




# Understanding and Calculating the Cost Benefits of Open Source Monitoring

Jeffrey Hammond

Principal Analyst, Forrester

A photograph of a narrow canyon with a river flowing through it. The canyon walls are made of reddish-brown rock. The river is dark blue and reflects the sky. In the background, there are some trees and a bright sky. A dark red rounded rectangle with a yellow border is overlaid on the right side of the image, containing white text.

When it comes to Enterprise IT  
adoption, Open Source Has  
“Crossed the Chasm”



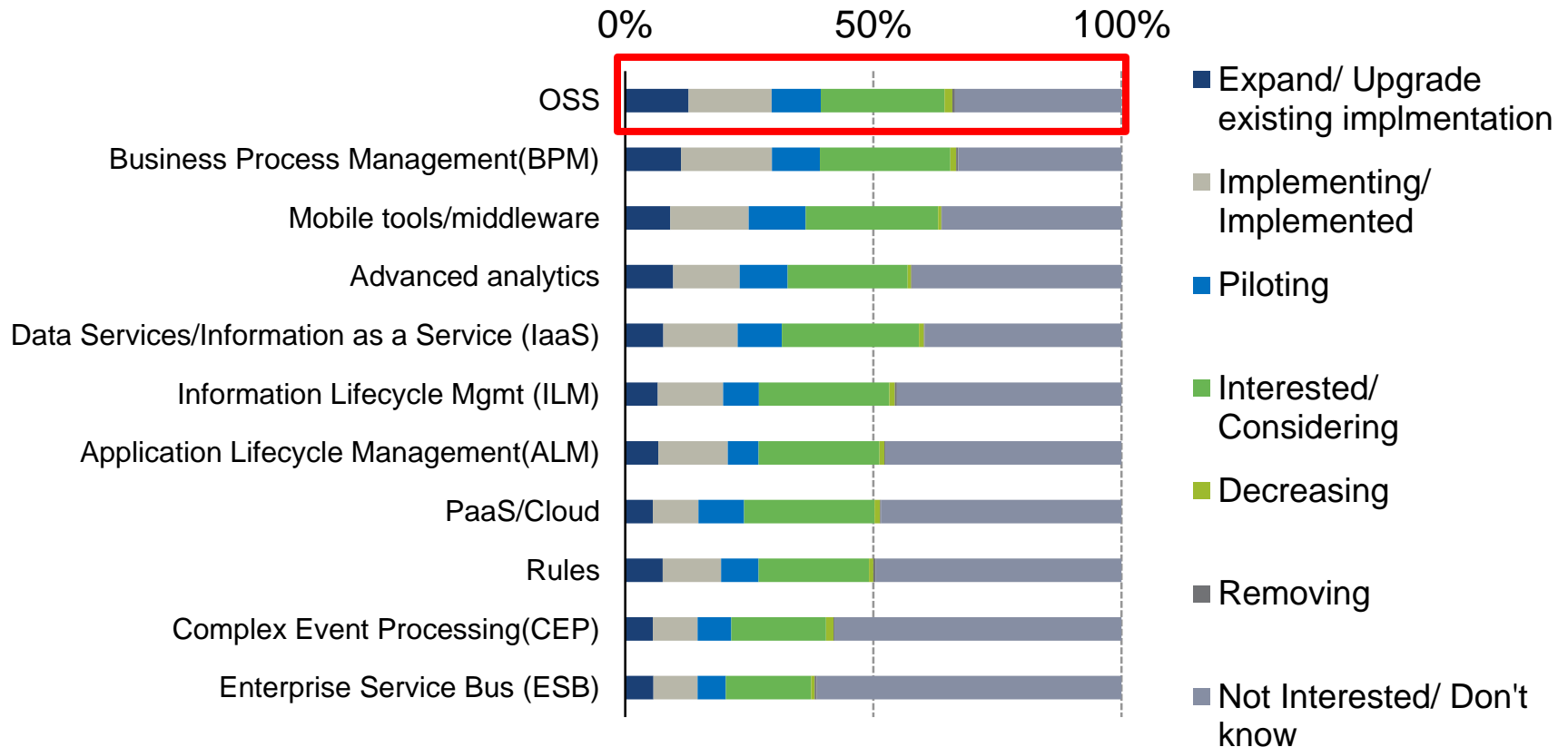
[www.sofastudio.com.au](http://www.sofastudio.com.au)  
**RECESSION**  
**PRICES**

2009 was not a very good year...



## In 2009, Adopting OSS was a top *technology* goal

“What are your firm’s plans to implement or expand its use of the following software technologies in the next 12 months??”



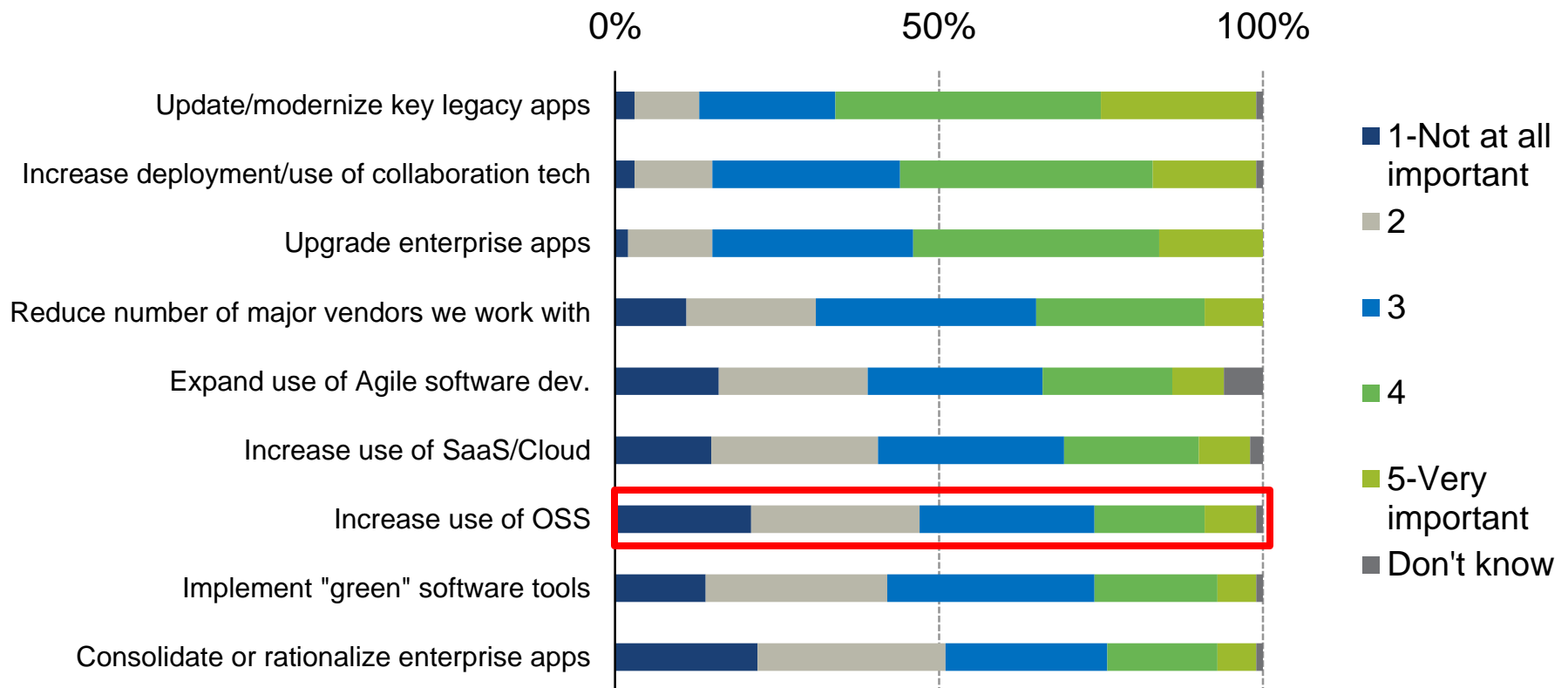
Base: 2227 software decision-makers at North American and European enterprises and SMBs

Source: Enterprise And SMB Software Survey, North America And Europe, Q4 2008



## But by 2010, Urgency to adopt OSS was fading...

“How important are each of the following business goals to your internal IT organization when making software decisions?”



