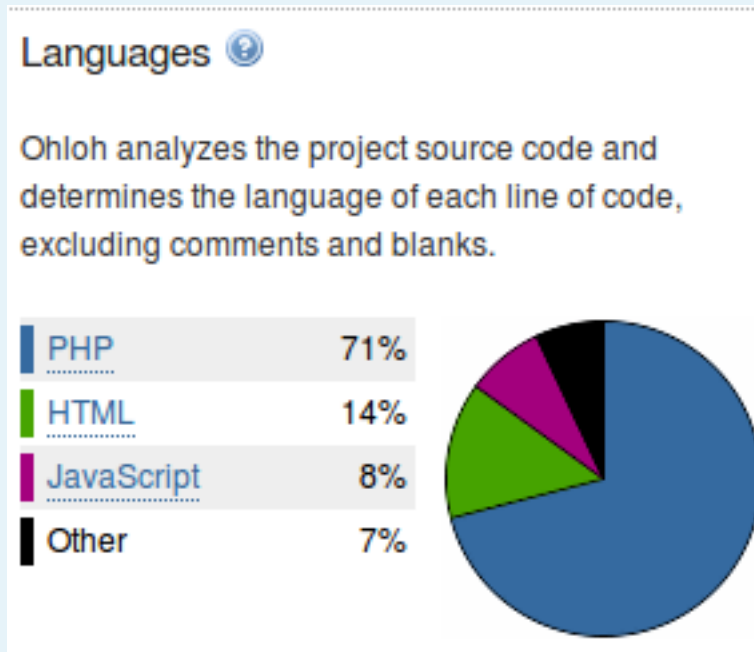


Overview

- According to some studies 95% of IT projects fail
- Demoralizing to everyone involved.. before *and* after
- In Open Source, it's even worse.
 - The difference: *projects die with a whimper*

Our Premise

- Project with problems
- Small budget, timeline, team, etc
- Background:
 - DotProject (~2007)
 - 7 contributors
 - 200kloc, some dated back to PHP3/4.0
 - v3.0 underway for years, no end in sight



Obvious Solution!

(the good bits)

- Trash it all and start from scratch
 - Appealing as developers
 - We can do it the “right” way
 - Employ new tools & concepts
 - Everyone else's code is... *junk*
 - Use the *new shiny*

Obvious Solution!

(the bad bits)

- The zombie product line..
 - Eats.. well, sucks brains
 - Split efforts to support a dying effort?
- Potentially damaging for users
 - What do we do in the meantime?
 - What do we build against?
 - Buy now or wait?

Harder Solution

- Triage

“the process of determining the priority of [patients' treatments] based on the severity of their condition. This rations [patient] treatment efficiently when resources are insufficient for all to be treated immediately.”

– <http://en.wikipedia.org/wiki/Triage>

Assess: The Project

- Define success
 - Is there an up to date specification?
 - Is there a bug list?
 - Where's the “release” line?
 - Collect project metrics:
 - phploc, phpcpd, CodeSniffer
 - error_log, creative use of grep, sed & awk

phploc / phpcpd

	10/04/09	04/01/10	10/01/10	01/01/11
Directories	45	45	50	52
Files	322	324	342	348
Lines of Code (LOC)	59326	61228	66234	66997
<u>Cyclomatic Complexity/LoC</u>	0.1	0.1	0.09	0.09
Comment <u>LoC</u>	9443	9616	10525	10733
Non-Comment <u>LoC</u>	49883	51612	55709	56264
Interfaces	0	0	0	0
Classes	78	77	79	81
Abstract Classes	0	0	0	0
Concrete Classes	78	77	79	81
<u>LoC/Number of Classes</u>	760	795	838	827
Methods	679	732	759	786
Non-Static Methods	645	693	718	745
Static Methods	34	39	41	41
<u>LoC/Number of Methods</u>	87	83	87	85
<u>Cyclomatic Complexity / Number of Methods</u>	8.79	8.26	8.15	8.02
Functions:	205	213	214	215
Constants:	58	59	57	62
Class constants	0	4	6	6
Test classes	8	10	11	11
Test methods	125	204	394	434
CPD Results	2.71%	2.33%	2.26%	2.59%
Duplicate LOC	1608	1427	1497	1735



