Organizational Culture and Structure at FreeBSD
## Nothing to learn from Business Schools ;)

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Trailer
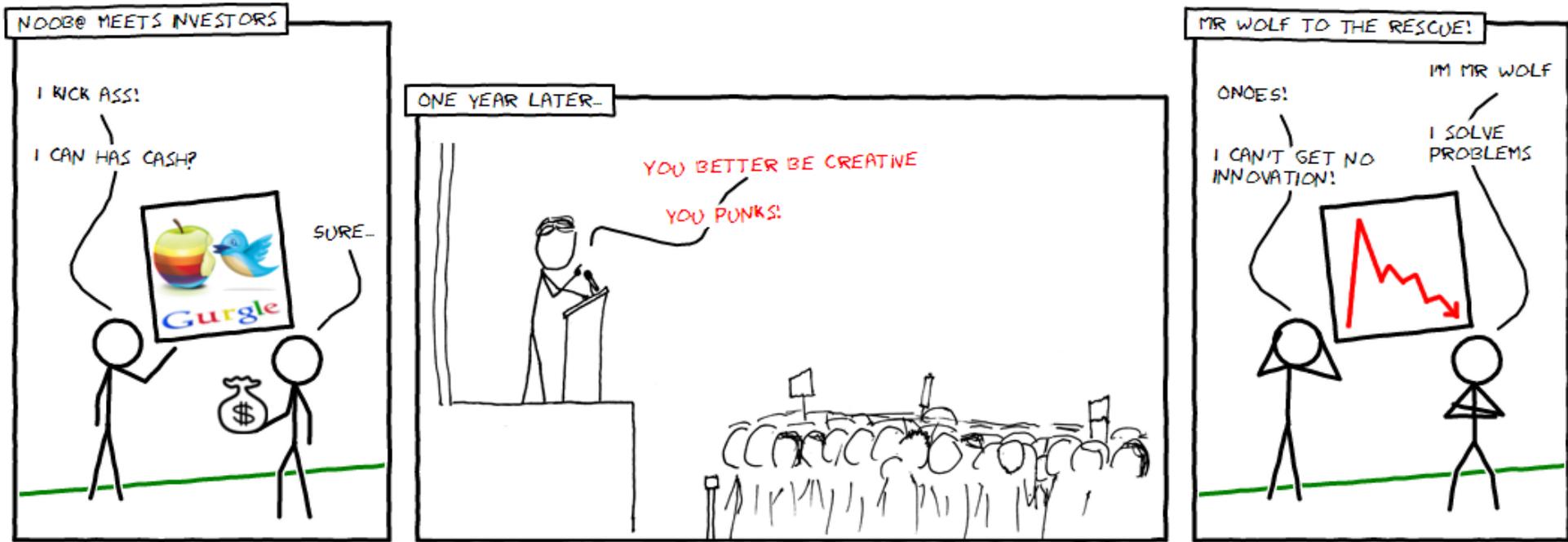
Outline

▶ **Trailer**

▶ **Organizational Culture**
  culture: wtf?
  empowerment
  hierarchy of needs and motivation
  creative swiping and NIH syndrom
  playfulness

▶ **Organizational Structure**
  self-organization
  natural system
  boundary spanning
  virtual teams

▶ **Summary**
  FreeBSD traits
  so what?
  last thought

Sustaining innovation: is organizational culture involved?

"An organization's culture is what determines how people behave when they are not being watched."

-- Tom Tierney, *former managing partner, Bain Consultancy*

Trailer
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Culture
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Structure
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Ending
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Organizational culture, wtf?

▶ Deal and Kennedy (1982): culture defined as *"The way we do things around here"*

➔ refers to the **attitudes**, **rituals**, **symbols**, **values** of an organization

ONOES!

WHAT CULTURE DO I NEED ?!

▶ Examples of organizational values:

we lead by example
we respect the individual
we act with integrity
fast is better than slow
focus on the user and all else will follow
you can be serious without a suit
...

Deal, T. E., Kennedy, A. A.,
Corporate Cultures: The Rites and Rituals of Corporate Life, Harmondsworth, Penguin Books, 1982.