Base: 1900 software decision-makers at North American and European enterprises and SMBs

Source: Enterprise And SMB Software Survey, North America And Europe, Q4 2009

... more than software



**OPEN SOURCE™**  
**SYSTEM**  
**MANAGEMENT**  
CONFERENCE 2012

presented by

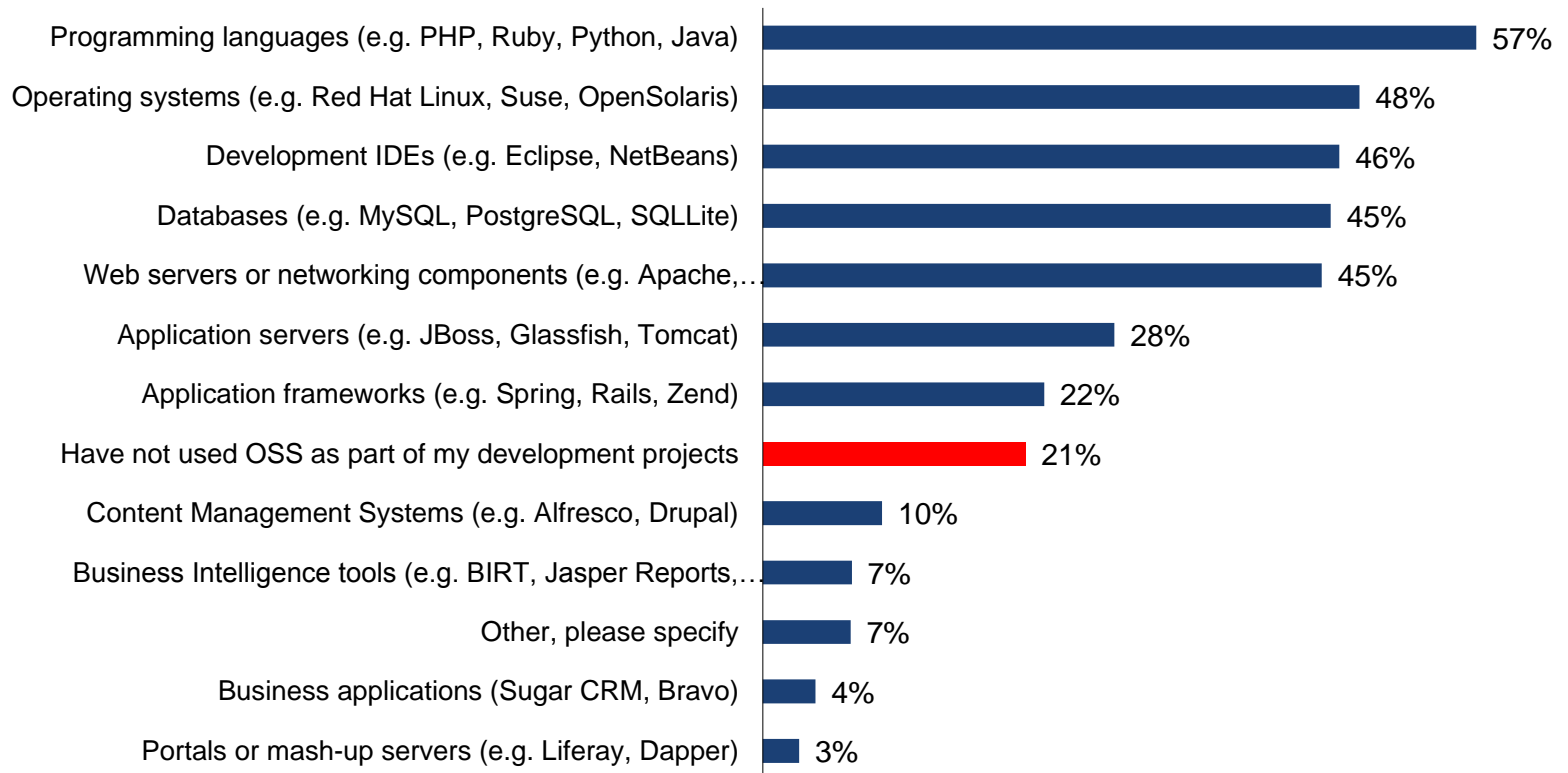


... more than software



## Because it's now widely adopted...

“Which of the OSS infrastructure tools have you included as part of your development activities or deployed an application or software project to?” (Select all that apply.)



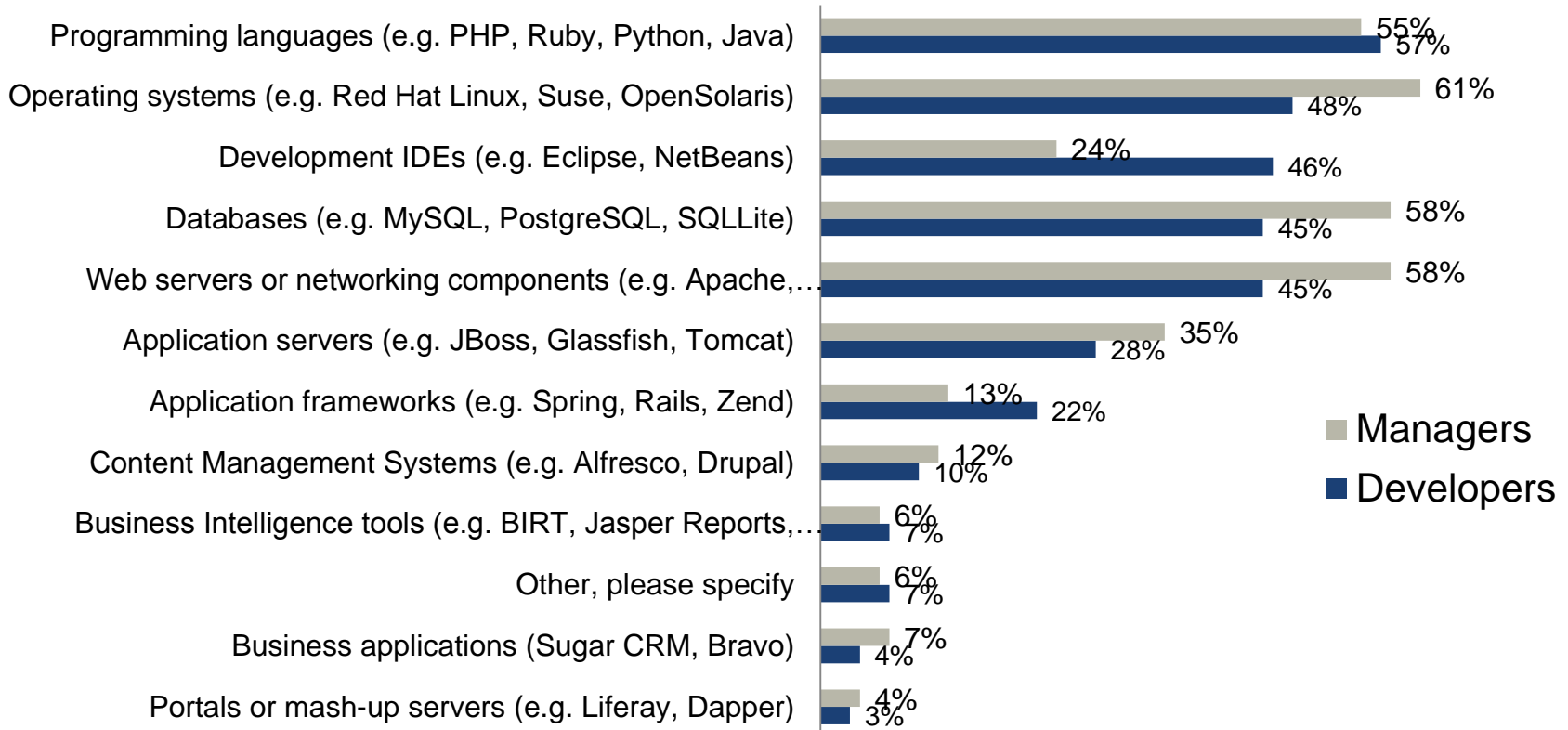
Base: 1,298 development pros at North American and European enterprises and SMBs

