Sustain your OSS Biz.

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& Fellow at The Linux Foundation

Disclaimer

The opinions and views expressed here are my own, and do not reflect those of my employer or its clients.

OSS, what is the value for you?

- What is the OSS for you?
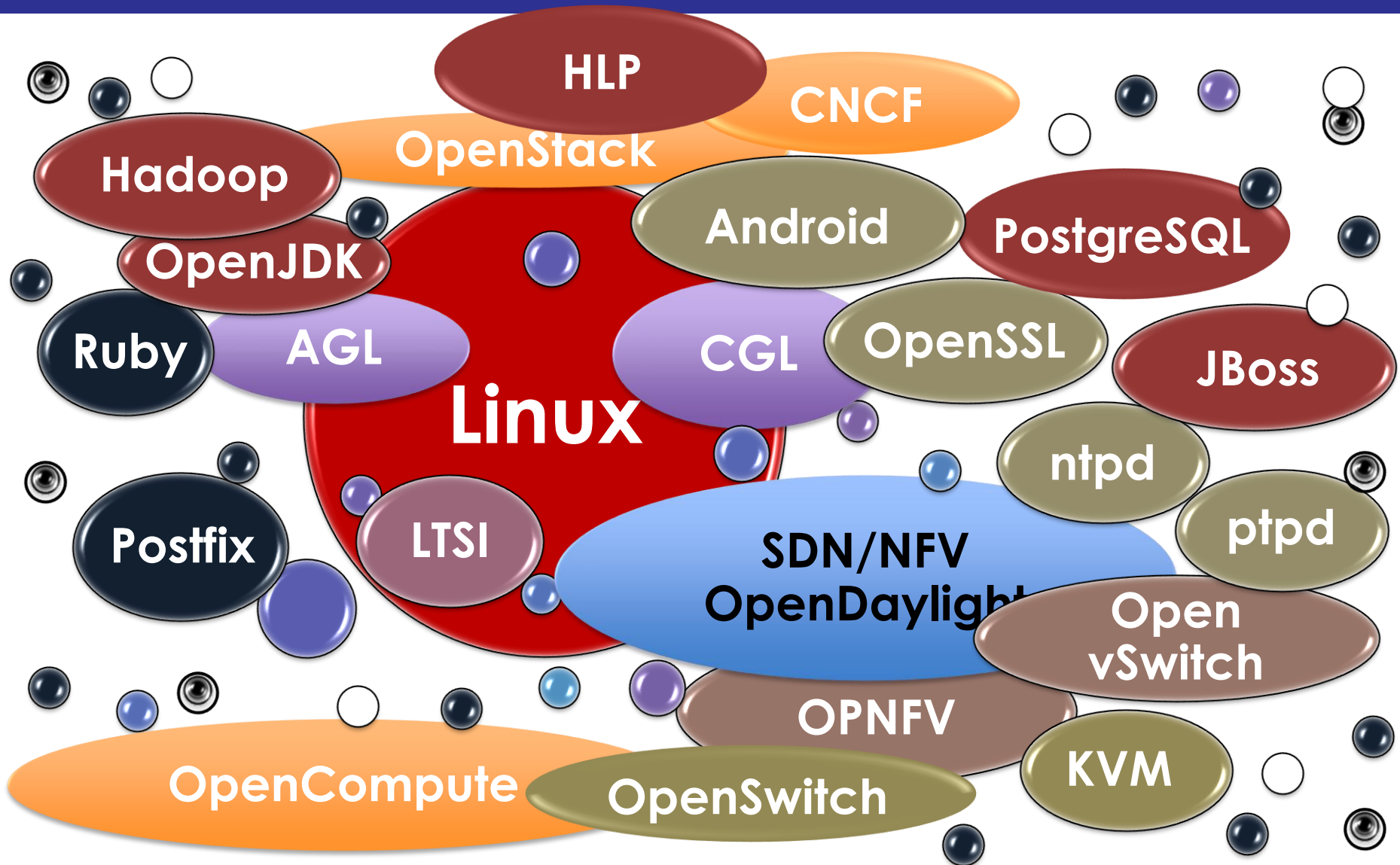- Why do you use it?