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Empowerment (1/2)

Cooperative, Committed, And Proactive workforce

Empowerment

Semco Partners

Control

Codetermination

Consultation

Communication

Information

YOU MUST EMPOWER YOUR WORKFORCE!
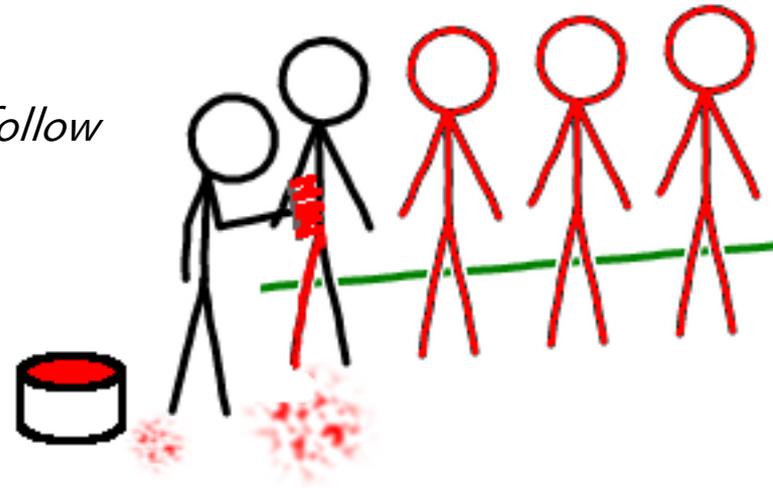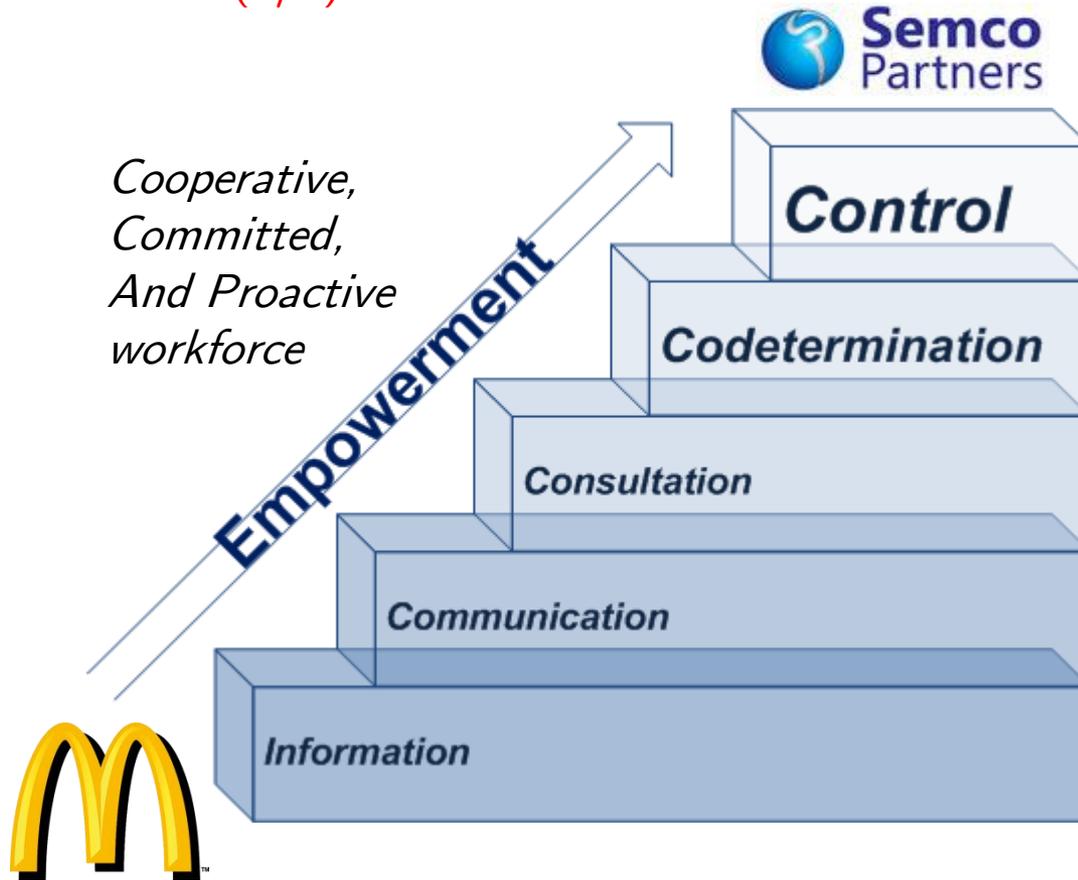
Marchington, M., Goodman, J., Wilkinson, A., Acker, P.,
New Developments in Employee Relations, Research Series, No. 2, Sheffield, UK: Employment Department, 1992.

Semler, R.,
Why My Former Employees Still Work For Me, Harvard Business Review, Vol. 72, No. 1, pp. 64-71, 1994.