Review Key Areas

By Category	open	resolved	closed	total
-- none specified --	1	0	19	20
a_n/a	0	0	1	1
a_unknown	0	0	3	3
Browser Compatibility	0	0	1	1
Calendar	16	0	17	33
Companies	0	0	4	4
Contacts	8	1	14	23
Core Infrastructure	22	0	25	47
Cosmetic/Typo	1	1	1	3
Departments	3	0	13	16
Files	7	0	26	33
FlexReports	0	1	0	1
Forums	4	0	11	15
Gantt Chart Generation	8	0	5	13
Help/Documentation	2	0	0	2
Helpdesk	4	7	0	11
History	1	0	1	2
Holiday	1	0	0	1
Links	1	0	5	6



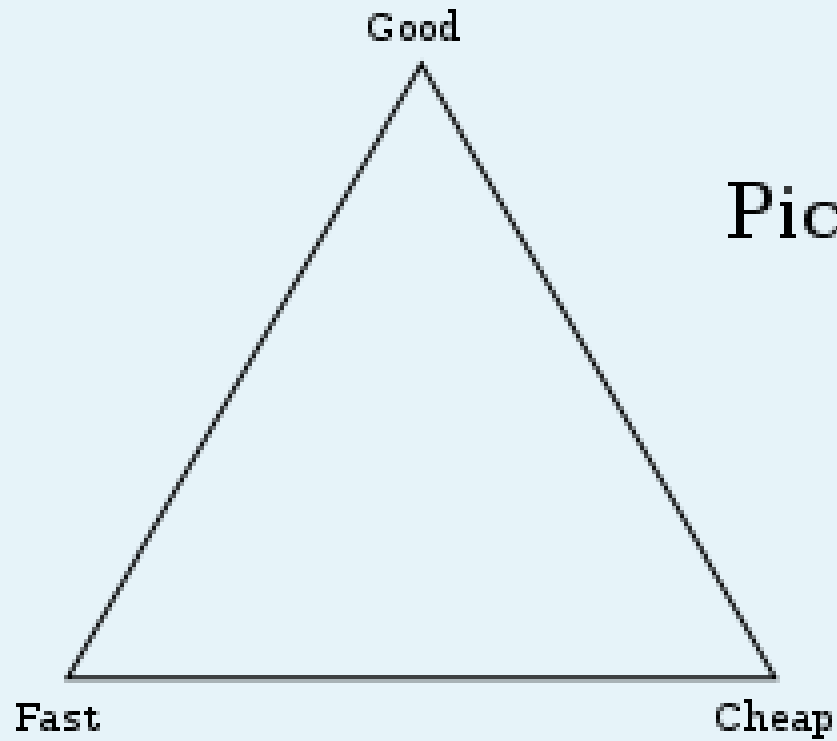
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Holiday	1	0	0	1
Links	1	0	5	6

Projects	31	0	68	99
Reports	4	1	12	17
Resources	1	0	1	2
SmartSearch	0	0	4	4
Supporting Libraries	7	0	0	7
System Admin	17	1	18	36
Tasks	51	2	57	110



Prioritize *(the cliché)*



Pick any Two

Prioritize

- What variables can we adjust?
 - Can we recruit more people?
 - Can we shift the deadline?
 - What features & fixes can we drop/delay?
 - What is “good enough”?

Prioritize *(the real world)*

		P ▼	ID	#	Category	Severity
<input type="checkbox"/>		⤴	0000339	1	[Pending Requests] Permissions	major
<input type="checkbox"/>		⤴	0000078	21	[Pending Requests] Projects	major
<input type="checkbox"/>		⤴	0000584	1	[Pending Requests] Core Infrastructure	minor
<input type="checkbox"/>		⤴	0000326	2	[Pending Requests] PDF Generation	minor
<input type="checkbox"/>		⤴	0000673	1	[v2.3 Release (Under Development)] System Admin	minor
<input type="checkbox"/>		⤴	0000623	2	[v2.3 Release (Under Development)] Core Infrastructure	minor
<input type="checkbox"/>		⤴	0000460	1	[v2.3 Release (Under Development)] Tasks	minor

By Severity	open	resolved	closed	total
feature	118	0	30	148
trivial	5	1	8	14
text	1	0	3	4
tweak	3	0	12	15
minor	104	10	187	301
major	27	4	110	141
crash	0	0	34	34
block	1	2	30	33



Prioritize: Draw your Line

		P	ID	#	Category	Severity
<input type="checkbox"/>			0000339			
<input type="checkbox"/>			0000078	2		
<input type="checkbox"/>			0000584			
<input type="checkbox"/>			0000326			
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Don't move the Finish Line! (sorta)

