

Cooperation Collaboration Awareness



QConSF 2010

Production?
On Call?
Outage handlers?

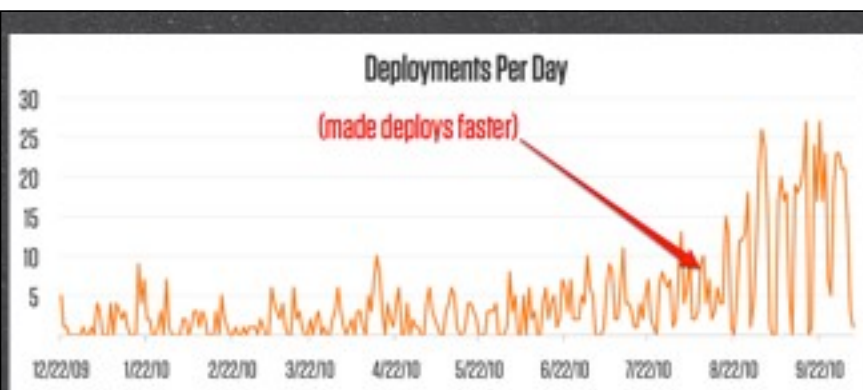


The screenshot shows the Etsy website interface. At the top, there are navigation links for "Home", "Your Etsy", "Conversations", "Help", and "Sign Out". On the right, there are links for "Favorites" and "Cart". Below the navigation is the "Etsy" logo and a search bar with a "Search" button. The main content area is divided into several sections:

- Categories:** A vertical list of categories including Accessories, Art, Bags and Purses, Bath and Beauty, Books and Games, Ceramics and Pottery, Children, Clothing, Crafts, Dolls and Miniatures, Everything Else, Furniture, Games, Glass, Holidays, Home Decor, Jewelry, Knitting, Music, Needlecraft, Paper Goods, Patterns, Pets, and Plants and Flowers.
- Featured Promotions:** Three promotional banners for "Showcase" (Fresh picks from sellers), "Make it Personal" (Custom gift ideas), and "Halloween" (What are you afraid of?).
- Handpicked Items:** A grid of eight product listings with images, titles, and prices. The items include: "ROMANTIC GOYU FOLKLORE" (\$199.99), "LEAD P" (\$199.99), "Handmade Leather Belt Dark" (\$69.99), "Steampunk Money Clip, Rose" (\$199.99), "Sassy ROUND WIRE rim Fram" (\$29.99), "Red Rum Balls Ever" (\$19.99), "Recycled Whisky Floor Sal" (\$199.99), and "Natural Shaving Soap - Sa" (\$9.99).
- Prized by Etsyers:** A section for items that are highly rated by the community.



over **5.7 million** members
 over **400,000** sellers
6.5 million items currently listed
775 million PVs per month
\$179.4 million sold (gross merchandise sales, thru August)



July: **204** deploys by **32** people
 August: **371** deploys by **49** people
 September: **456** deploys by **54** people

2010

(1644 code deploys)

4 deploy-related incidents

6.5 minutes MTTD

6 minutes MTTR

The screenshot shows the DeployBot interface with an orange header. On the left, there are three deployment buttons: 'Deploy to QA (Trunk)' with a 'Push to QA →' button, 'Princess is in the other castle' with a 'Save the Princess' button, and 'Deploy to Production' with a 'PROD!!! →' button. On the right, a 'Log' section displays a list of deployment events with timestamps, environment names (e.g., PRINCESS, QA, PRODUCTION), and user names (e.g., sandrew).

<http://codeascraft.etsy.com/2010/05/20/quantum-of->

?

(Historical)

Ops owned availability and performance.

Dev owned features and evolution.

Everyone else owned other things, not sure what, really.

(Reality)

Everyone owns availability and performance.