Source: Forrester -Dr. Dobb's 2009 Developer Technographics Survey, Q3 2009



# ...and management has caught up to developers

“Which of the OSS infrastructure tools have you included as part of your development activities or deployed an application or software project to?” (Select all that apply.)



Base: 1,298 development pros at North American and European enterprises and SMBs

Source: Forrester -Dr. Dobb's 2009 Developer Technographics Survey, Q3 2009, Enterprise And SMB Software Survey, North America And Europe, Q4





## Need more proof?

- Tomcat is the most deployed App server in our surveys for the past 3 year, JBoss is # 2.
- Over 50% of developers using an SCM tool use OSS tools like Subversion, Git, and Mercurial – and use is growing
- 40% of Eclipse developers deploy to Linux as their primary system
- The top five most used build and release management tools are open source tools
- Every day, Google activates 850K new Android devices



When calculating the cost benefits  
of open source, simpler models  
are better!



A framework for valuing any software product or framework

## The software “iron triangle”

### Schedule

- Acquisition period
- Adoption period
- Velocity/cycle time

Choose two points!

The Honda

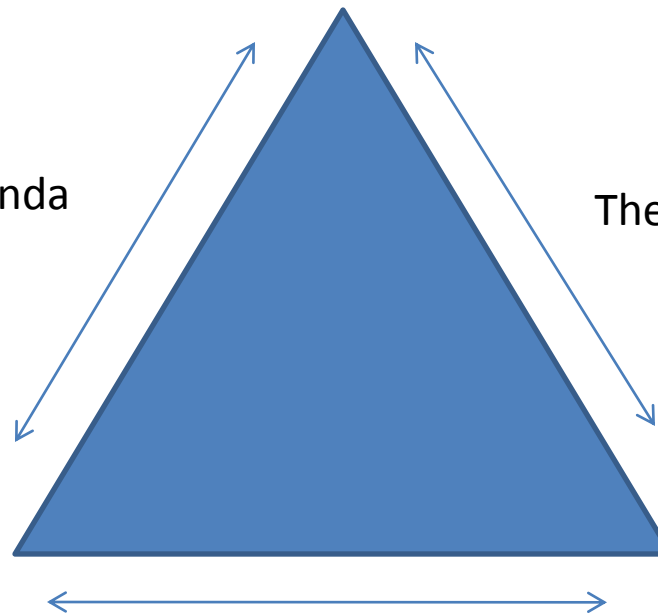
The Cadillac

### Costs

- Capital expenses
- Operational Expenses
- Labor Expenses

### Capability

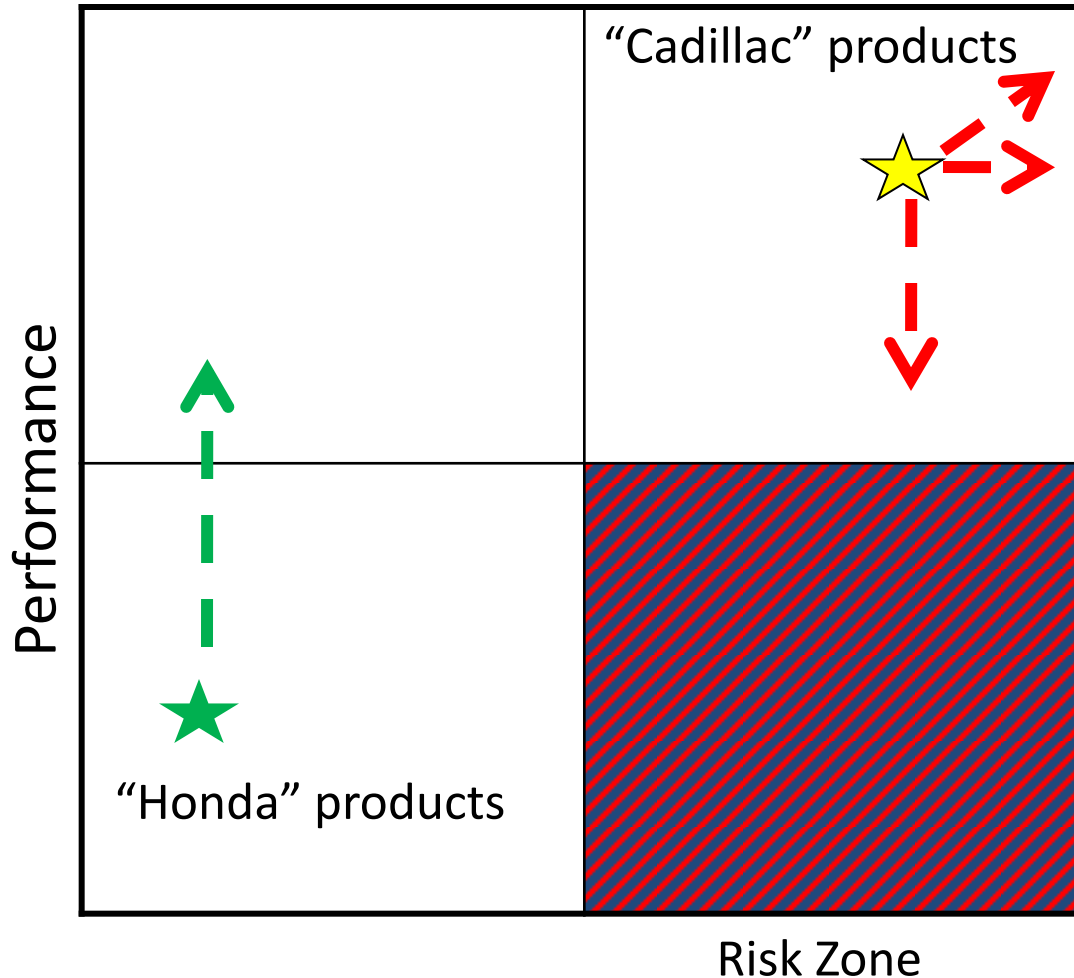
- Features
- Quality and “ilities”
- Risks



The Taxi



# The OSS Paradox – Why OSS is an inevitable end Price





# Evaluate OSS Options With A Multiyear Cost Profile

Example of a simple three-year formula for annualized total cost of ownership (TCO)\*

$$\text{TCO} = (\text{capital expenses} + 3(\text{operational expenses}))/3$$

**Capital expenses =**  
*hardware acquisition + software license acquisition*

**Operational expenses =**  
*maintenance + power + labor + indirect costs*

CAPEX considerations:

- Can commodity hardware suffice, or is specialized hardware required?
- Are license costs a lump sum, or do they increase as deployment scales?
- Are software licenses perpetual or fixed-term?