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Empowerment (2/2)

▶ FreeBSD developers **control** when, on what and with whom they want to work

truly **self-managing work teams** with almost no limits to their autonomy

high-involvement work system which can be very effective

GOOD IDEA!

WE ARE
EMPOWERED
AT FREEBSD

AND IT WORKS!
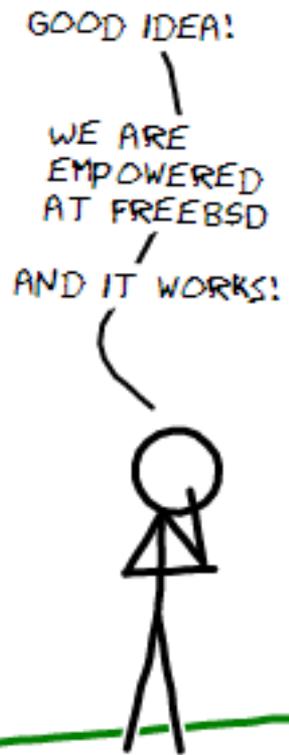
```
irc                                                          ▫ □ ✕
icanhasarm | moin tacoz
      tacoz | hey icanhasarm, wanna help me procrastinate?
icanhasarm | I don't know I'm kinda tired
```

Bowen, D., E., Lawler, E., E.,
The Empowerment of Service Workers: What, Why, How and When, Sloan Management Review, Vol. 33, No. 3, 1992.

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Motivation and pyramid of needs

GOOD IDEA!

DEVS ARE
MOTIVATED
AT FREEBSD!
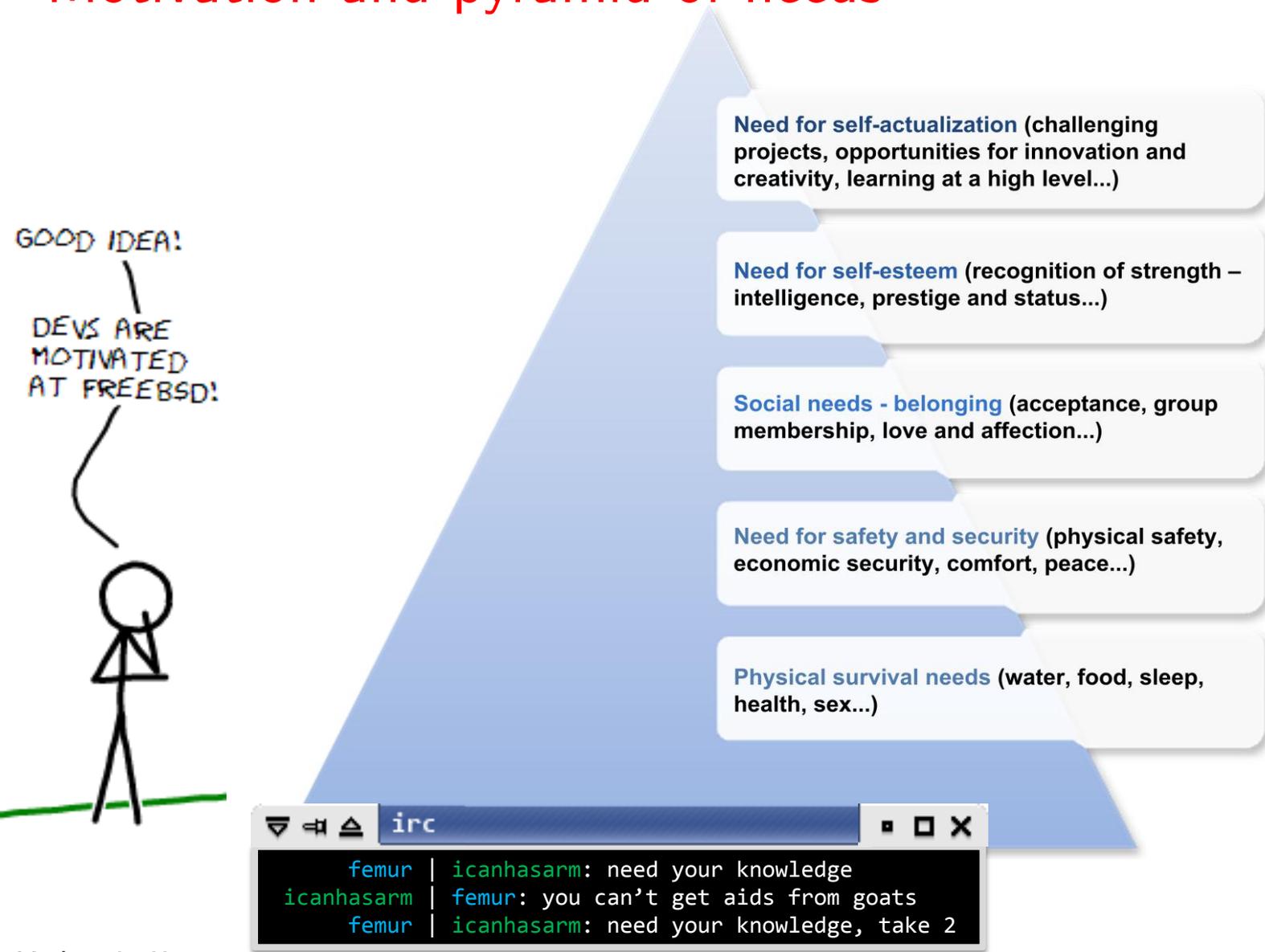
YOU MUST
MOTIVATE
YOUR
WORKFORCE!