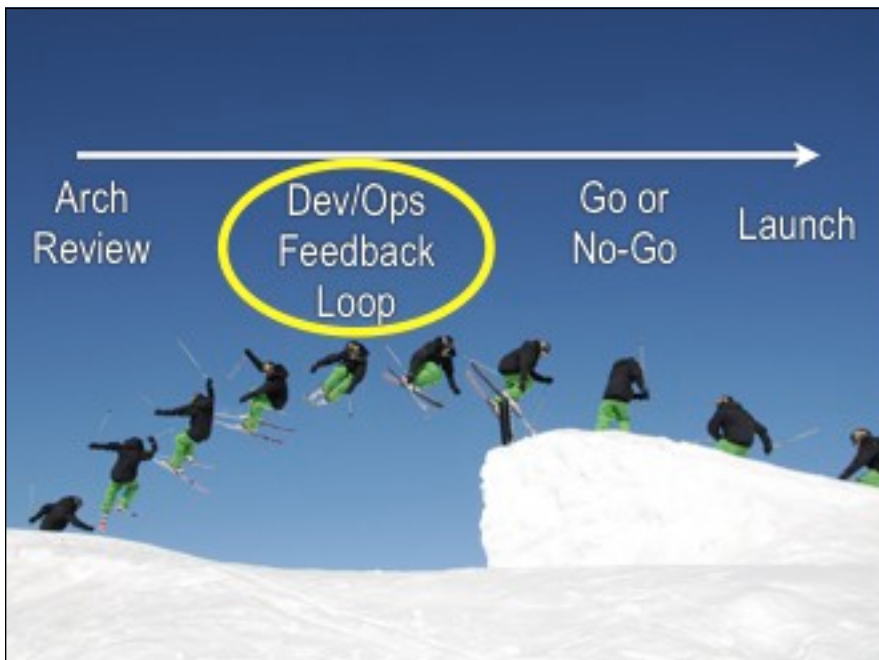
Everyone owns features and evolution.

