



# Linux and Open Source: 2010 and Beyond

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It was the best of times;  
It was the worst of times





# The 56 slide Deck of Doom





# I prefer Matt Maroon's "Whiner Jerkins" Deck

## How'd We Get In This Mess?

## East Coast Finance Douchebags

- ◉ Harvard MBAs.
- ◉ Never trust anyone with degree from anywhere other than Stanford or MIT.
- ◉ If they were so smart, they would have been VCs to begin with.

## Got Greedy

- ◉ Needed more money for yachts and personal trainers for their trophy wives.
- ◉ Gambled by borrowing, then betting that people who had poor credit ratings were really just misunderstood.
- ◉ Didn't understand anything about the web, but bought Google until P/E ratio hit 872.

## Systemic Collapse

- ◉ Turns out poor people can't pay the mortgage on their \$500k homes by selling their furniture and TVs on Craigslist for more than about 26 months.
- ◉ Analysts downgraded GOOG to hold when market cap exceeded total supply of money on earth.



## So – Wither Linux in 2010?

- **I'll start with Linux, since I know it best**
  - ... and then we'll see how it generalizes to Open Source
- **Why do companies find Linux so interesting?**
  - **Value of Linux**
    - Cost to develop the Linux Kernel from scratch: **\$1.4 billion dollars**
    - Cost to develop the Fedora 9 distribution from scratch: **\$10.8 billion dollars**
  - **No cost of acquisition fees**
  - **No per-unit licensing costs**
  - **Wide array of support options**
    - Do it yourself
    - Free e-mail support from the community
    - Paid support options (up to 24x7 enterprise-style with guaranteed response time)
    - Competition between support options leads to lower costs
  - **Huge numbers of college students are graduating with deep Linux skills**
- **Where are companies finding Linux *especially interesting*?**



# Mobile Computing

- **Smart Phones using Linux**
  - Android
  - Nokia N900
  - Limo
- **Netbooks and Mobile Internet Devices (MID's)**
  - Intel and Linux Foundation's Moblin
  - Andriod
  - Google's Chrome OS



# Cloud Computing

- **“Cloud” means many different things to different people**
  - Platform as a service
    - Public cloud vs. private clouds?
  - Software as a service
    - E-Mail
    - Office systems
    - Customer Relationship Management
    - Business Accounting
- **Common denominator with all of these things is Linux**



# Why is this Important?

- **These are the two major areas where *creative destruction* is going on**
  - People are exposing value by replacing more expensive proprietary technologies with Linux-based technologies
  - Five years ago, this was taking place in the Enterprise Servers and in Enterprise Data Centers
- **These are the two major areas where large amounts of *shared innovation* taking place**
  - Many competitors are working on making the best possible smartphone, most efficient cloud computing platform, etc., and they are doing this by making improvements to Linux.
  - Competitors which are flexible about following the leading edge development get to use each others' improvements.
- **If you are an Linux Developer looking for a job, some of your best prospects will be found assisting companies working in these two areas.**