Need for self-actualization (challenging projects, opportunities for innovation and creativity, learning at a high level...)

Need for self-esteem (recognition of strength – intelligence, prestige and status...)

Social needs - belonging (acceptance, group membership, love and affection...)

Need for safety and security (physical safety, economic security, comfort, peace...)

Physical survival needs (water, food, sleep, health, sex...)

```
irc                                    . □ ✕
      femur | icanhasarm: need your knowledge
icanhasarm | femur: you can't get aids from goats
      femur | icanhasarm: need your knowledge, take 2
```

BSD day napoli 2013

Maslow, A., H.,
Motivation and Personality, New York, Harper and Row, 1954.

Creative swiping, no NIH syndrom (1/2)

▶ Peters (1987): Put **NIH** *(Not Invented Here)* behind you – and learn to copy (with unique adptation / enhancement) from the best

➔ **PFE** *(Proudly Found Elsewhere)*

▶ Huston and Sakkab (2006): creative swiping improves the rate of innovation

Peters, T.,
Thriving on Chaos, London, Macmillan, 1987.

Huston, L., Sakkab, N.,
Connect and Develop, Harvard Business Review, Vol. 84, No. 3, pp. 58-66, 2006.

Trailer
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Ending
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Creative swiping, no NIH syndrom (2/2)

- ▶ pf
- ▶ ZFS
- ▶ DTrace
- ▶ MAC
- ▶ …

TRUE...
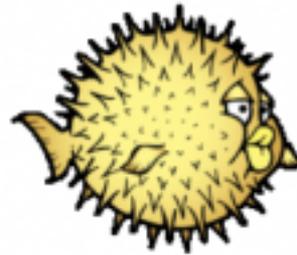
WE DON'T HAVE
THE NIH SYNDROM
AT FREEBSD


```
irc                                                                    · □ ✕
icanhasarm │ I wonder if they will advertise win 8
icanhasarm │ LOOK WE PUT A DUMBED DOWN TABLET INTERFACE ON A PC OS
             HOW BRILLIANT
     tacoz │ isn't it what's freebsd trying to do?
icanhasarm │ it is
icanhasarm │ we run great on PDP11-based tablets
```

Trailer
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Playfulness

▶ Schrage (2000): "Innovation is less the product of how innovators think than a by-product of how they behave. [...] You can't be a serious innovator unless you are willing and able to play."

DON'T FORGET TO HAVE FUN!

SURE! ;)

```
▽ ⊲ ⊴   irc                                               ▪ □ ✕

canadabald | good afternoon all
    femur  | hey ho canadabald
    femur  | canadabald: should I fix that typo?
icanhasarm | canadabald: would you mind answering femur,
           | instead of pretending your a klingon warrior ?
    femur  | tnx icanhasarm appreciate it
    femur  | but but i can't be in klingon
    femur  | for i hate star wars
icanhasarm | I thought klingons were twilight bad guys ?
    femur  | no that's king kong
_icanhasarm_ totally lost with all those teen movies
    femur  | lost is not a teen movie
    femur  | btw I've committed the typo fix no matter what he says
icanhasarm | canadabald: go on then, pretend you're a klingon warrior,
           | even if klingons ain't nothing but bit****, we do not need you anymore
```

Schrage, M.,
Serious Play: How the World's Best Companies Simulate to Innovate, Boston, Harvard Business School Press, 2000.

Sustaining innovation:
which organizational structure to set up?

"Structure follows strategy as the left foot follows the right."