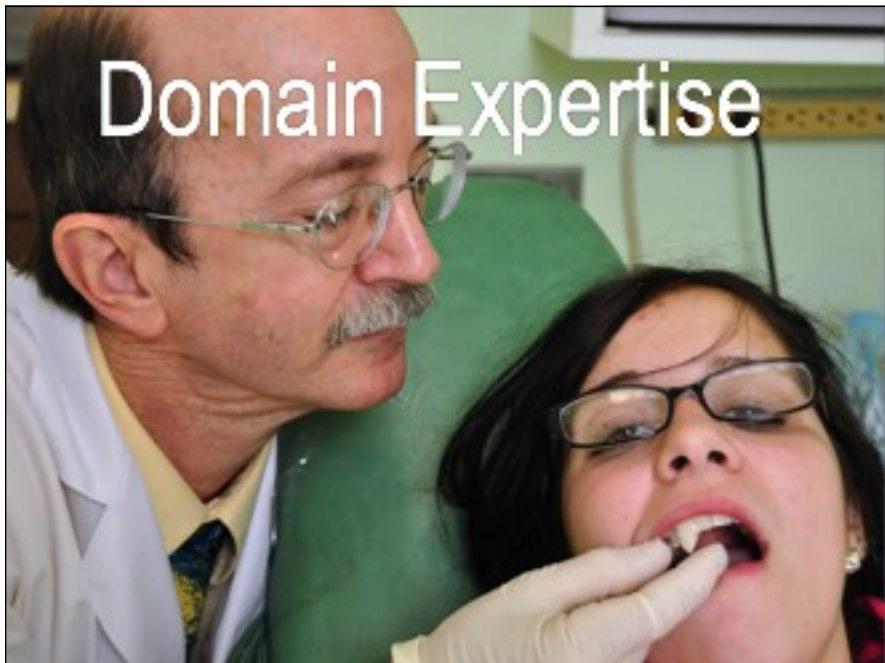
Arch Review

Dev/Ops Feedback Loop

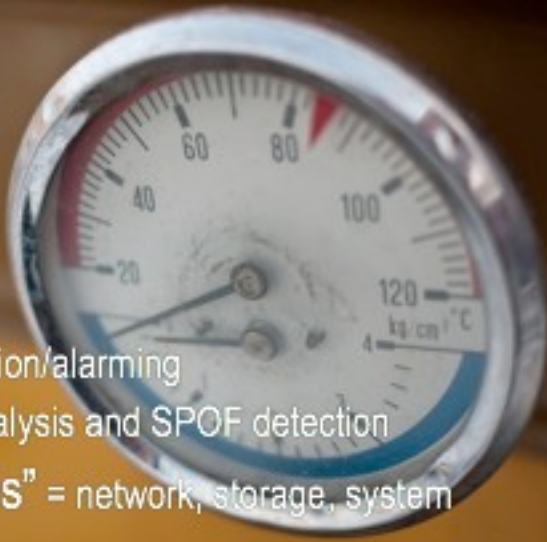
Go or No-Go

Launch





Ops



Anomaly detection/alarming

Root Cause Analysis and SPOF detection

“Black Boxes” = network, storage, system resources

Etc.

Development

Application logic and behavior

Data layer distribution (cache, persistence, etc.)

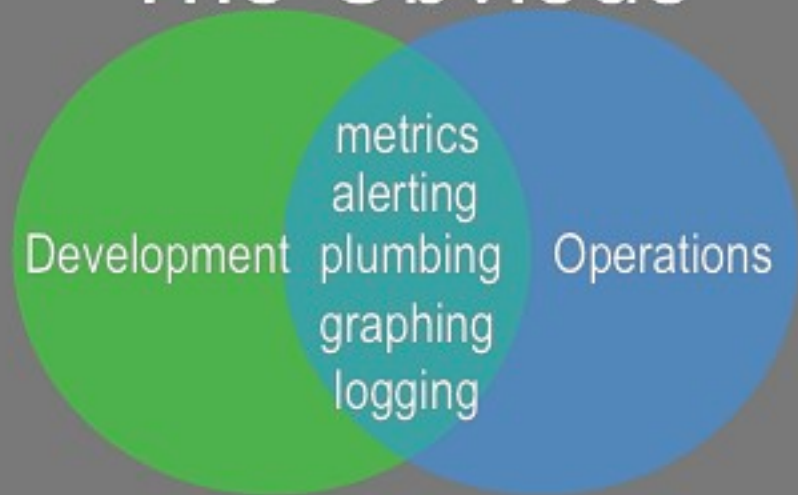
“Black Boxes” = app to backend calls, connection handling, etc.

Etc.

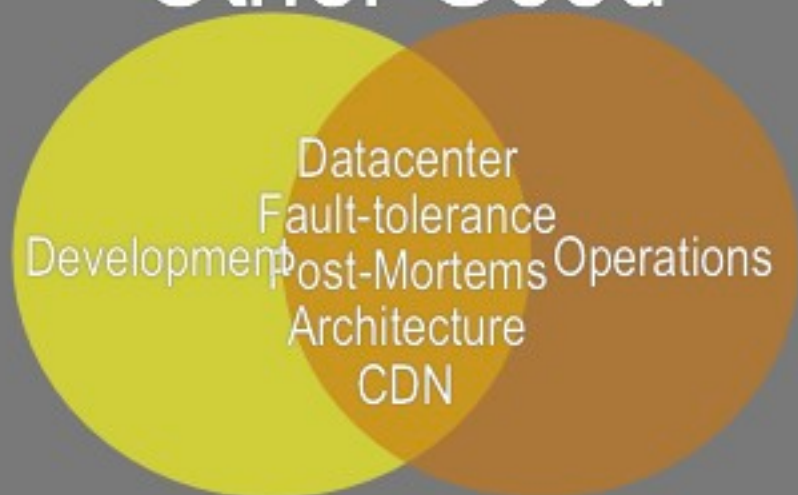
(I feel afraid and defensive)