OSS, what is the value for you?

- What is the OSS for you?

- Why do you use it?

- Most likely answer,

  "Reduce development cost"

What is OSS for you?

"Over 80% of the software in our handsets is open source"

- Carl-Eric Mols, Head of OSS, Sony Mobile Communications

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What is OSS for you?

HLP

CNCF

OpenStack

Hadoop

Android

PostgreSQL

OpenJDK

Ruby AGL CGL OpenSSL JBoss

Linux

ntpd

ptpd

Postfix LTSI SDN/NFV OpenDaylight

Open vSwitch

OPNFV

OpenCompute OpenSwitch KVM

Nature of the OSS

- If you would develop your product or service, you may face lacked feature/instability in the OSS

- Someone developed for their business
  - Very well tested for his businesses
  - May not take care about other business

- Almost no difference against proprietary software
  - Vendor assumes workload and test cases for it
  - You can request lacked feature to vendor/community

Difference between OSS & ISV

- ## You may request lacked feature to the project
  - Add your requirement to To-Do List in community
  - A person who understands your business may develop it

- ## You can directly pay cost for the development
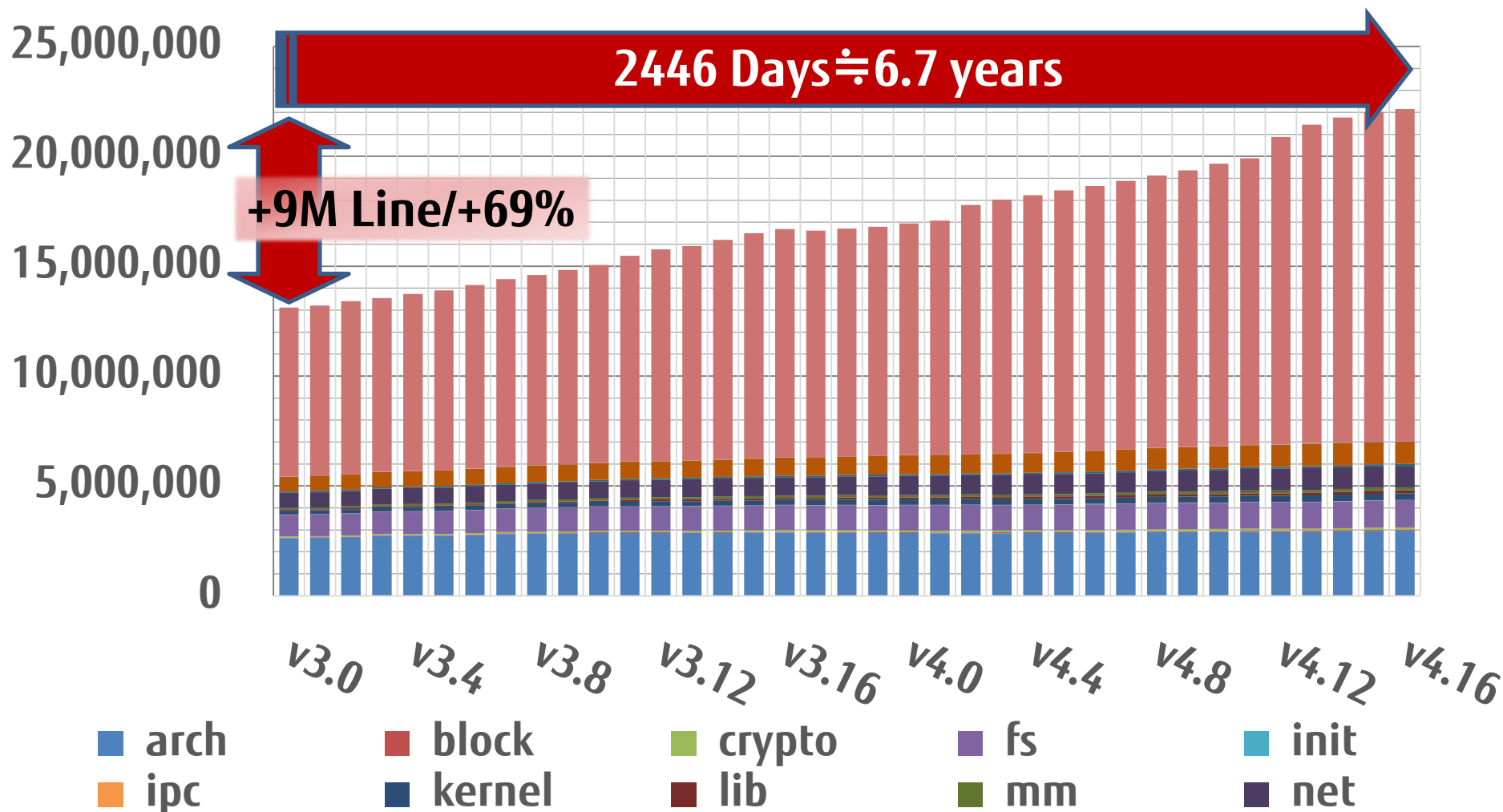 - There should be source code