OPEX considerations:

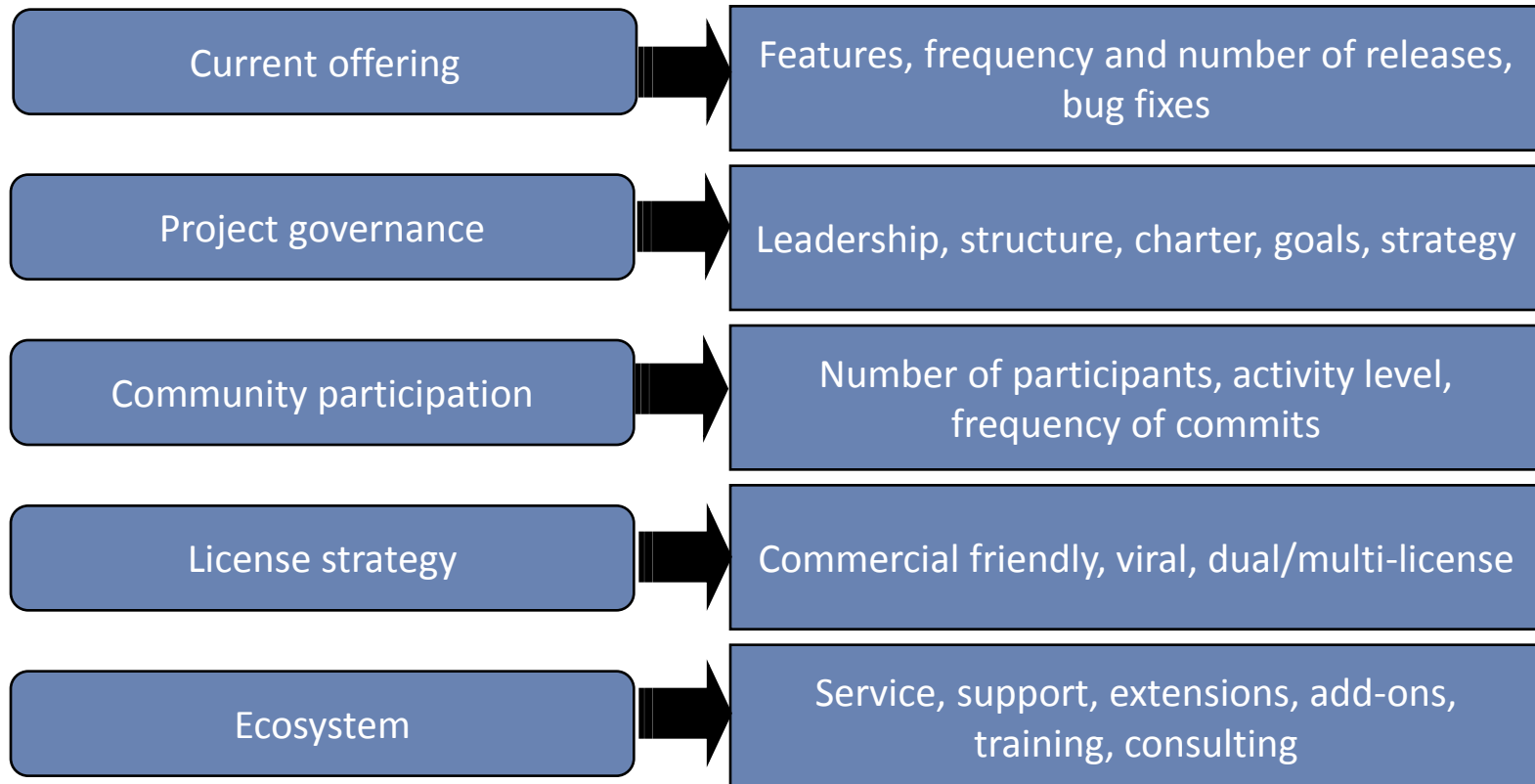
- Are recurring costs optional or mandatory: How much flexibility is there?
- Labor costs include developer and administrator salaries and training fully loaded costs.
- Indirect costs include vendor management, software configuration and administration tools, and the cost of migrating to new platforms.

\*For greater precision, use net present value (NPV) calculations for OPEX and break out indirect costs on a separate, annualized basis.

Source: February 2, 2009, "Best Practices: Improve Development Effectiveness Through Strategic Adoption Of Open Source."



## Evaluating the capabilities of OSS management projects





# So how do open source monitoring tools stack up?



**While there are hundreds of OSS monitoring tools available...**



**Nagios®**

**WÜRTHPHOENIX  
NetEye**



**springsource  
HYPERIC**



**openNMS**

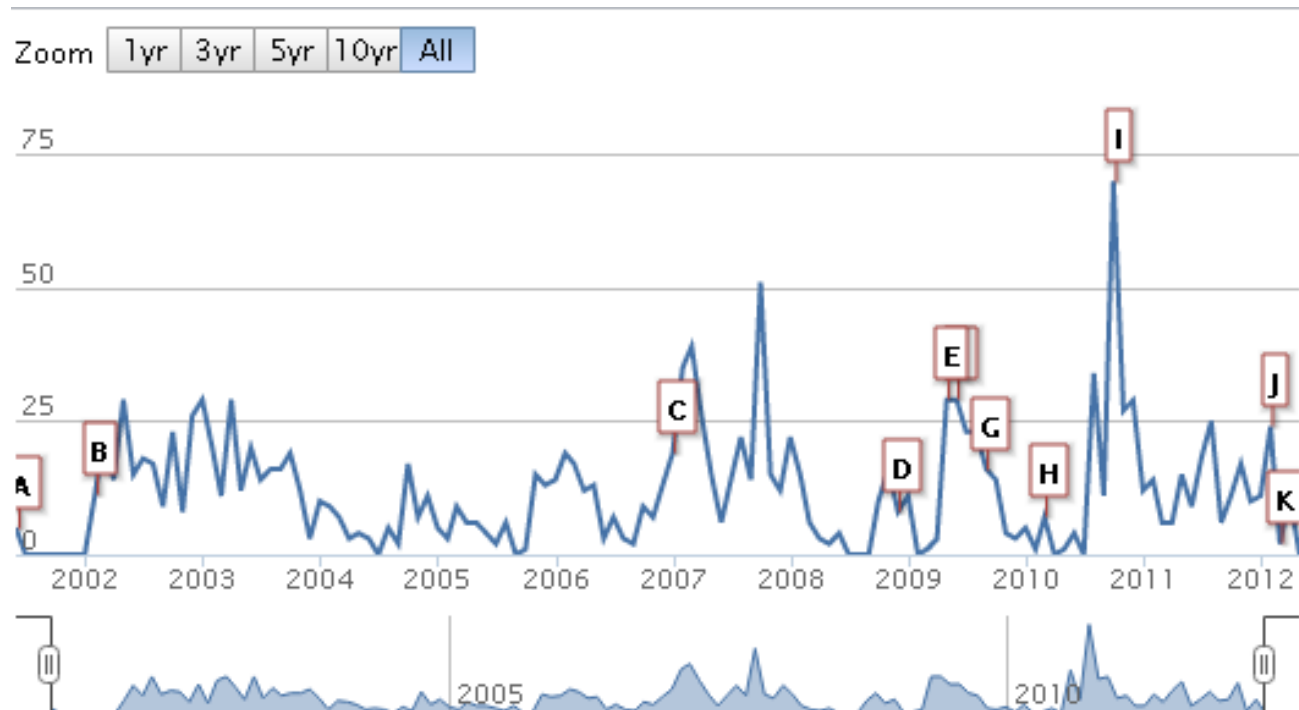
**...Let's look at some that we commonly run into.**