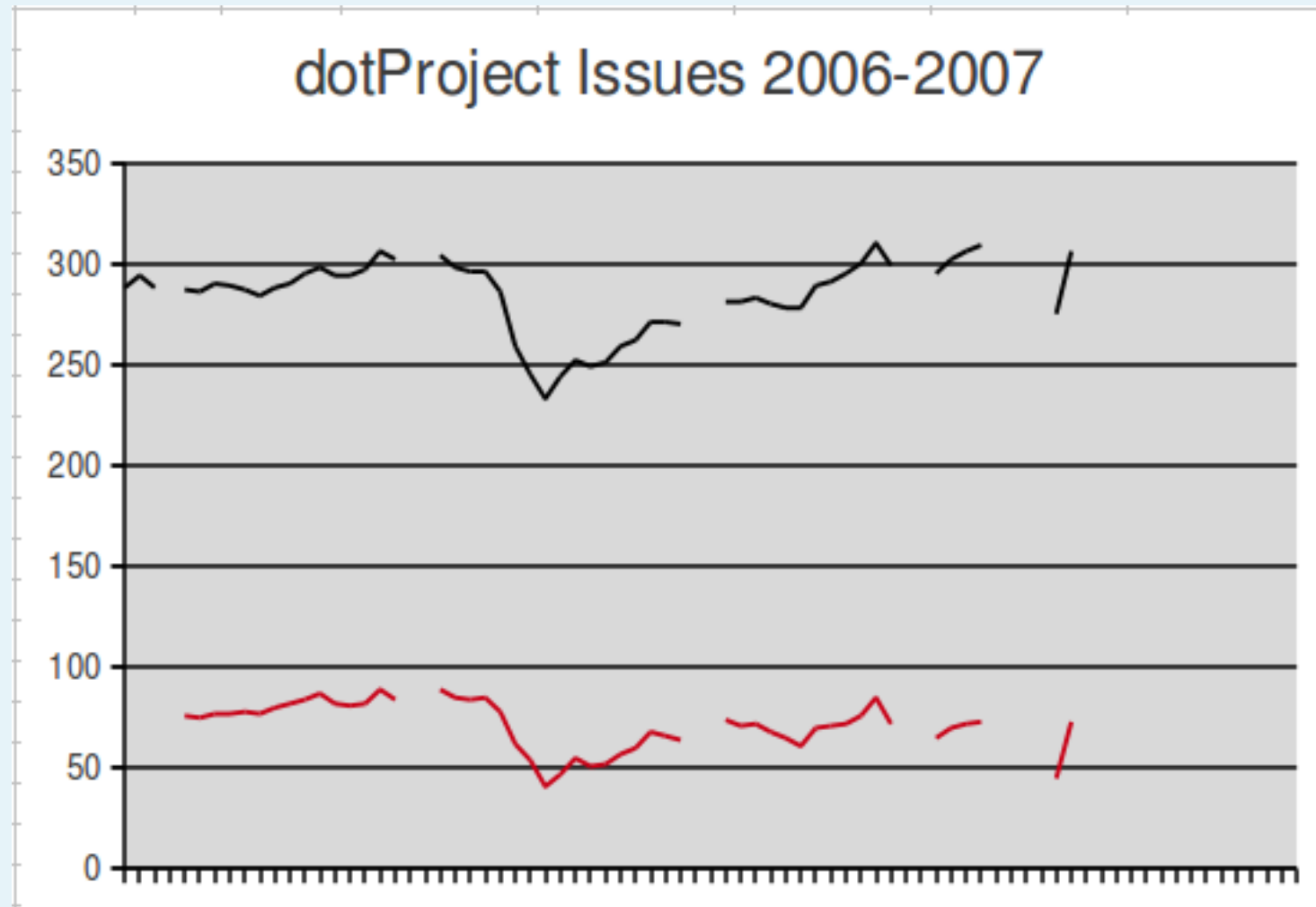
- Once everyone agrees on a finish line, don't move it lightly
- Every date, feature commitment, or priority list has meaning within and outside the team
- Identify milestones along the way to continue, expand, or even stop the effort