Mintzberg, H, *The Design School: Reconsidering the Basic Premises of Strategic Management*,
Strategic Management Journal, Vol. 11, pp. 171-195, 1990.

Trailer
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Self-organization

LET THEM
ORGANIZE
IT!

▶ Workers organize their day-to-day work in a professional manner

▶ Semler: *"Semco's standard policy is no policy"*
  do not instill a few values to be respected by all employees, but
  promote **autonomy** and **diversity**
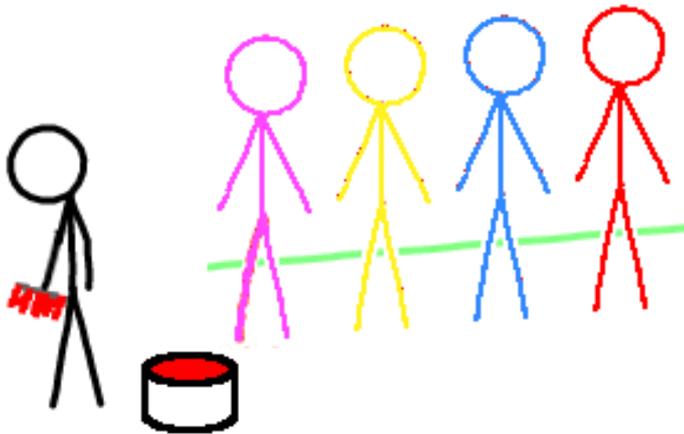
```
irc                                              ▪ □ ✕
canadabald | man, waiting for chromium to build is like
           | waiting for a frenchman to win a war
icanhasarm | not fair, you know it will fail in the end
canadabald | touche!
canadabald | if only the french had a way of conveying the
           | sentiment of touche...
```

Semler, R.,
*Why My Former Employees Still Work For Me*, Harvard Business Review, Vol. 72, No. 1, pp. 64-71, 1994.

Natural system (1/2)

▶ Scott: *"a collectivity whose participants share a common interest in the survival of the system and who engage in collective activities, informally structured, to secure this end"*

   ▶ informal structure

   ▶ variety of interests and plurality of goals

   ▶ evolves and adapts depending on changes in both internal and external environments but does not rely on strict plans and strategies

Scott, W.,
Organizations: Rational, Natural and Open Systems, Englewood Cliffs, Prentice Hall, 1981.

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Structure
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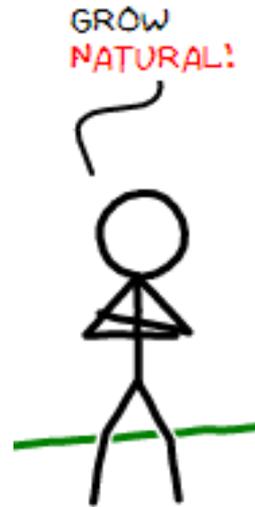
Natural system (2/2)

▶ Segmentation of work and interests (3 types of commit bits):

src

ports

docs

TRUE...

FREEBSD
IS
A NATURAL
SYSTEM
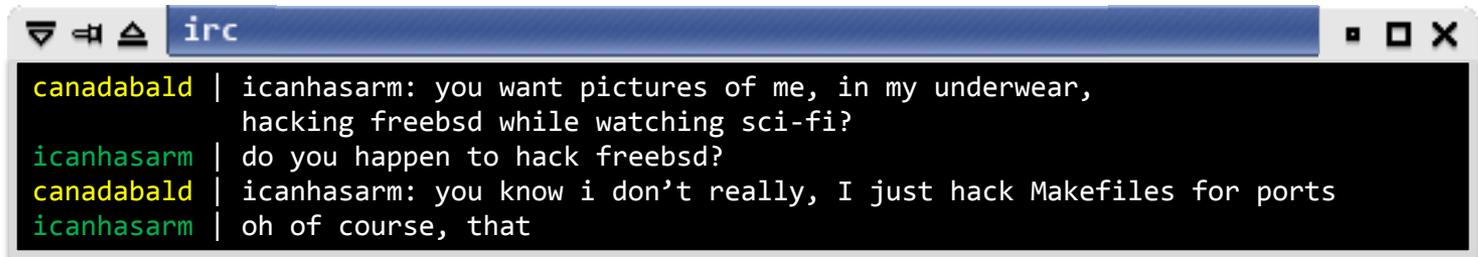
```
irc                                                                        ▪ □ ✕

canadabald | icanhasarm: you want pictures of me, in my underwear,
             hacking freebsd while watching sci-fi?
icanhasarm | do you happen to hack freebsd?
canadabald | icanhasarm: you know i don't really, I just hack Makefiles for ports
icanhasarm | oh of course, that
```