# Nagios®

- .Mature, well established codebase
- .Earned value: \$3M
- .Ohloh user rating 4.1/5.0
- .Strong user presence in Europe and U.S.
- .Rich plug-in model and ecosystem support
- .Decreasing YoY development activity
- .Fewer than 5 committers: each dev supporting > 50KSLOC each

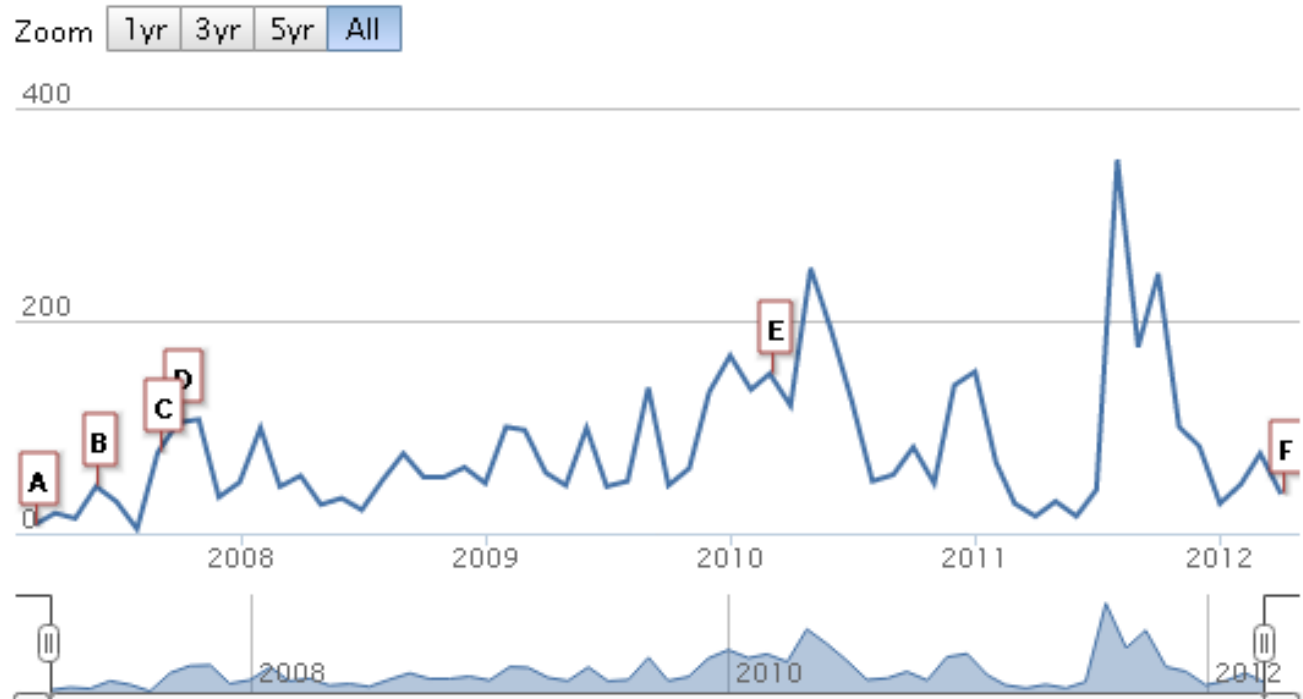


Monthly Commits To Nagios



## Cacti

- .Mature, well established codebase
- .Earned value: \$48M
- .Ohloh user rating 3.9/5.0
- .Strong user presence in W.Europe and North America, some in Asia.
- .Hit 351 commits in 8/11!
- .Sparse comments relative to other projects
- .Fewer than 7 committers: each dev supporting > 420KSLOC each



Monthly Commits To Cacti



# Shinken



.Young codebase, growing fast

.Earned value: \$1.6M

.Ohloh user rating 4.8/5.0

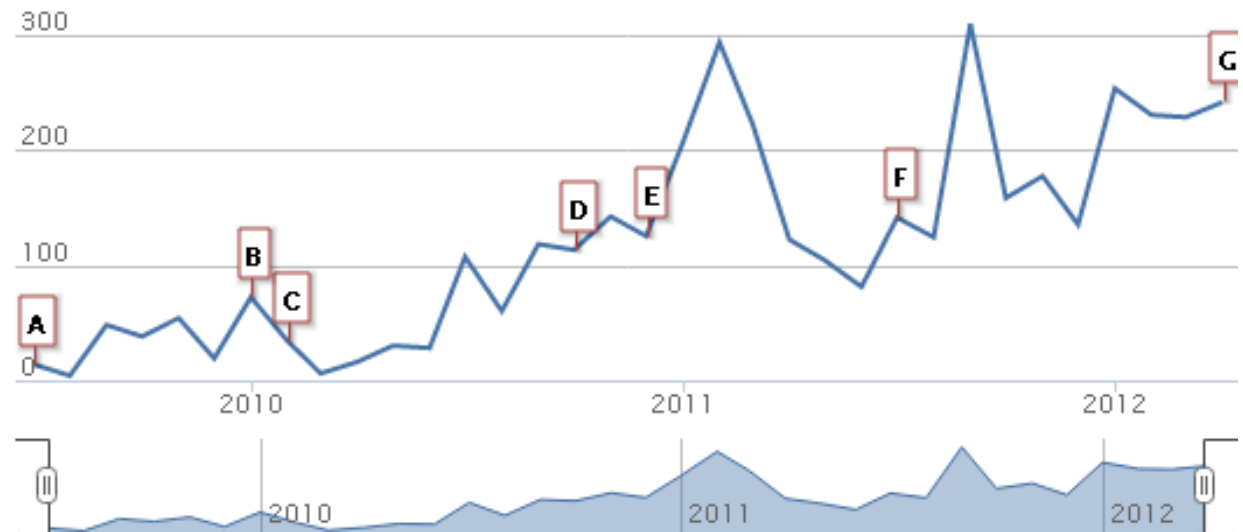
.Growing user presence in W.Europe, sparse elsewhere.