Constantly Reevaluate

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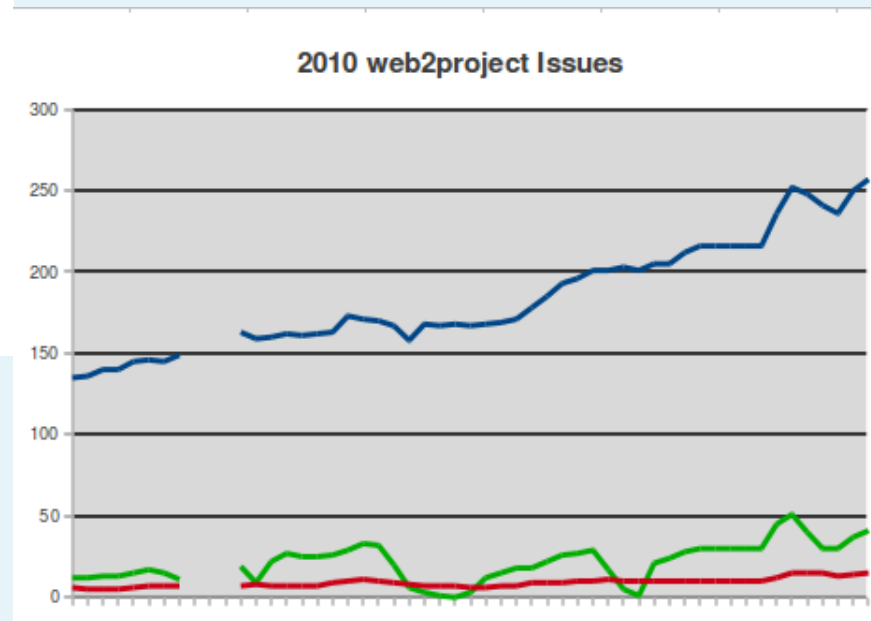
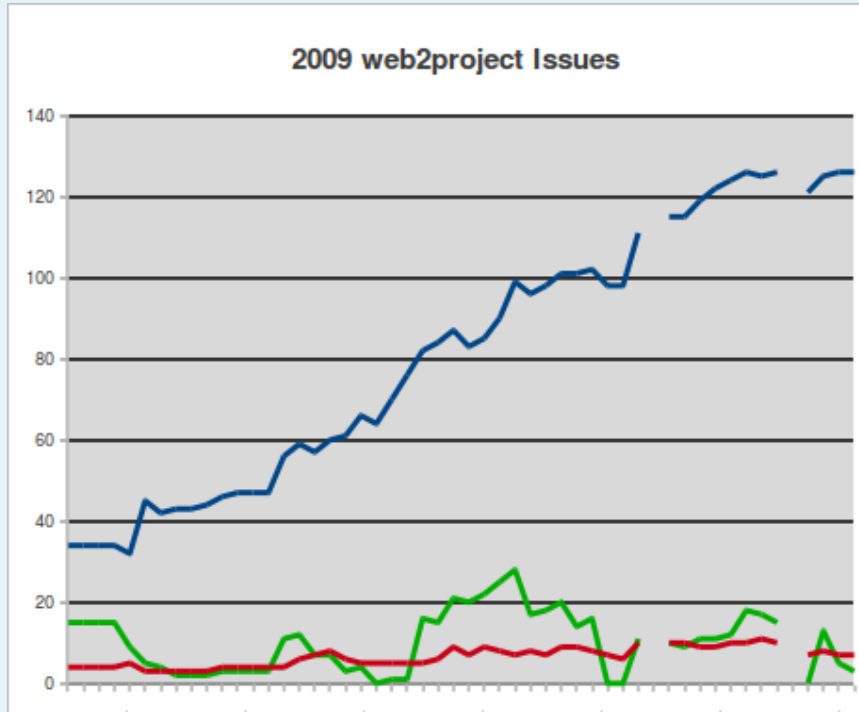


dotProject (before)