BSD
day
NAPOLI 2013

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Ending
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Boundary spanning (1/2)

▶ Aldrich et al. (1977): boundary spanning -> information brought to the organization from outside, by networking accross traditional organizational borders

▶ Newell et al. (1990): the more boundary spanners an organization has, the higher its degree of innovativeness
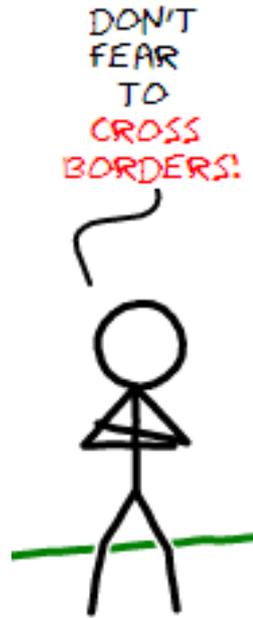
Aldrich, H., Herker, D.,
Boundary Spanning Roles and Organization Structure, The Academy of Management Review, Vol. 2, No. 2, pp. 217-230, 1977.

Newell, S., Clark, P., A.,
The Importance of Extraorganisational Networks in the Diffusion and Appropriation of New Technologies: The Role of Professional Associations in the United States and Britain, Knowledge: Creation, Diffusion, Utilisation, Vol. 12, No. 2, pp. 199-211, 1990.

Boundary spanning (2/2)

▶ comitters are students or have official jobs

- ▶ opportunity to discuss with other engineers
- ▶ ability to keep pace of latest developments in various areas
- ▶ facilitates inward flows of information

TRUE…

WE ARE ALL
BOUNDARY
SPANNERS
AT FREEBSD
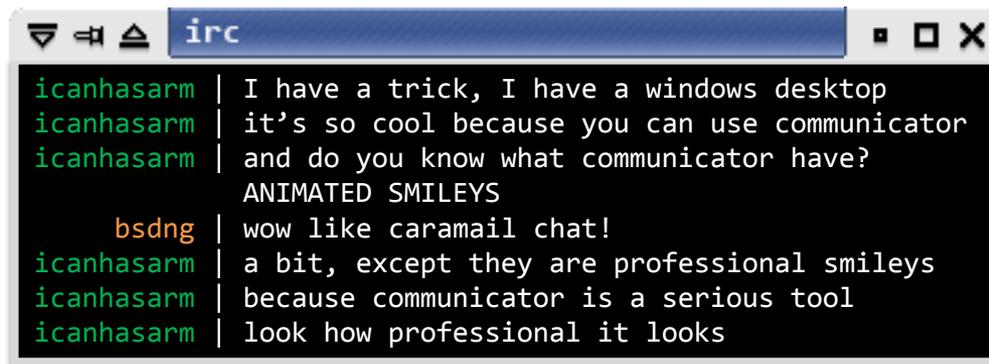
```
▽ ⇥ ⏏   irc                                    ▪ ☐ ✕

icanhasarm | I have a trick, I have a windows desktop
icanhasarm | it's so cool because you can use communicator
icanhasarm | and do you know what communicator have?
             ANIMATED SMILEYS
     bsdng | wow like caramail chat!
icanhasarm | a bit, except they are professional smileys
icanhasarm | because communicator is a serious tool
icanhasarm | look how professional it looks
```

Trailer
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Ending
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Virtual teams (1/2)

▶ members are based at different locations and connected electronically to each other

▶ teams are able to work continously on projects over 24 hours

▶ Young (1998): *"powerful way of working, new production units of knowledge and innovation"* BUT *"the notion of control goes out of the window, along with management in its strict sense"*

▶ Storey et al. (2005): few examples of successful implementation of such teams

Young, R.,
*Virtual Teams: the Wide-Awake Club,* People Management, Vol. 4, No. 3, pp. 46-49, 1998.

Storey, J., Salaman, G.,
Managers of Innovation: Insights into Making Innovation Happen, Oxford, Blackwell, 2005.