. Peaked at 15 committers last year

.Averages 200+ commits per month, trending upward

.Well commented source code

Zoom 1yr All



Monthly Commits To Shinken



.Established codebase,  
but decreasing committs

.Earned value: \$5.1M

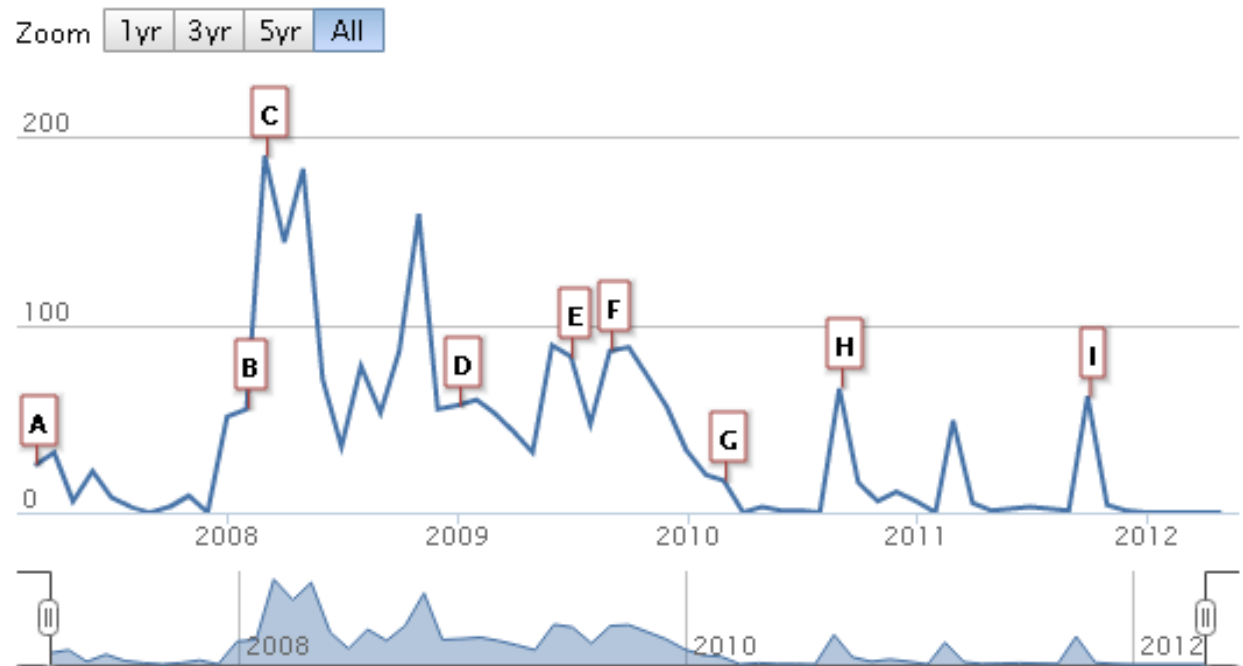
.Ohloh user rating 5.0/5.0

.Found less often that  
others, mainly in W.  
Europe.

. Declining # of committers

. Sparse forums

.Exercise caution



Monthly Commits To openQRM



# Icinga



.Well established code base (if forked)

.Earned value: \$32.6M

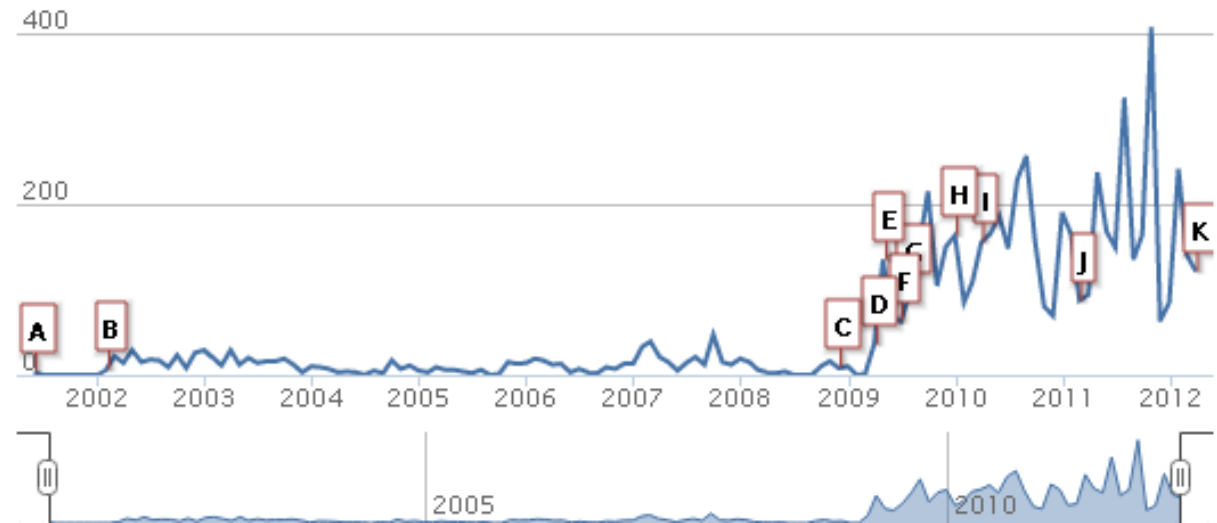
.Ohloh user rating 4.6/5.0

.Strongest in Europe, but growing in U.S.