OSS as Opened Source Software

To release your product/service with dead line

- Most likely: Develop platform only in downstream
  - Fork source code from upstream
  - Add required features to the forked code

- You have to maintain forked source code
  - Keep it healthy: Backport more than 100 CVEs to your platform
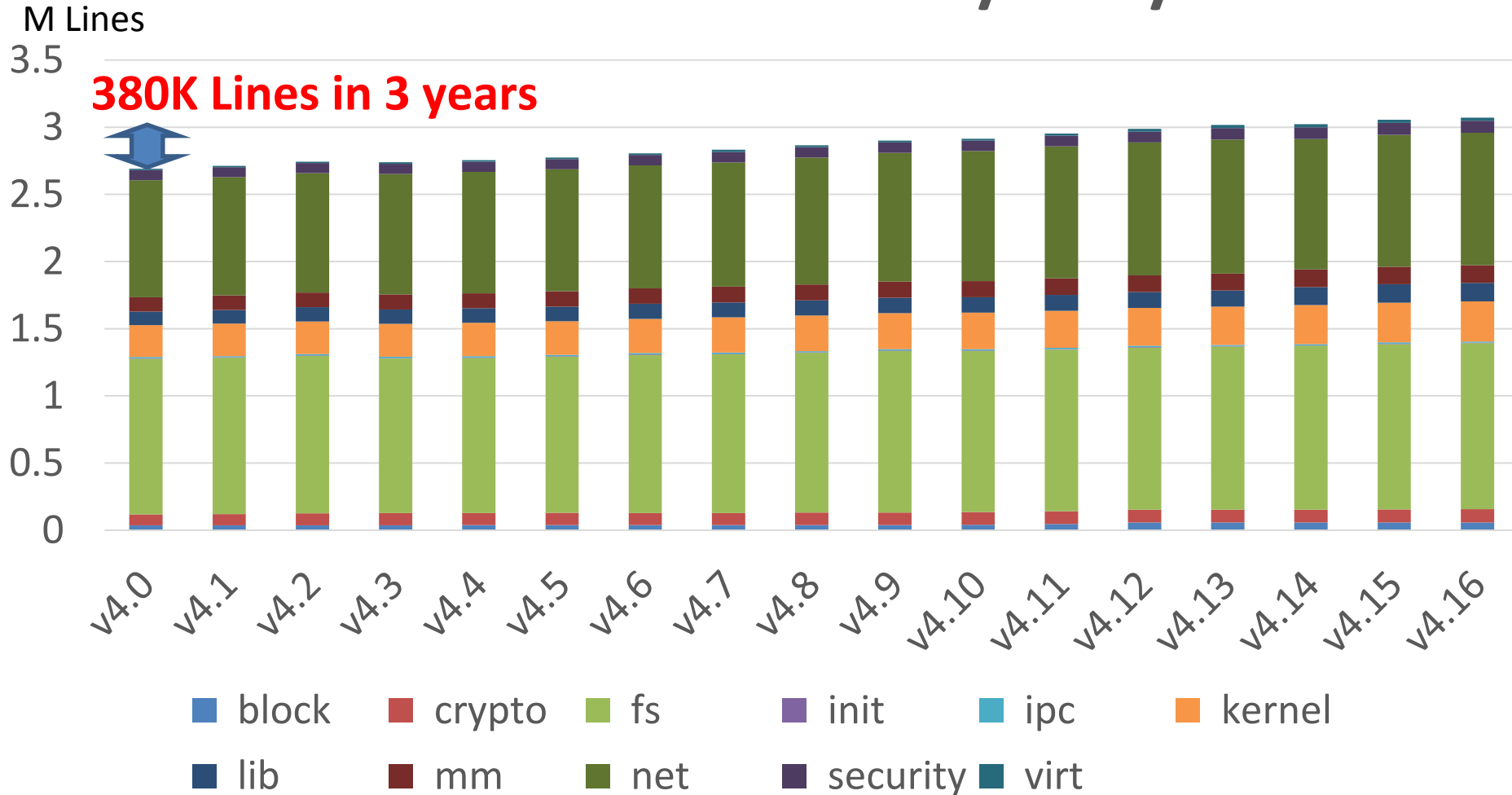 - Keep adding new features: Keep maintaining your own fixes