# How does this work?



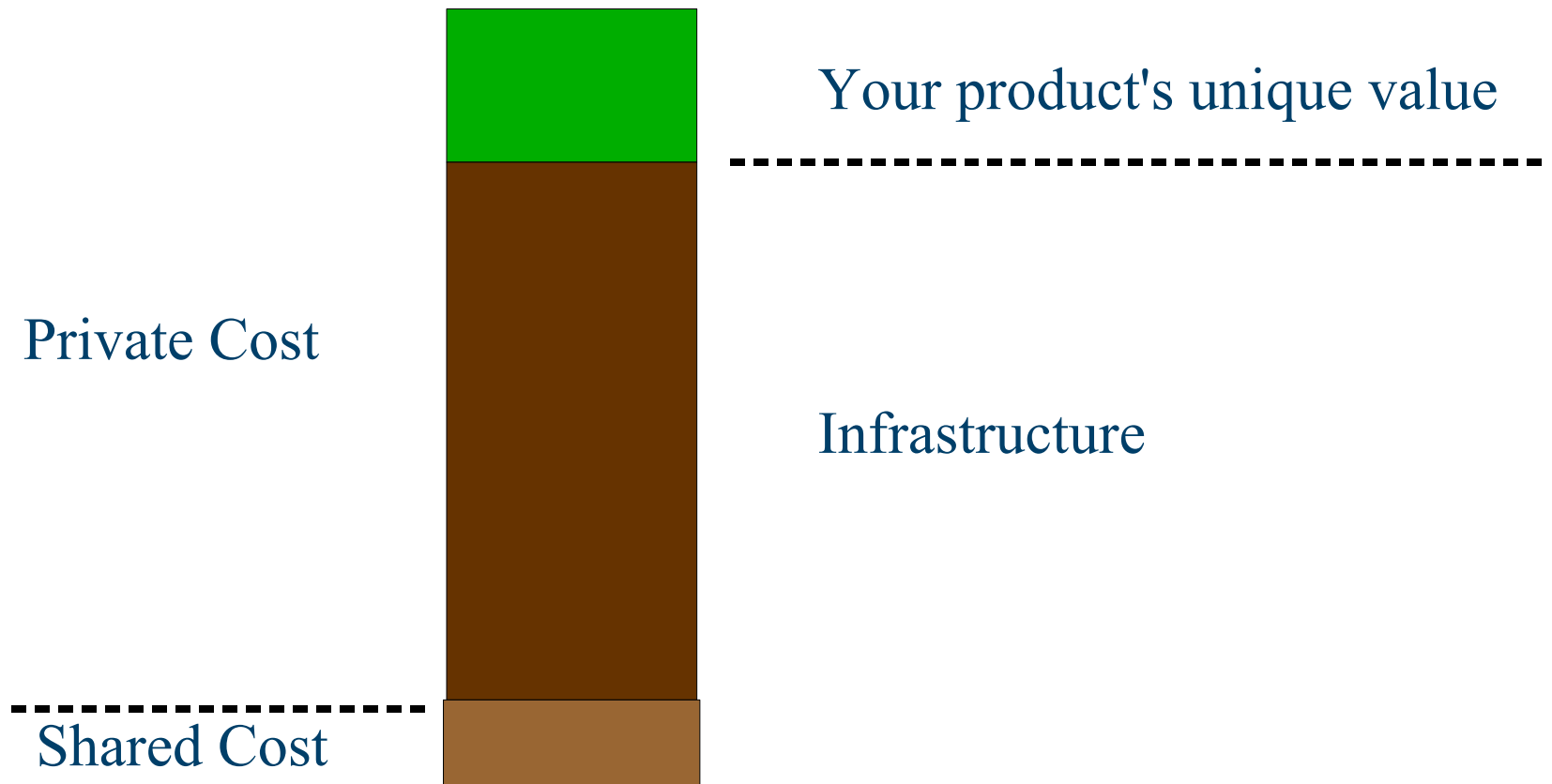


# Basic Economics

- **Profit = Revenue - Expenses**
- **Goal if you are a Harvard MBA**
  - Retire richer beyond dreams of all avarice
  - Maximize profit!
- **How do we do that?**
  - Revenue is based on what customer is willing to pay
    - Ultimately, based on the value of the product that you can deliver to the customer
  - Expenses is based on costs to develop, maintain, and produce your product