- Bug count – average/release: 75 high: 325 low: 245

web2project *(after)*

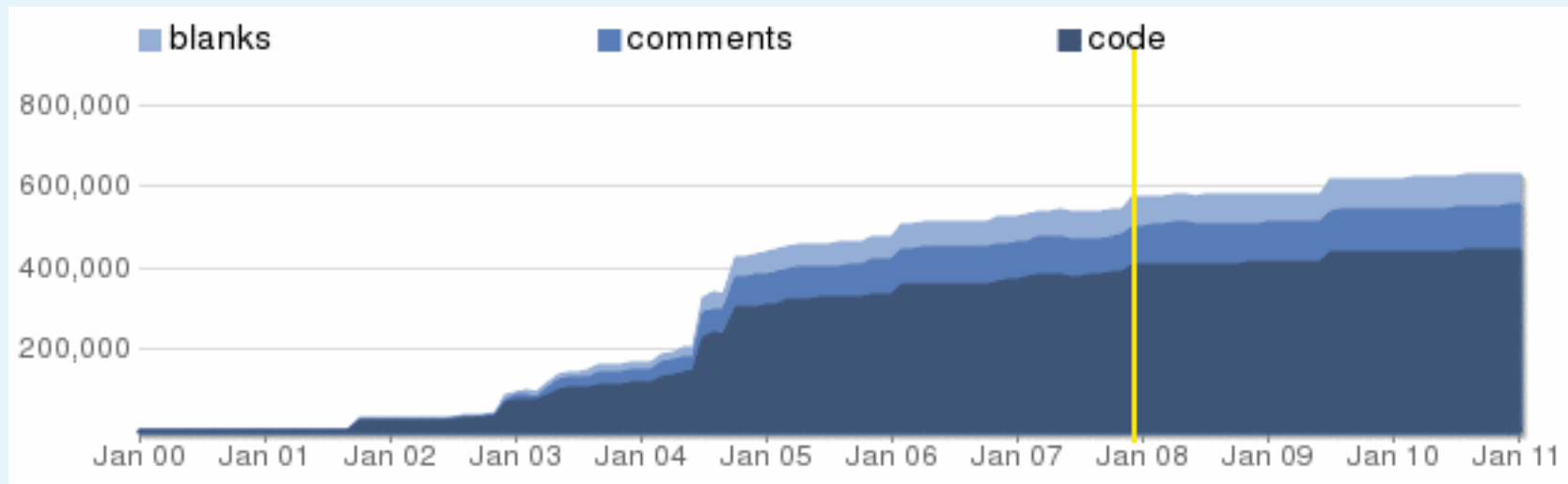


• Bug count – average/release: 25

high: ---

low: ---

dotProject (before)



- 7 team members
- Browser compatibility issues with all engines - WebKit, IE, and Firefox
- phpcpd – 8.05% Code duplication
- phploc - 200Kloc, zero unit tests
- Cyclomatic Complexity – average: 81 low: 17 high: 195M

Note: http://en.wikipedia.org/wiki/Cyclomatic_complexity



web2project (after)



- 3 team members, semi-annual code reviews
- Eliminated 95% of browser compatibility issues with WebKit, IE, and FF
- phpcpd – 2.59% Code duplication
- phploc - 159Kloc, 450+ unit tests
- Cyclomatic Complexity – average: 8 low: 1 high: 140M

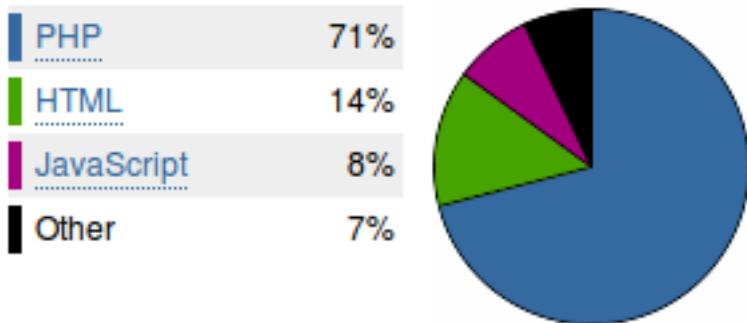
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dotProject & web2project

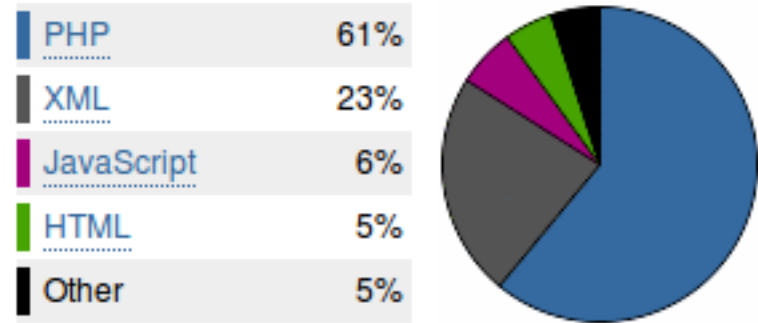
Languages

Ohloh analyzes the project source code and determines the language of each line of code, excluding comments and blanks.



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Recap

- We started with a project in trouble
- Showed some tools & results to evaluate the project
- Prioritized the problem areas
- Looked at the real world example of dotProject to web2project

Thanks

Questions?

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<http://joind.in/talk/view/2496>