. Peaked at 15 committers last year, fewer so far this year

.Averages <200 commits month per month, steady and active

Zoom 1yr 3yr 5yr 10yr All



Monthly Commits To Icinga



## Zenoss Core



.Mature, well established code base

.Earned value: \$17.4M

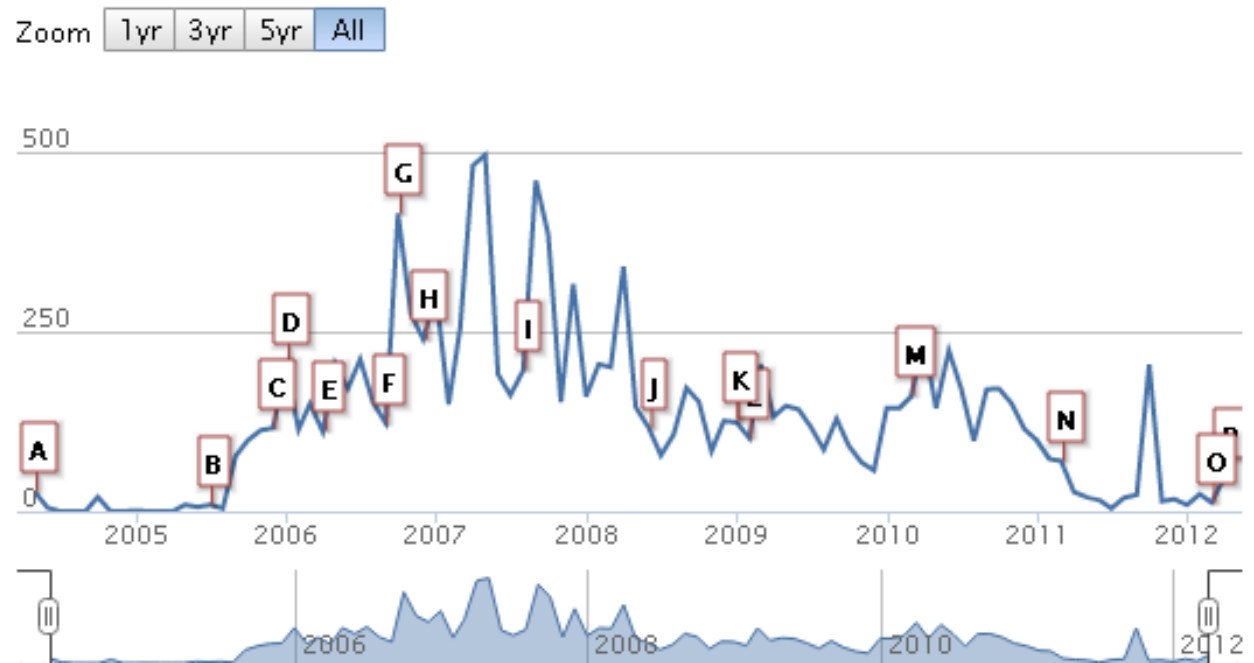
.Ohloh user rating 4.1/5.0

.Strongest in U.S, scattered use in Europe

. Marked decline in number of comitters in 2011-12

.Infrequent commits and commit volume declining in 2012

.Fewer than 5 committers: each dev supporting > 200KSLOC each

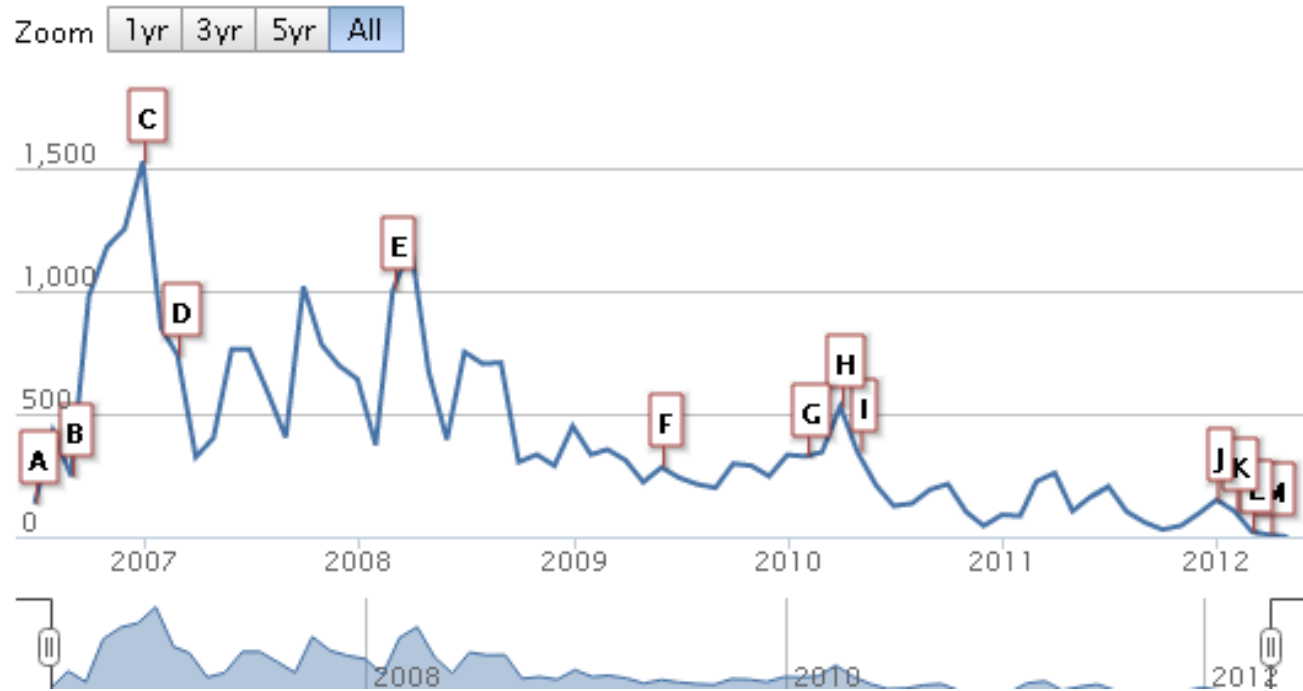


Monthly Commits To Zenoss Core



## Hyperic HQ

- .Mature, well established code base
- .Earned value: \$26.4M
- .Ohloh user rating 4.6/5.0
- .Strongest in U.S, sparse in Europe
- . Marked decline in number of commits as commits to Hyperic Enterprise rise
- .Infrequent commits and commit volume declining in 2012
- .Fewer than 5 committers: each dev supporting > 600KSLOC each

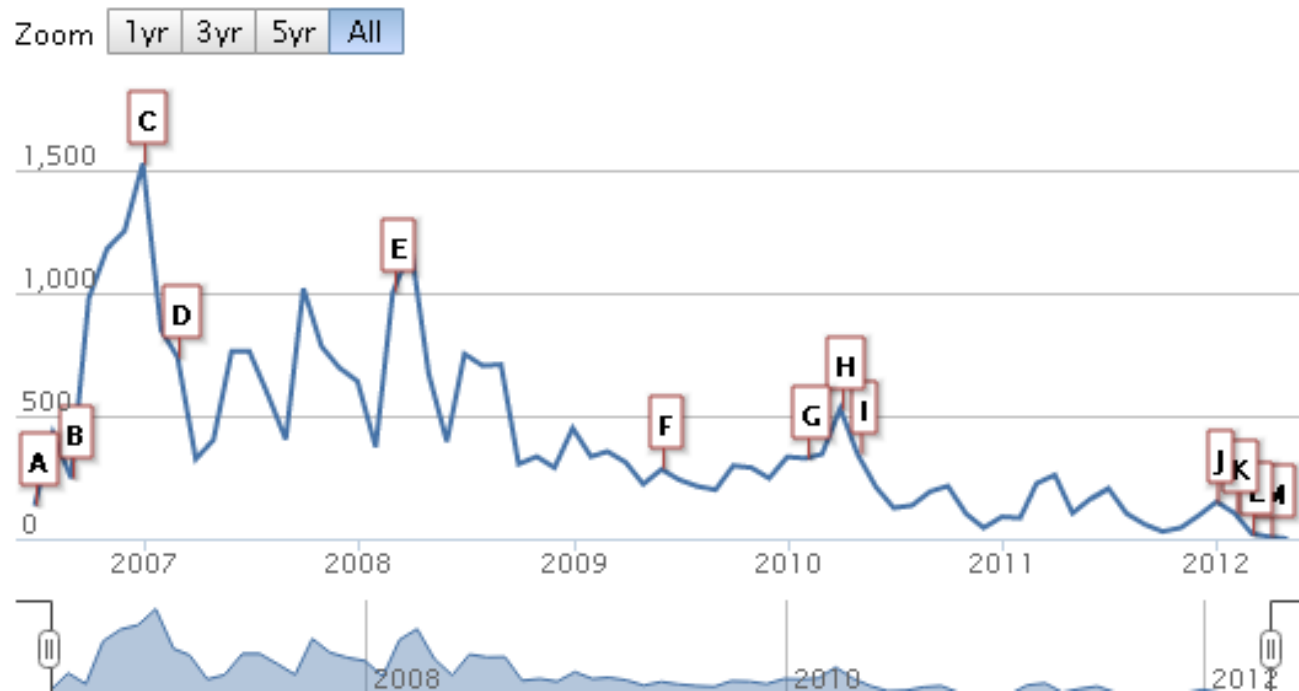


Monthly Commits To Hyperic HQ



## Groundwork

- .Mature, well established code base
- .Earned value: \$27.4M
- .Ohloh user rating 3.4/5.0
- .Limited use, mainly in U.S,
- .Marked decline in number of commits and comitters since 2008
- .Fewer than 5 committers: each dev supporting > 650KSLOC each
- .Essentially now an open core model