Virtual teams (2/2)

▶ FreeBSD: living proof that virtual teams can bring great success to an organization

▶ Live 24/7/365
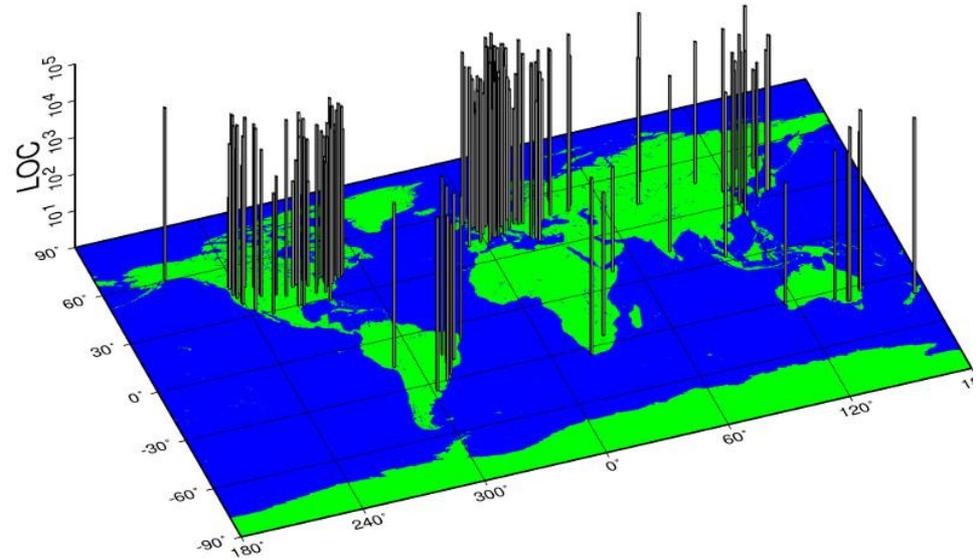
TRUE...

FREEBSD IS VIRTUAL

AND IT WORKS!
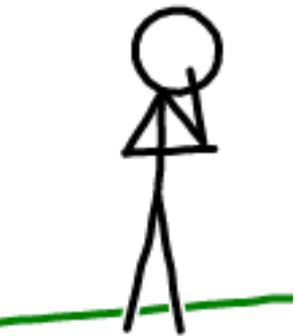

```
⊽ ⇥ ⏏  irc                                        • ☐ ✕
icanhasarm │ I wrote almost 50 LoC today,
                 that's certainly enough
     tacoz │ I wish I had that much productivity
```
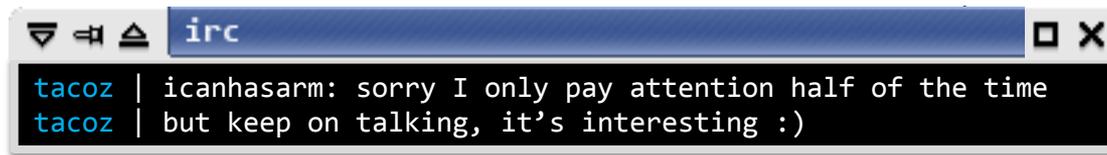
Giaglis, G., M., Spinellis, D.,
Division of Effort, Productivity, Quality, and Relationships in FLOSS Virtual Teams: Evidence from the FreeBSD Project, Journal of Universal Computer Science, Vol. 18, No. 19, pp. 2625-2645, 2012.

Summary

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Ending
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FreeBSD traits
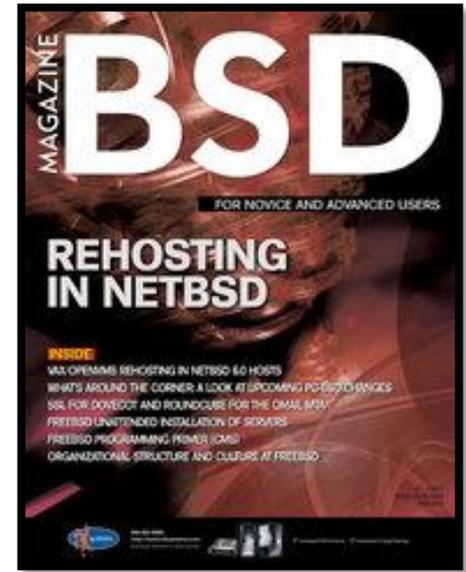
▶ A post-industrial organization

▶ A natural system

▶ A missionary structure

  ▶ flat hierarchy

  ▶ full decentralization

  ▶ flexible and informal structure

  ▶ norms as a mean of coordination and control

  ▶ variety of interests and plurality of pursued goals

  ▶ permeable boundaries between insiders and outsiders

  ▶ use of advanced communication and computing technologies

  ▶ little planning and control, no strict strategy but focus on adaptation instead

2013-02

Trailer
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Ending
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So what?

MAC

bhyve

BSM Audit

Capsicum

Soft Updates

USB stack

10 Gbps network optimization

DTrace

ports

pf

ZFS

TCP/IP stack

GBDE

jails

BSDInstall

Linux Binary Compat

SMPng

GEOM

pkgng

SCTP

Binary Updates

...

