

Nov. 4th, 2010

Consumer Electronics and OSS

- From Users to Contributors -

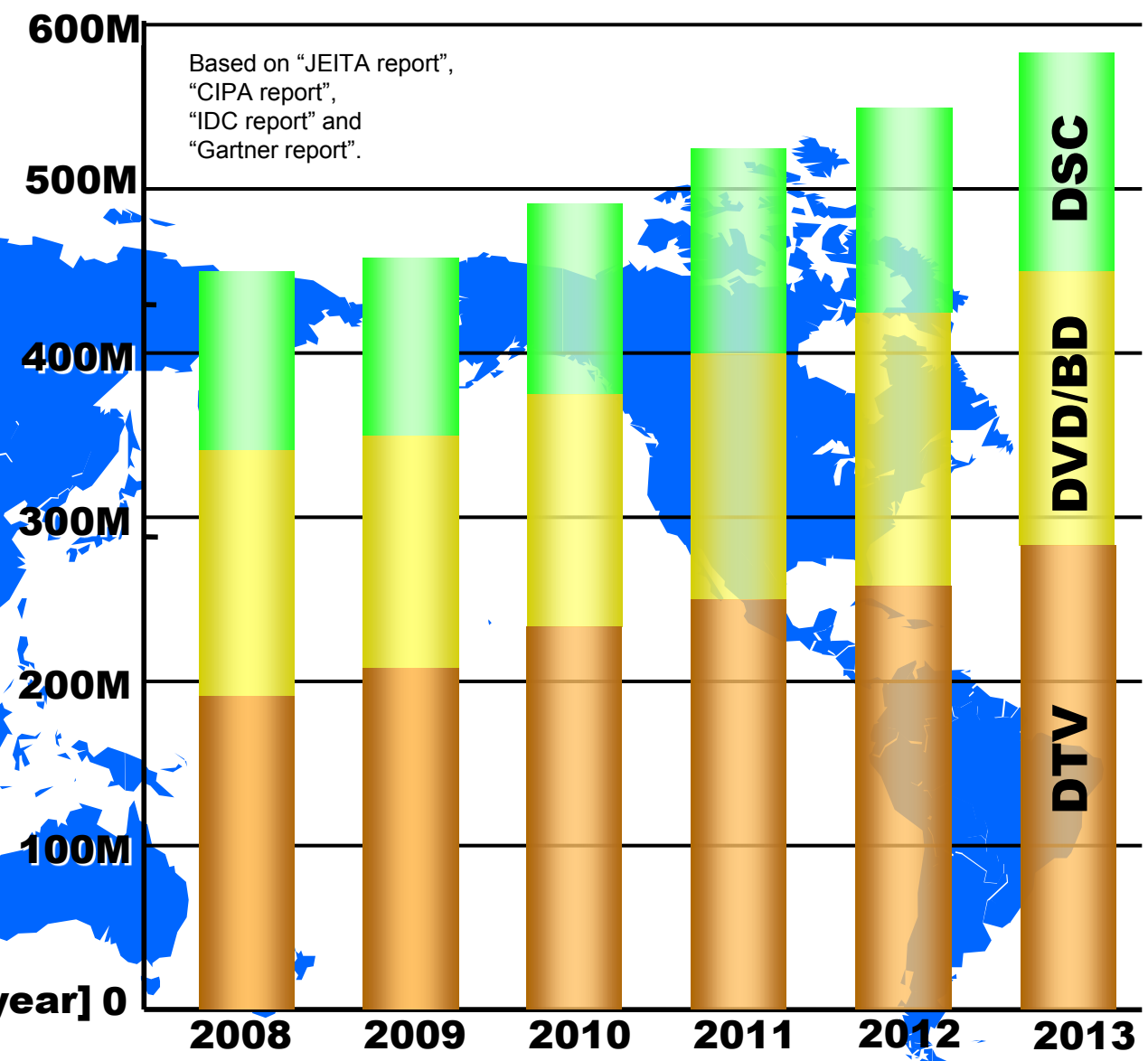