Growth of Linux

LoC of Linux including device tree

2446 Days÷6.7 years

+9M Line/+69%

Legend:
- arch
- block
- crypto
- fs
- init
- ipc
- kernel
- lib
- mm
- net

X-axis versions: v3.0, v3.4, v3.8, v3.12, v3.16, v4.0, v4.4, v4.8, v4.12, v4.16

Y-axis: 0, 5,000,000, 10,000,000, 15,000,000, 20,000,000, 25,000,000

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Growth of Linux in Core part

Linux LoC without drivers/arch/sound

380K Lines in 3 years

Legend: block, crypto, fs, init, ipc, kernel, lib, mm, net, security, virt

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To keep maintenanceable

- Need to rebase it in the meaning time to latest

  May have to

  - Forward-port your own added features
  - Solve confliction between your own features and upstream

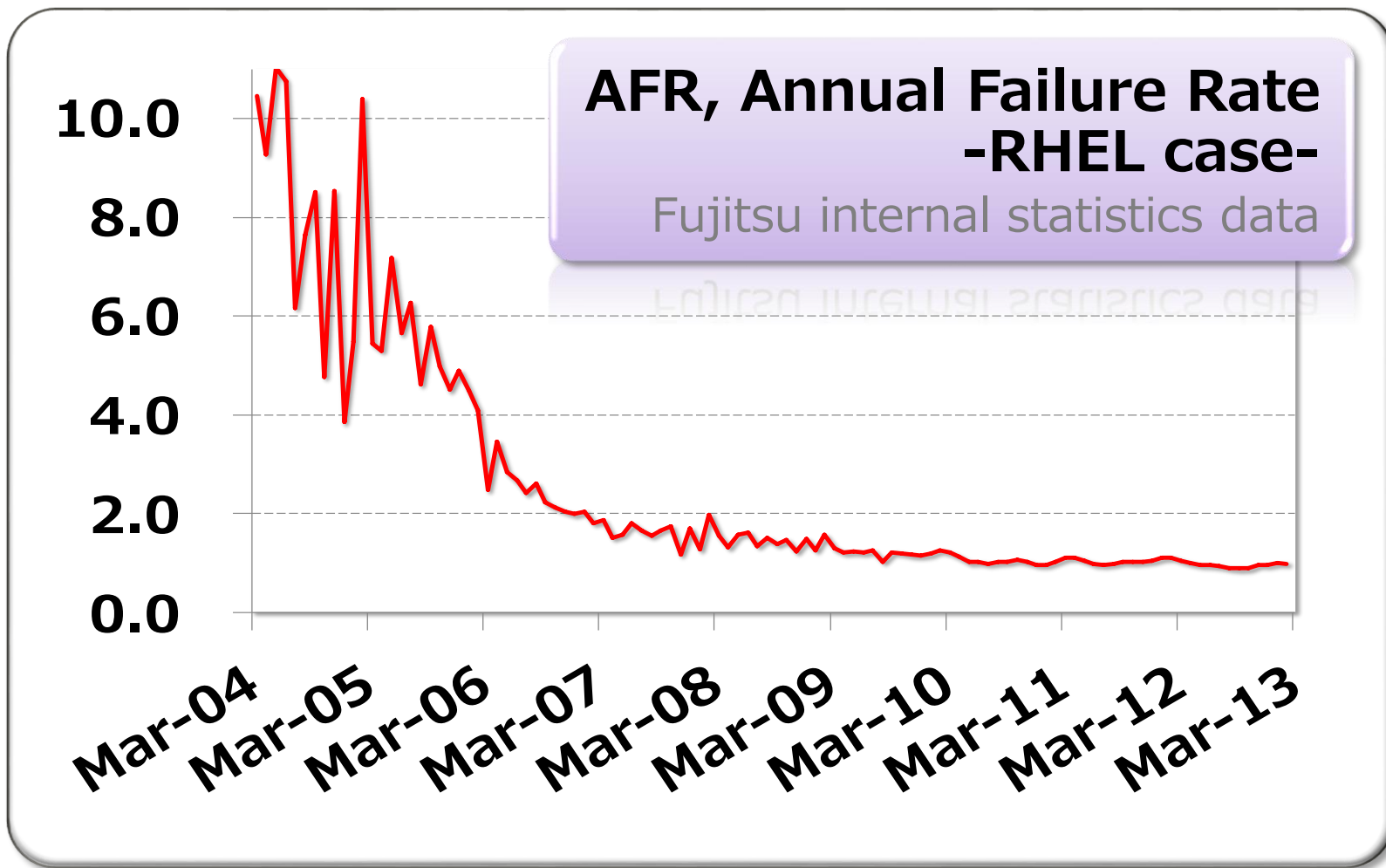# To keep maintenanceable

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- How to avoid this painful maintenance process

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- How to avoid this painful maintenance process

It's better to contribute features back to upstream

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Contributing bug fixes to upstream

AFR, Annual Failure Rate
-RHEL case-
Fujitsu internal statistics data

Contributing bug fixes to upstream

- 95% of customer incidents
  = Already fixed in upstream

- My customers will **never** hit same bugs in the future

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Fujitsu's foot print in communities

- **Contributing to Linux over 10years**
  ## Mission Critical systems

- **Expanding the technology areas to prepare to**
  ## Digital Business innovation

# of Commits

Year	Commits
2005	35
2006	206
2007	141
2008	569
2009	929
2010	647
2011	803
2012	817
2013	1207
2014	1665
2015	2898
2016	4024

No.6 in WW (2013)
No.5 in WW (2016)

Legend: ■ LinuxOS ■ KVM ■ SDN ■ OpenStack ■ Container

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This is a foundation of our business

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| 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 |

■ **LinuxOS**   ■ **KVM**   ■ **SDN**   ■ **OpenStack**   ■ **Container**

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Difficulty in OSS development

In Platform, diversity and conflicts in requirements among vendors

∴ **Shared among huge-servers and small IoT devices**

To drive your business

If you need to develop mandatory features in OSS for your business,

you need world-class talent

Do you know him?