The Obvious



Other Good

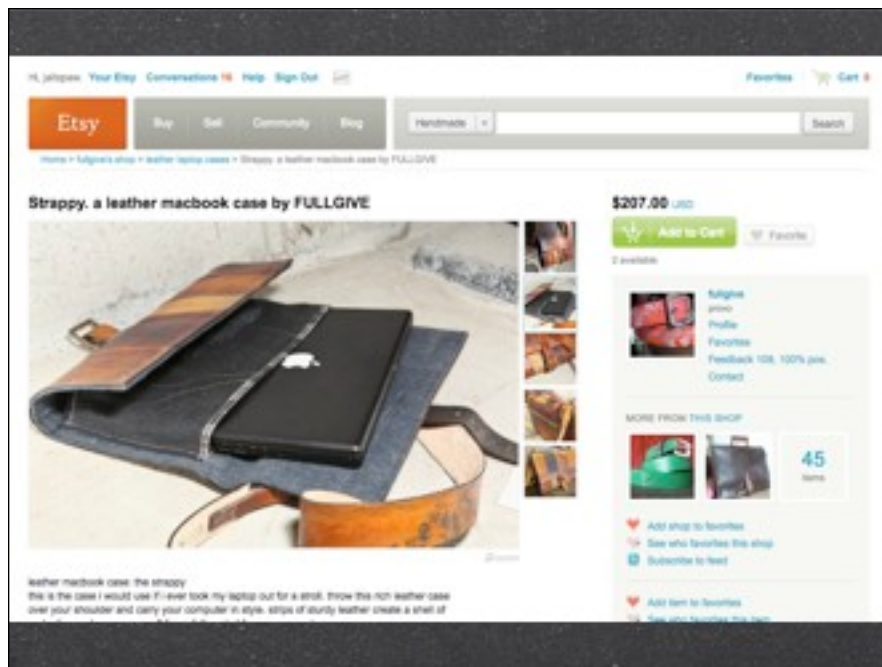


Coming Together

Ops = good with tcpdump and strace.
Those tools suck for app-level

Answer!

Dev can make those things *for* the application.



?ioprofiler=1
 like tcpdump/strace, but for
 etsy.com

[dbshard01] 0.902 ms SELECT count(*) FROM FavoriteListingUser
 WHERE listing_id = 5773453
 [memcache] 0.361 ms Cache HIT, keys:
 Etsy_Cache_Results:c812331f123321:1121231

Category	Calls	Time (ms)
function	2	11.528
apc	17	0.299
memcache_get	106	40.327
om_etsy_shard_002_B	1	1.066
smarty_fetch	2	
smarty_include	23	
om_etsy_shard_003_A	1	0.395
om_mapper	1	1.308
TOTAL CALLS	166	123
TOTAL PAGE EXEC		236.312

Coming Together

Dev is good with application behavior,
 but might not know how to surface it.

Answer!

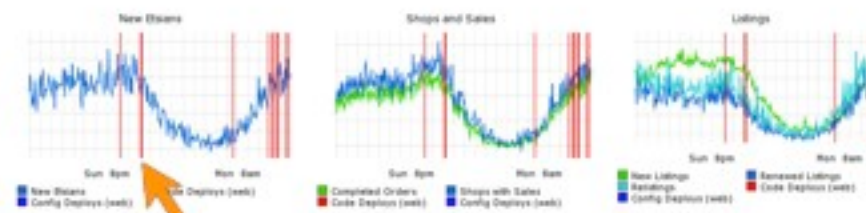
Ops can provide a platform for tracking
 and graphing, make it it brain-dead
 simple to add new metrics and
 collection methods.

Graphite

<http://graphite.wikidot.com/>

e

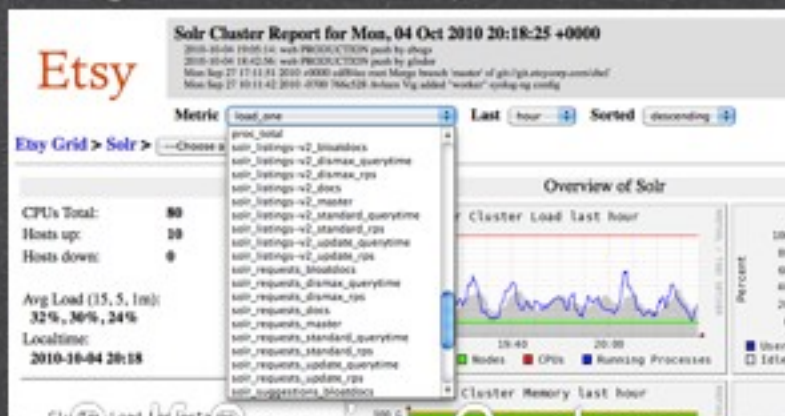
business graphs (1 day)