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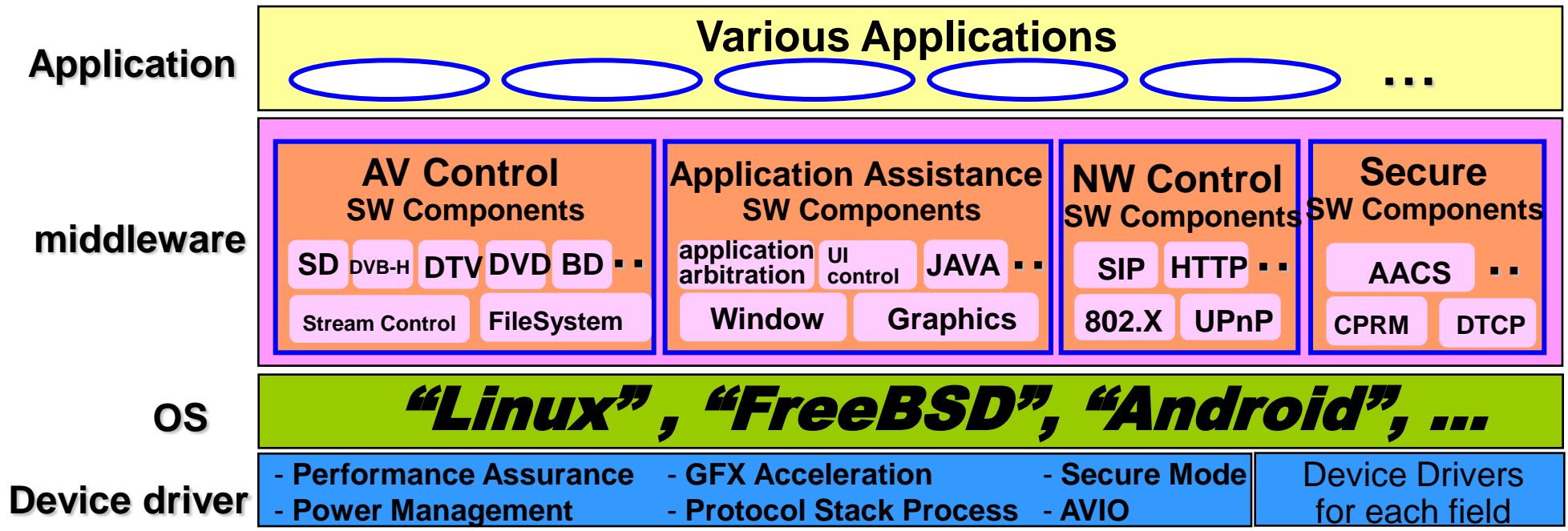
**Embedded System Sub Committee
Japan OSS Promotion Forum**