Do you know him?
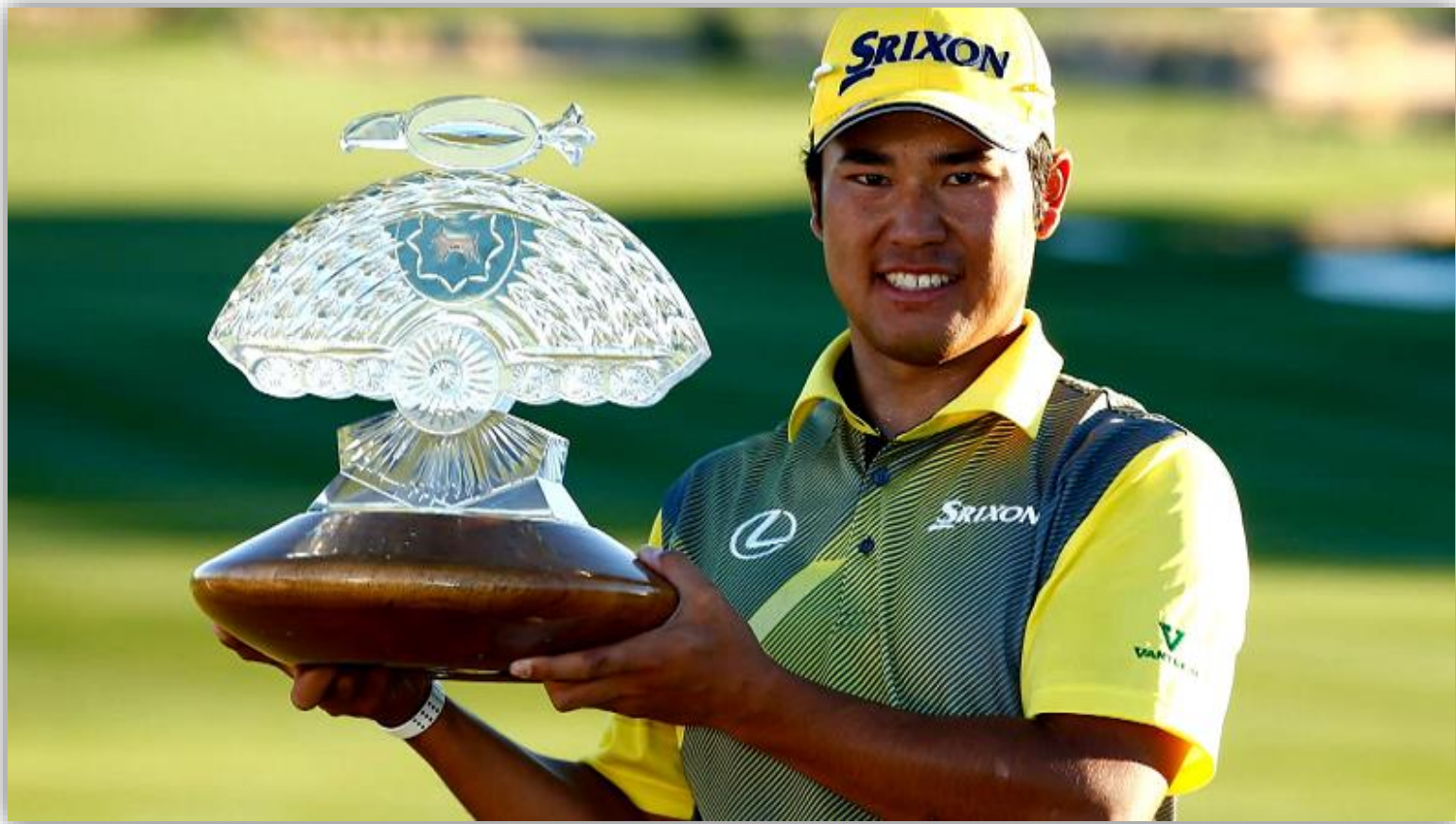

Linus Tovalds,
The Creator of Linux

Do you know her?

Do you know her?

Ai FUKUHARA(福原 爱),

Japanese table tennis player and Olympic medalist

Do you know him?

Do you know him?

Hideki MATSUYAMA(松山 英树),

Japanese professional golfer who won the Asian Amateur Championship in 2010 and 2011

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Do you know him?

Do you know him?

Ichiro Suzuki(铃木 一朗),

**Japanese professional baseball right fielder for
the Miami Marlins of MLB**

Common point among talents?

To create another Linus..

Common point among talents?