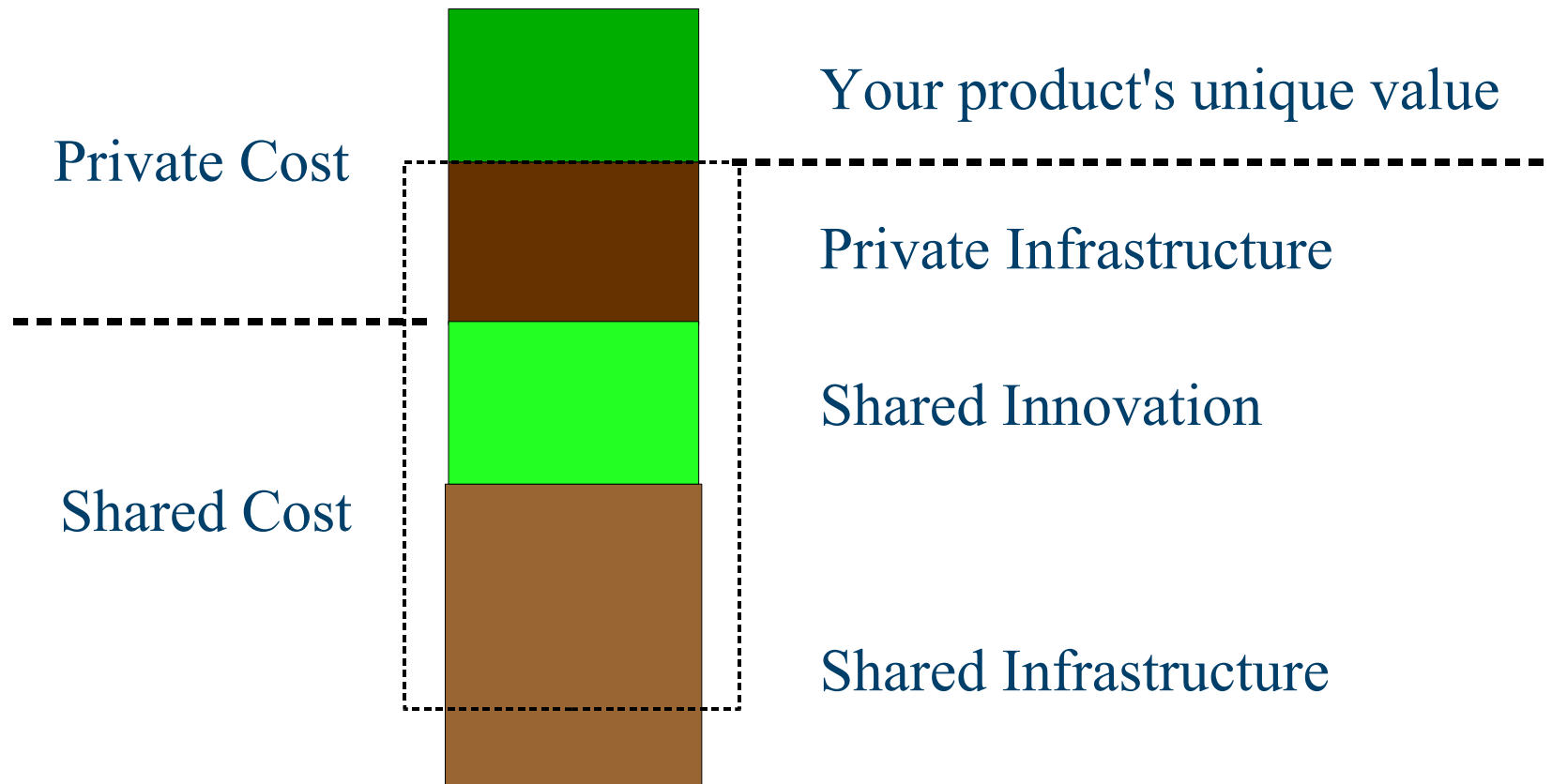


# The Innovation/Value Map



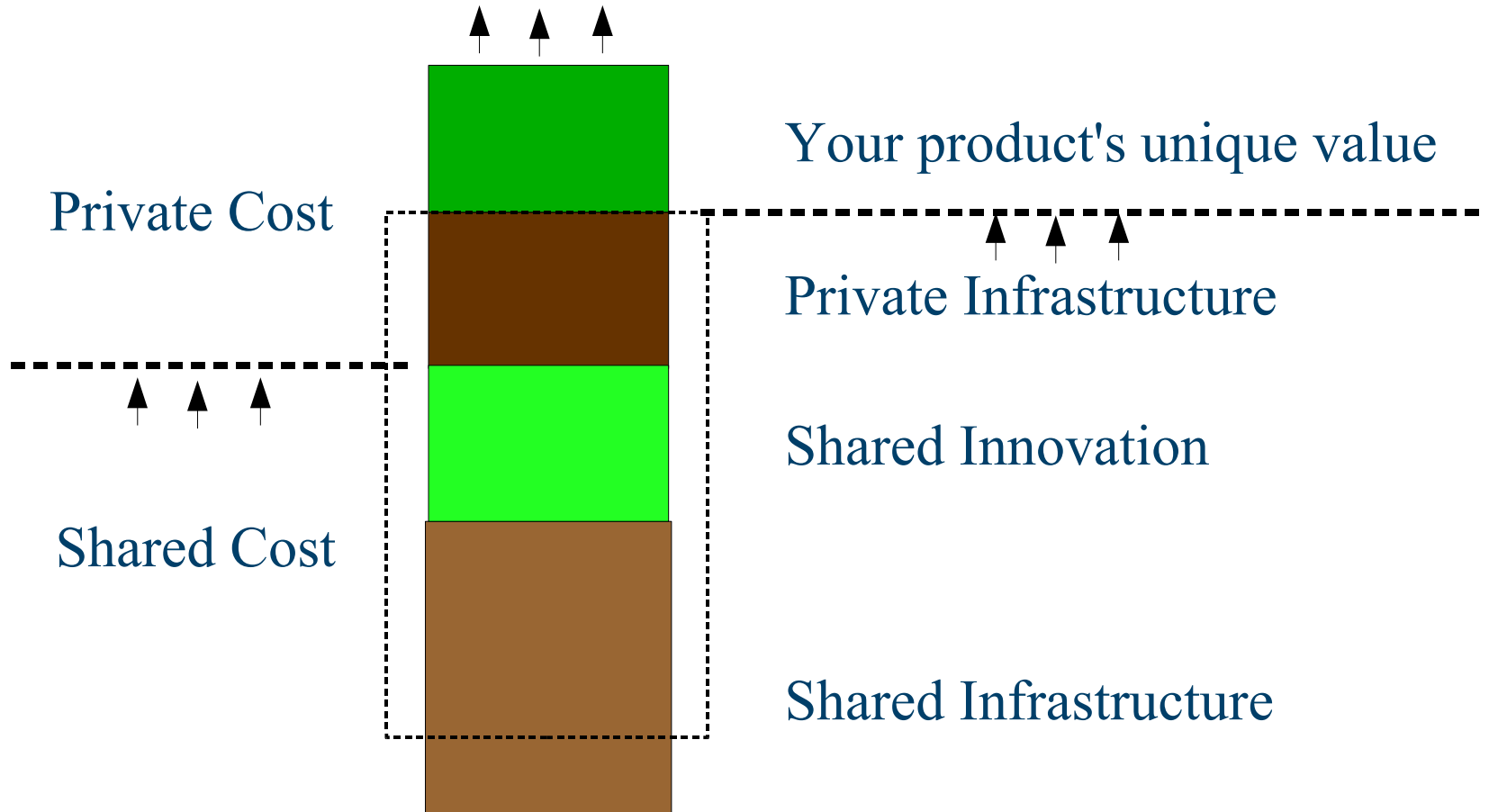


# The Innovation/Value Map with Open Source





# Climbing the value stack





# Putting it all together: what successful companies using Linux/OSS need to do

- **Leverage and protect your unique product value**
  - **Don't** place the value inside the kernel or some other OSS component
  - **Do** use well-defined (plug-in) interfaces
- **Ruthlessly cut costs everywhere else**
  - Take advantage of shared infrastructure
  - Take advantage of shared innovation
  - Share experts across multiple companies