Rapid market growth of Digital CE

Digital CE Market is still growing rapidly



Competing in the market, but...



Collaboration with Rivals

Founding CE Linux Forum

June 2003

Open Collaboration worked ideally

Sony and Panasonic



**“Why don’t us expand this relationship globally?”
Including rerating industry, such as software
vendor, semiconductor vendor
And together with community**

Members at the founding moment

Sony, Panasonic (founder)

Hitachi, Sharp, Samsung, Philips, Toshiba, NEC, IBM

Why Linux is adopted for CE?

CE does not adopt proprietary OS nor third party's OS, but adopts Open Source based OS such as Linux.

CE requires multi processing such as playing BD and recording TV programs simultaneously.

Defacto “network protocol stack”

Open innovation by mutual value innovation

Quality assurance by ourselves with opened source code



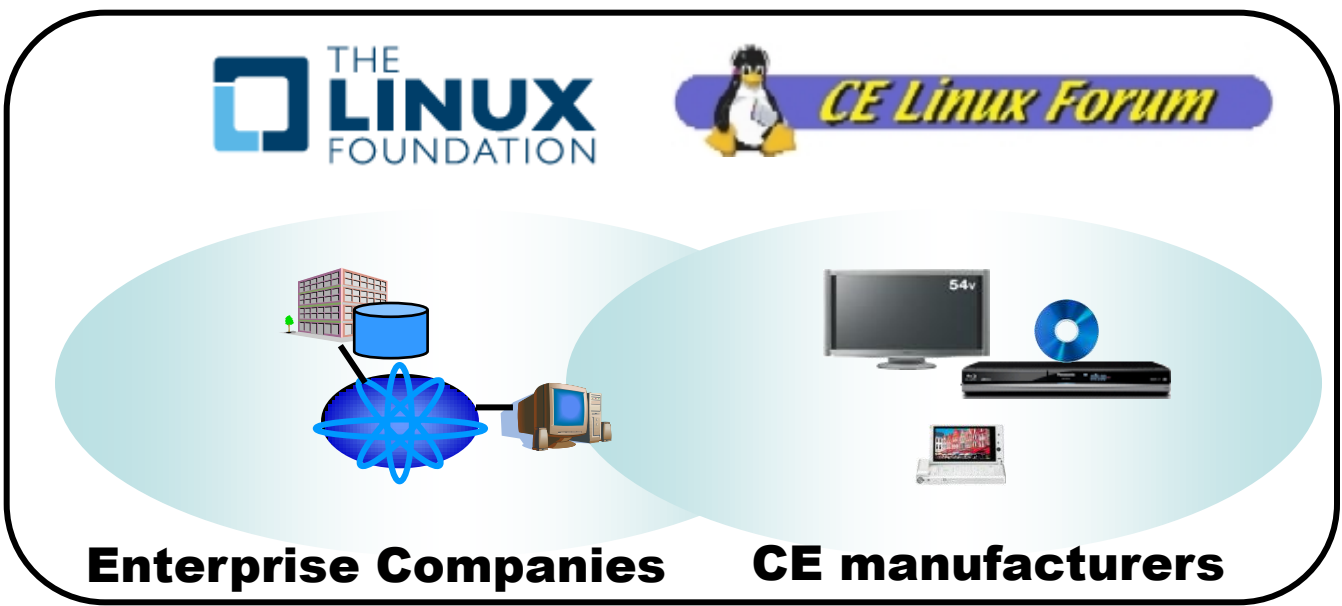
Ecosystem of OSS

Open Source Community



Adoption as "Users"

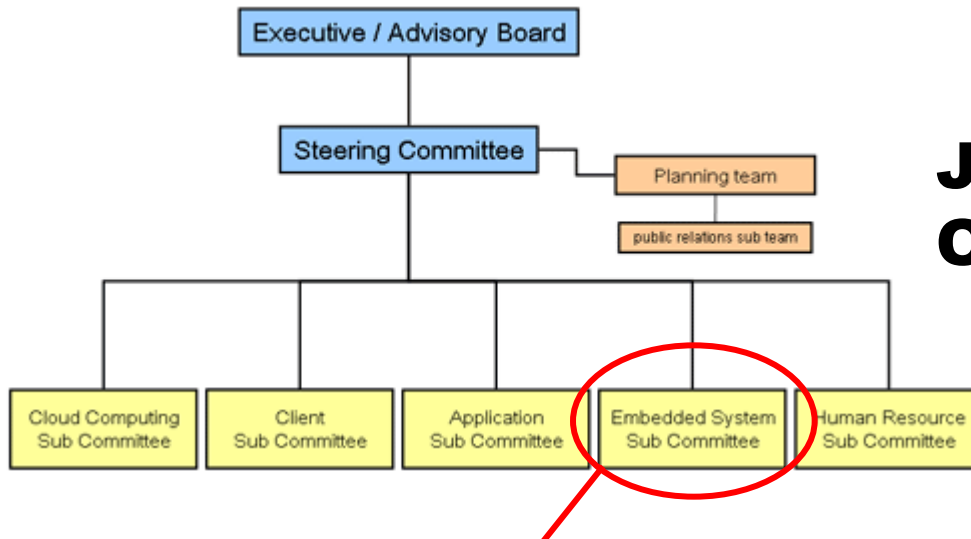
Innovation as "Contributors"



Enterprise Companies

CE manufacturers

Role of Japan OSS Promotion Forum



Japan OSS Promotion Forum Organization structure

Embedded System Sub Committee: chairman Ueda-san (Sony)

The role of Japan OSS Promotion Forum is as follows;

- **Making policy and strategy to enhance OSS ecosystem**
- **Sending executive message on above policy and strategy**

Is “Embedded” at far side of community?

- **In fact**
 - **Different requirements**
 - **Various CPU architecture**
 - **Less memory**
 - **Sometimes even no console required**
 - **Very quick boot up and savior real time**
 - **Unusual device support**
 - **Less visibility in the community**
- **Is it true that “Embedded” is at far side?**
 - **Actually many consumer electronics products are fully utilizing Linux**

Adoption of the Innovation in Embedded

Former:

**OSS is mainly innovated in enterprise field.
Embedded adopts the result of OSS.**



Cellular Phone



Enterprise
server system



Power Management

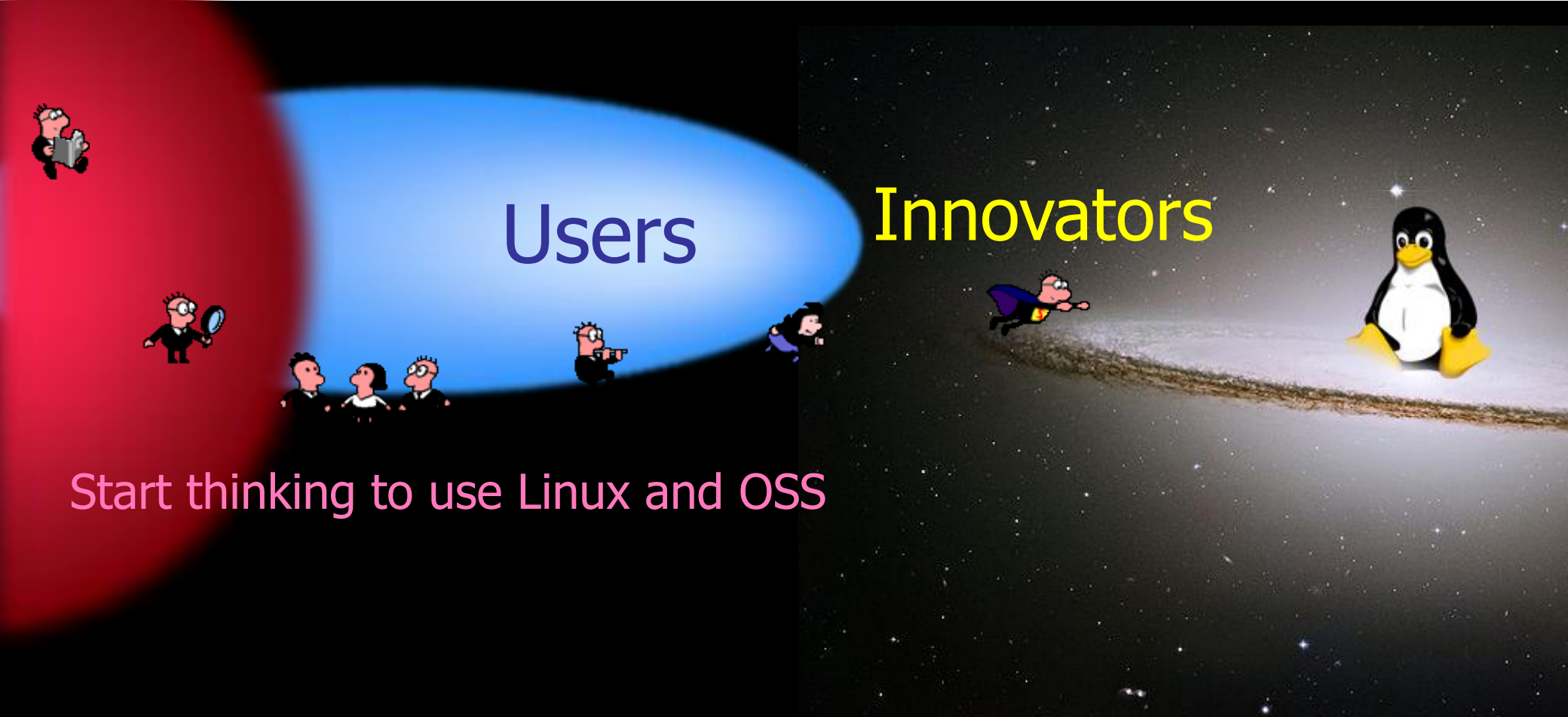
Currently:

Some part of OSS is innovated in embedded field.

Embedded Technology could be Innovator of OSS.

Three types of people around OSS

Currently most of CE engineers work as users, but some of them move to be innovators by contribution in OSS community.



Users

Innovators

Start thinking to use Linux and OSS

Users

- **Role in the community**
 - **Tell what you need (requirement) to the community**
 - **Tell your new ideas to improve**
 - **Report the bugs you encounter and your solutions if you have**
- **They empower to the innovators**
- **The innovators will bridge you and community**
- **The majority of Consumer Electronics Asian embedded developers**

Innovators by Contribution

- **Role in the community**
 - **Initiate the evolution**
 - **Communication**
 - **Harmonization among various requirements and solutions**
- **Bridge between actual system development scene and community**
- **Ensure the future prospect to keep along with Linux**

Investments program 2010 (CELF)

CE Linux Forum invest to those development projects

- **Add LZO compression support to SquashFS**
- **Add PramFS filesystem to the mainline kernel**
- **Investigate UBIFS mount time problems**
- **Mainline the YAFFS2 file system**
 - **A key software module for Android**
 - **Joint investment together with Google Android team**
- **Create a trace data format standard**
- **Create online training for using RT-Preempt**
- **Add bootchart support to busybox**
- **Enhance support for ARM processors in U-Boot**
- **Improve the kexecboot program**

**We hope that North East Asia OSS
promotion forum understands the policy
to suggest embedded engineers to play
as not only users of OSS
but also innovators/contributors.**

Panasonic
ideas for life

Thank you for your attention