Engaged in good competition
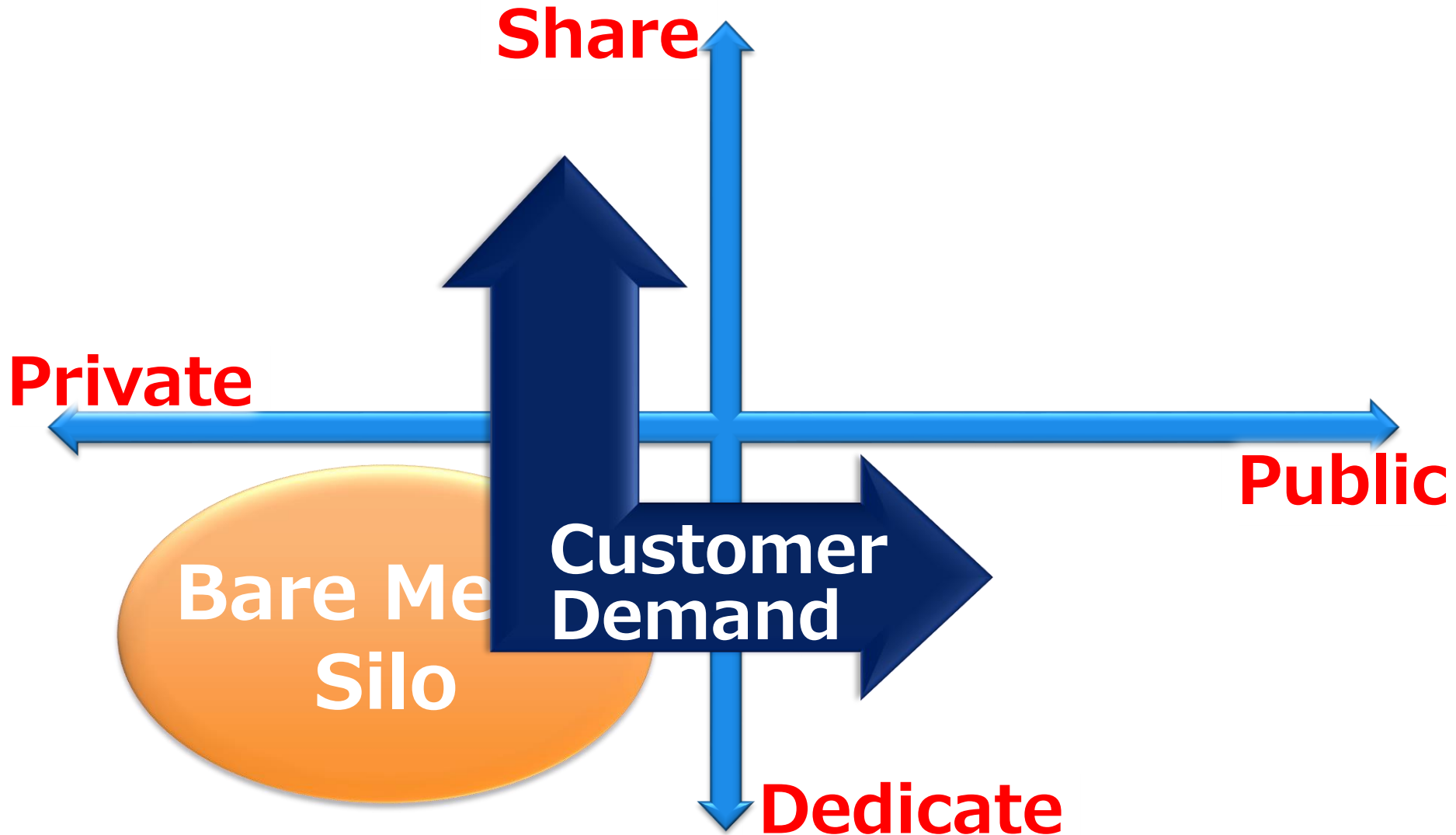   **"Environment" created those talents**