Code Deploys

Ganglia

<http://ganglia.info/>



Self-Service Custom Metrics

Logqina

```
web0022 10.20.30.40 [02/Nov/2010:17:56:00 +0000]
"GET /listing/60129005/live-simply-original-triptych-
painting?ref=fp_ph_2&src=favitm HTTP/1.1" 200 9171
"http://www.etsy.com/" "Mozilla/5.0 (Macintosh; U; Intel
Mac OS X 10.6; en-US; rv:1.9.2.12) Gecko/20101026
Firefox/3.6.12" - 6;12;14;15;18;22;23;35;37;44;47;51
0;0;0;0;0;1;0;1;2;0;1 5020244 8912896 373846 842158
```

Logqina

```
web0022 10.20.30.40 [02/Nov/2010:17:56:00 +0000]
"GET /listing/60129005/live-simply-original-triptych-
painting?ref=fp_ph_2&src=favitm HTTP/1.1" 200 9171
"http://www.etsy.com/" "Mozilla/5.0 (Macintosh; U; Intel
Mac OS X 10.6; en-US; rv:1.9.2.12) Gecko/20101026
Firefox/3.6.12" - 6;12;14;15;18;22;23;35;37;44;47;51
0;0;0;0;0;1;0;1;2;0;1 5020244 8912896 373846 842158
```

Logqina

```
web0022 10.20.30.40 [02/Nov/2010:17:56:00 +0000] "GET /listing/60129005/live-simply-original-triptych-
painting?ref=fp_ph_2&src=favitm HTTP/1.1" 200 9171 "http://www.etsy.com/" "Mozilla/5.0 (Macintosh; U; Intel Mac OS X 10.6;
en-US; rv:1.9.2.12) Gecko/20101026 Firefox/3.6.12" - 6;12;14;15;18;22;23;35;37;44;47;51 0;0;0;0;0;1;0;1;2;0;1
5020244 8912896 373846 842158
```

Done, via `apache_note()` in PHP:

6;12;14;15;18;22;23;35;37;44;47;51 = test IDs for our A/B testing framework

0;0;0;0;0;1;0;1;2;0;1 = variations within the A/B tests

5020244 = the etsy user ID. (if it's a logged-in request)

8912896 = the amount of memory (bytes) PHP used in serving the request

373846 = the time, in microseconds, PHP spent generating the response

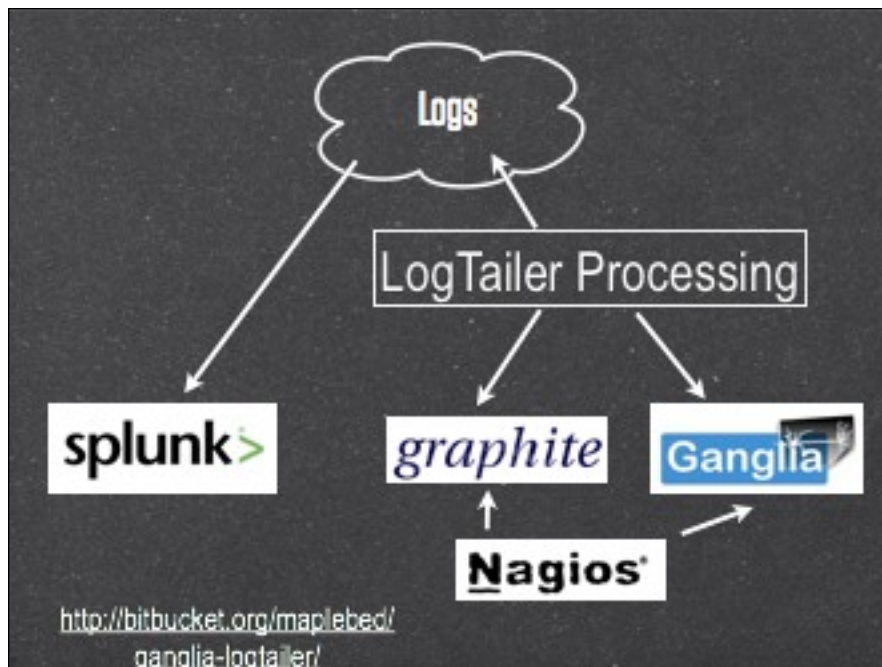
842158 = the time, in microseconds, for Apache to