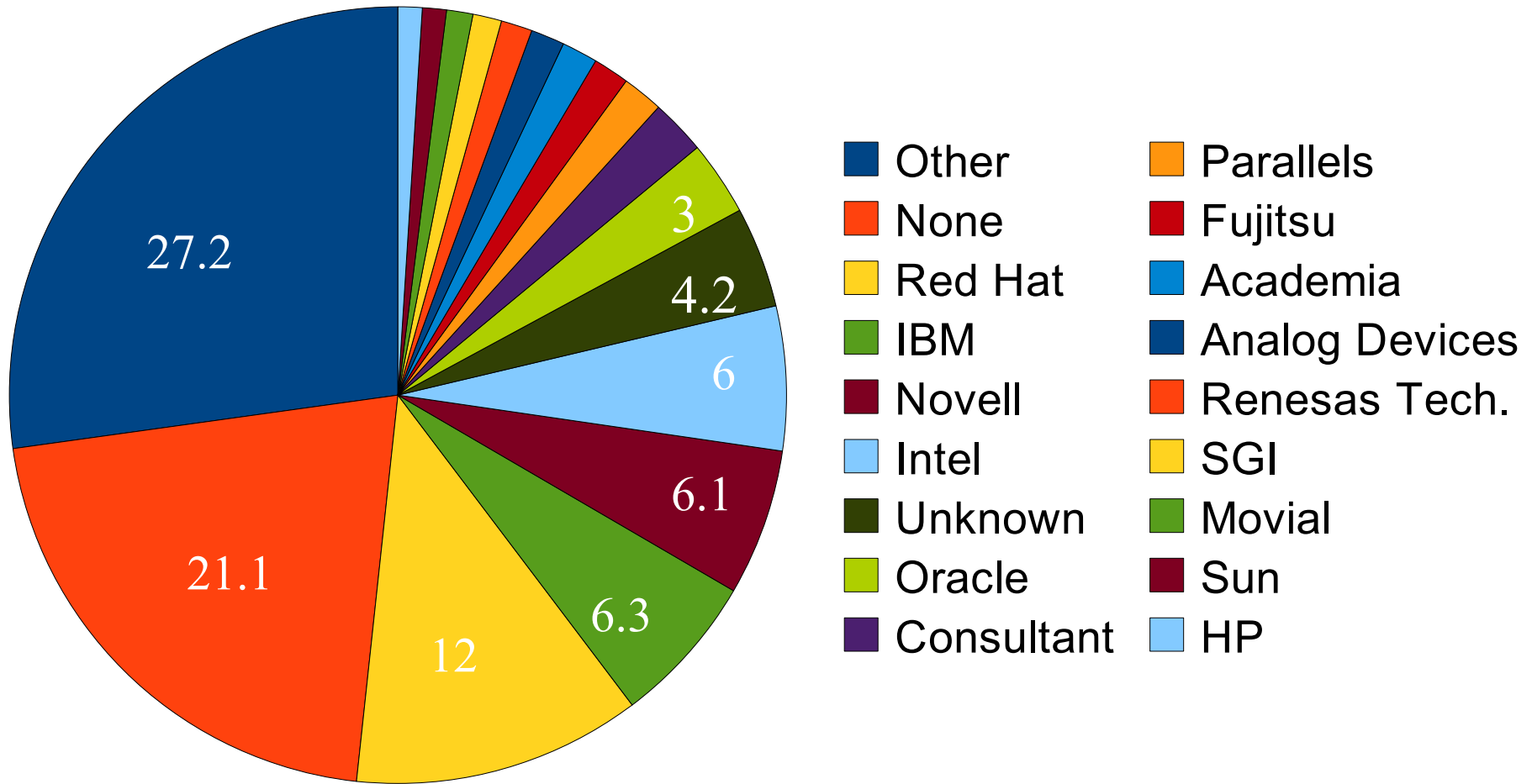


## What about the hobbyist developers?

- **“You're talking as if all of the Open Source Developers work for (large) companies!”**
- **Response #1: Well, most of us do like food with our meals...**
- **Response #2: Hobbyists definitely do exist!**



# Who Develops Linux?



# Changes from 2.6.24 to 2.6.30 by Company  
(January 2008 – June 2009)





# What about the hobbyist developers?

- **“You're talking as if all of the Open Source Developers work for (large) companies!”**
- **Response #1: Well, most of us do like food with our meals...**
- **Response #2: Hobbyists definitely do exist!**
- **But....**
  - Most of the hobbyist contributions tend to be device drivers, minor clean ups and bug fixes, etc.
  - The major subsystem maintainers and a lot of the more complex and subtle code are done by contributors who can work on the code base full time --- and have some kind of corporate support.
- **The successful Open Source Project should have some way for hobbyists and entry-level programmers to contribute**
  - We were all beginners at one point!
  - Some of the hobbyists/begnners may one day become a major subsystem contributor or maintainer.



# What about Enterprise Servers?

- **There will still be lots of machines in data centers running Linux and Open Source Software**
- **But remember, the operating system (at this point, essentially all of the LAMP stack) is a cost center.**
  - Machines don't run Linux (or Solaris, or AIX) just for the sake of running an operating system
  - It's all about the services that they can provide
    - Websphere™, SAP R/3™, Siebel™, Web e-tailing, etc.
  - It's rare now that CIO chooses a hardware and OS platform based on a file system
- **Innovations are still taking place based in the Enterprise Server environment**
  - Example: Real-time Linux
  - But, more often than not, improvements meant for other environments (i.e., better power management) become taken up and consumed for Enterprise Servers



# What about the Desktop?

- **Linux 2010 will be the year of the Linux Desktop**
  - Just as 2009 was, and 2008, and 2007, and 2006....
- **The desktop is *hard*.**
  - Usability is something that takes a lot of effort
  - The business case for investing large amounts of money to make a credible desktop has been very hard to make
- **Many Open Source developers are using MacOS laptops**
  - And that's O.K.....
  - ... if you don't mind living in a velvet prison
- **The Open Source desktop stack *is* getting better, although not as fast as we'd like**
- **With more and more cloud or web-based applications, what users run on their desktop matters less and less**



## Conclusion

- **“Mr. Speaker, I stand before you to say that the state of Linux and Open Source Software is strong!”**
- **(More) companies are coming to understand how to utilize Open Source Software to their best advantage**
  - Engineers who can help their companies use OSS more efficiently are worth more to their companies  
And if you are worth more, you should be paid more 😊
- **If you can answer this question, you might be able to become rich: Mobile and Cloud Computing will drive Linux / OSS for at least the next 2-3 years. What's the next big driver of Open Source Innovation beyond that?**



**Thank you for listening!**





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