To create another Linus..
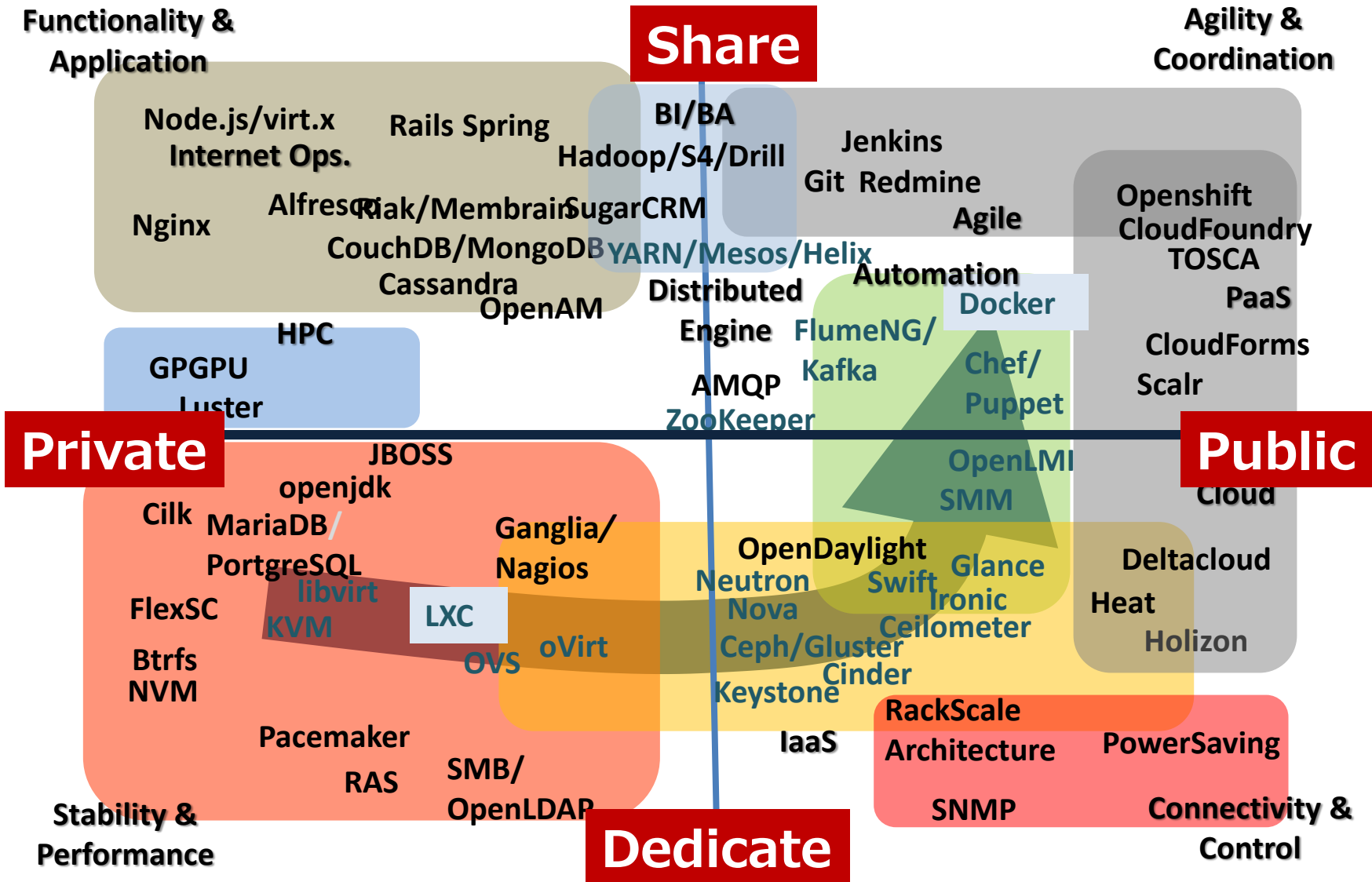
Common point among talents?

Engaged in good competition
"Environment" created those talents

Need Long time to create them...

Create world-class talent

- **Create your own roadmap**

- **Develop outside**

- **Communicate in WW**

To Sustain your OSS business

Provide your own patches back to Upstream

Create the world class talent to create your own differentiation to compete