Monthly Commits To Groundwork Monitor Core





## OpsView Core



.Mature, well established code base

.Earned value: \$4.2 M

.Ohloh user rating 4.8/5.0

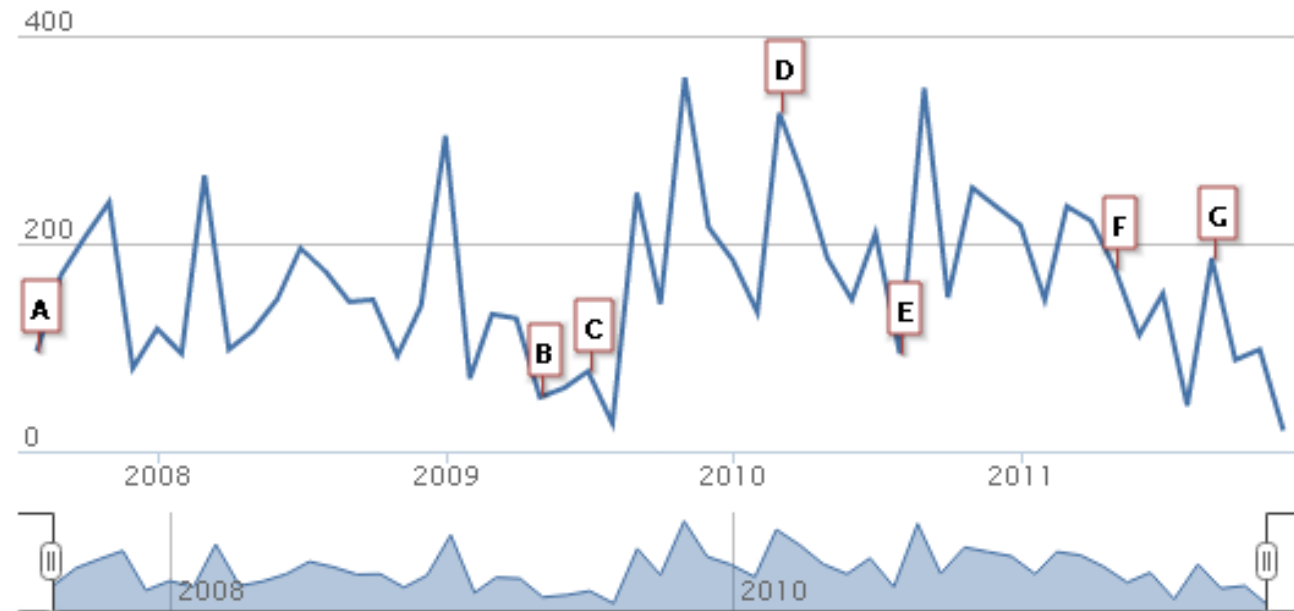
.Limited use, mainly in Europe

. Commits increased thru 2011, then started to drop off

.Committers range from 3-5: each dev supporting > 100KSLOC each

.Moving toward an open core model

Zoom 1yr 3yr All

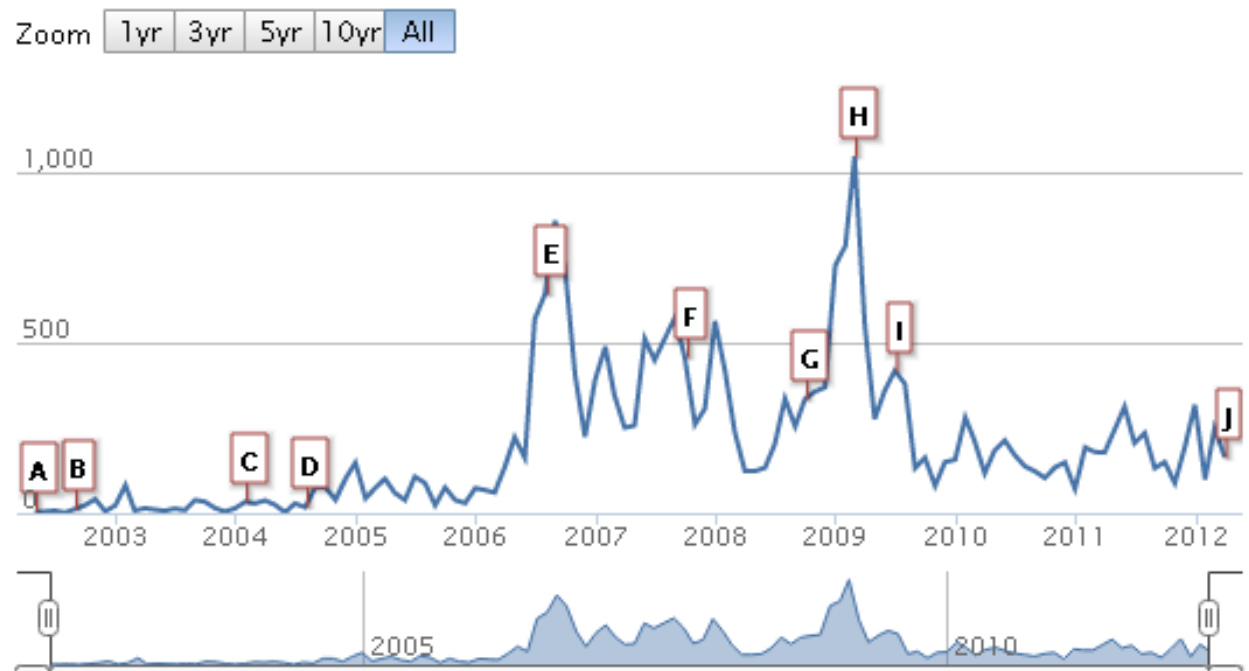


Monthly Commits To OpsView Core



## Open NMS

- .Mature, well established code base
- .Earned value: \$37.3 M
- .Ohloh user rating 5.0/5.0
- .Good usage in Europe and the U.S.
- . Steady commit rate with slight increase from 2010 to 2011
- .High of 16 in May 2011.  
11 in March 2012
- .Well commented source code



Monthly Commits To OpsView Core



## General observations:

- There is a distinct commit difference emerging between waxing projects and waning projects:
  - Waxing: Shinken, Cacti, Icinga
  - Waning: Zenoss, Hyperic, Groundwork
- Do you want a community, or do you want an open core product?
- Watch for SLOC rates/developer over 250K
- Watch for committer number < 5
- Are ecosystems independent or tied to a single vendor?



# What's the financial impact of adopting OSS at scale?



## Case Study: Global financial services firm

Provides asset management, investment banking, private banking, treasury and securities, and commercial banking.

- Using Linux since 2001, OSS now moving up the stack.
- Using OSS app server keeps big ISVs honest.
- Need good developers – not average ones.
- Used OSS as an opportunity to refashion dev processes.
- Now looking at BI, using a lot of Spring
- Need to manage the support ‘fear factor’
- Dev community very happy, I&O is mixed

Result: Per project software costs savings range from 30% to 80%.  
For every \$10 they put in, they get \$4 back.



## Case study: Tecnica Group

Since the '60ies Tecnica is of one of the world's most famous winter sports goods manufacturing groups

- Needed a centralized network management system for the complete monitoring of the entire IT infrastructure
- Needed to manage full control over all worldwide subsidiaries
- Used NetEye get up and running quickly and completely
- Complemented OSS components with service and support

Results: 80 % TCO savings in comparison to other market offers evaluated in the selection process



## Case Study: Sabre

Leading provider of technology and marketing services for the travel industry

- Rewrote z-based reservation app using scale-out arch with Linux, Tomcat, FUSE – now running at peak volumes on 6 M tpd
- Need to make investments in architectural competency
- Acquisition policy “OS first, buy next, build last”.
- Took three tries to get it right
- Anticipate higher costs of training, risks of proliferation
- Always buy support

Result: Saving millions over multiple years vs. mainframe environment.



## Case study: Informatica Trentina

IT company of the Autonomous Province of Trento deployed updated management system to modernize it's public information systems.

- Has been using NetEye since 2009
- Progressively replaced modules of an enterprise solution to reduce complexity and labor costs
- Now monitoring 1600 hosts and 10,000 services
- Increased flexibility and transparency of systems management process
- Added ntop to monitor web applications & their impact on the network
- Analyzes long time traffic usage patterns with open source project "NfSen"
- Discover networked assets using the open source project "OCS inventory"

Results: Reduced TCO by 90% for monitoring compared to previous enterprise system





# In Closing: 10 Best Practices For Enterprise OSS Adopters

1. Appoint an OSS steward
2. Create a comprehensible policy
3. Frontload acquisition processes
4. Require project leaders to identify OSS dependencies
5. Work with EA to regulate exploitation and maintenance
6. Trust teams - but verify with code-scanning utilities
7. Maintain a repository of preapproved OSS components
8. Don't dwell on processes and artifacts; focus on outcomes
9. Don't expect perfection, and plan for remediation
10. Set a contribution policy – it will happen over time anyway