Search Logging

```
search02 2010-11-03 12:53:02,668 [pool-26-
thread-209] INFO solr.SolrListingsv2Search -
listingsv2.search: execTime=40, listings
query=laptop bag
```

"execTime=40" - search time, in milliseconds

Query rates, average latency, and 95th percentile



In General*

1. If it moves, graph it
2. If it matters, alert on

*Caveat: more is better, but
more is harder

Coming Together

Ops need to have graceful degradation options for fault-tolerance

Answer!

Developers can instrument the code with config flags.

Feature Flags

- Turn on/off core functionalities via config flags
- Reviewed by product, ordered by priority
- "Branching in Code" - dark/staff/percentage/etc.

More info here:

<http://code.flickr.com/blog/2009/12/02/flipping-out/>

<http://www.paulhammond.org/2010/06/trunk/always-ship-trunk.pdf>

Maintainability



MTTR

Optimized

Versus



MTBF

Optimized

More info here: http://ti.arc.nasa.gov/projects/fisheye/Papers/ONeill_Maintainability.doc

MTTR > MTBF*

*For most types of F

"If you think you can prevent failure, then you aren't developing your ability to respond." - Paul Hammond

Monitorina

Monthly alerts review:

- Low and high thresholds
- Alerting signal:noise ratios
- Escalation/prioritizing of fixes
- Event handling

Configuration



- e
- Abstract
- Idempoten
- t
- Converge
- nt

Fear and



Responsibility

If you can break something via proxy, it's not going to hurt as much

So...

developers deploy their

IRC notifications

```
master build: 36790-trunk-2020025-24411-ETC took: 34.93062 seconds  
URL: http://deploy-notif-0k.f7.web/36790-36790
```

Email notifications



The screenshot shows an email notification with the following text: "Deployment completed by master build: 36790-trunk-2020025-194811-LTC took: 34.93062 seconds off: http://deploy-notif-0k.f7.web/36790-36790". Three red circles highlight the words "Deployment", "master", and "2020025-194811-LTC". Red arrows point from the words "what", "who", and "when" below to these circles respectively.

what who when

Trust &

- Devs own their own code, so they expect 24x7 contact on it
- When things break, dev and ops **both** participate
- Post-Mortems have both dev and ops remediations

Trust & Culture

- No fingerpointy-ness allowed. None.
- Trust in the team, lean on each other's experiences and perspectives
- New feature launch coordination (Go or NoGo)
- Designated Ops for Dev teams, early

No Asshole

- Allowing snarky, biting, and defensive comments between Dev and Ops is implicitly encouraging contention. So: don't.
- **BCFH**: You know that guy. **Don't be that guy.**
- Condescension, holier-than-thou communication **limits your career.**

Respect

Celebrate collaboration!

When the norm is to **get along**, being a **jerk** really stands out


Change



Common Sense



Change Manage

- 
- Who, What, When?
 - Have you done this before?
 - WTF will happen when it goes wrong?
 - WTF will you do when it does go wrong?

When It Works

Tools, Code, and Process

when you have this...

...this part becomes easy and a lot more fun



@ Etsy

- Sharing and access is the rule, not the exception.
- Ops are not "gatekeepers", they aim to be enablers.
- Devs are not "abstracted" from the infrastructure guts, they aim to be in it.

Photos

<http://www.flickr.com/photos/rtchauglis/4192498549/>

<http://www.flickr.com/photos/magill/34762677/>

<http://www.flickr.com/photos/yumi/6501047312/>

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<http://www.flickr.com/photos/bud55/4757494874/>

<http://www.flickr.com/photos/trudydrama/4046501344/>