BSD day napoli 2013
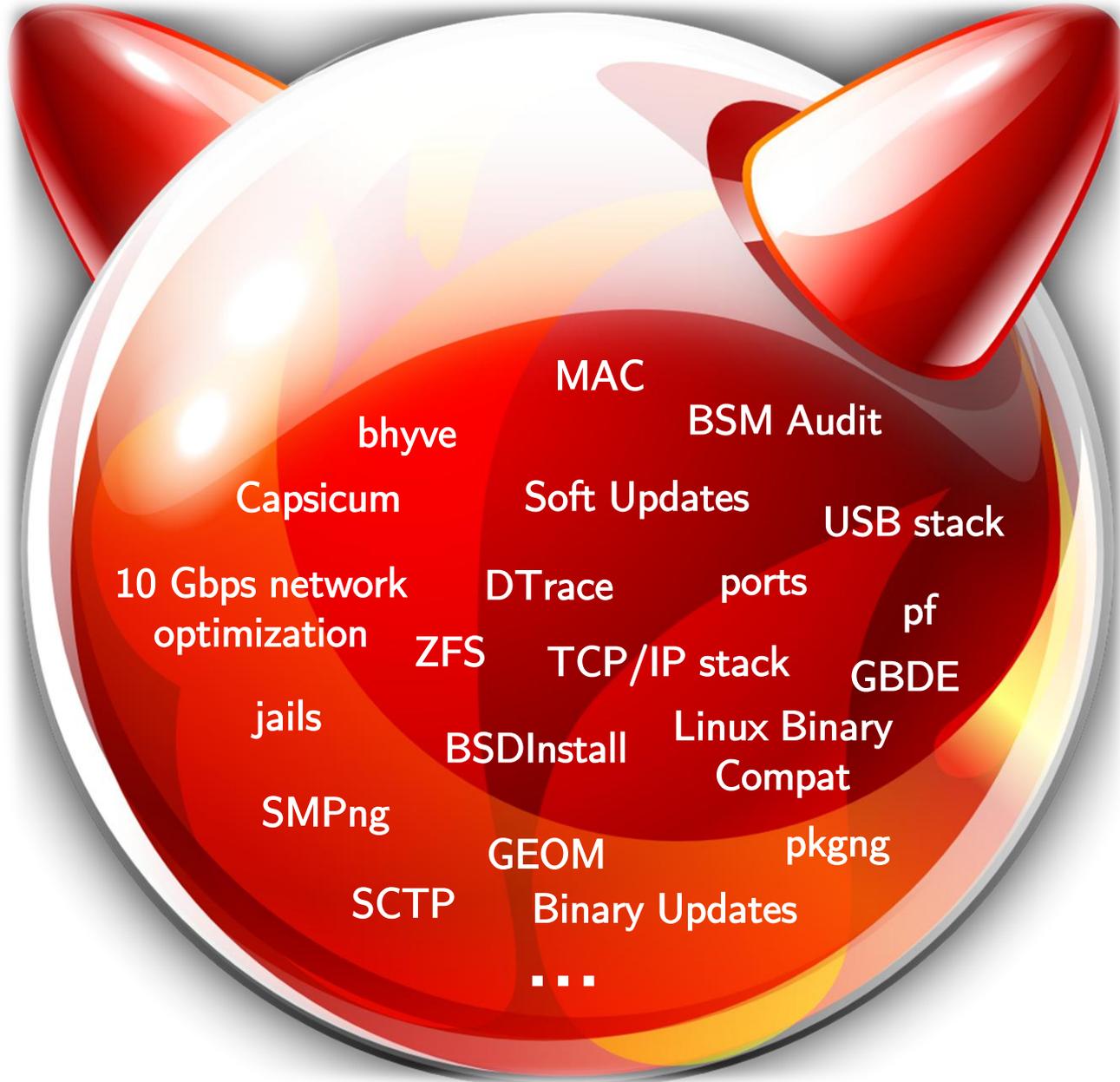
Last thought

> "[treat] employees as volunteers just as you treat customers as volunteers, because that's what they are. They volunteer the best part – theirs hearts and minds."
>
> **Covey, S., R.,** *The 7 Habits of Highly Effective People,* Free Press, 2004.

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Questions?

Thanks to:

▶ **FreeBSD Foundation** and **Logos** for financial support

▶ **pgj@, gianni@** for the organization

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▶ friends at **#telestore** for feedback and inspiration