What A Long Strange Trip IT's Been: ....and probably will be!

By
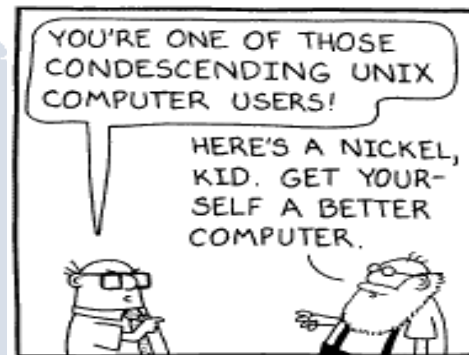Jon "maddog" Hall
Board Chair: Linux Professional Institute
President: Linux® International®

Who Is maddog?

- *Half* Electrical Engineer, *Half* Business, *Half* Computer Science
- "Open Source" since *1969*
  - Mainframes 5 years
  - Unix since 1980
  - Linux since 1994
  - Latin America since 1994
- Companies (mostly large): Aetna Life and Casualty, Bell Labs, Digital Equipment Corporation, SGI, IBM, Linaro, Caninos Loucos
- Programmer, Systems Administrator, *Systems Engineer*, Product Manager, Technical Marketing Manager, University Educator, Author, *Businessperson*, Consultant
- Traveled to over 100 countries, most of them more than one time...some have revolving doors for me.
- Taught OS design and compiler design and database design among other courses
- *Extremely* large systems to *extremely* small ones
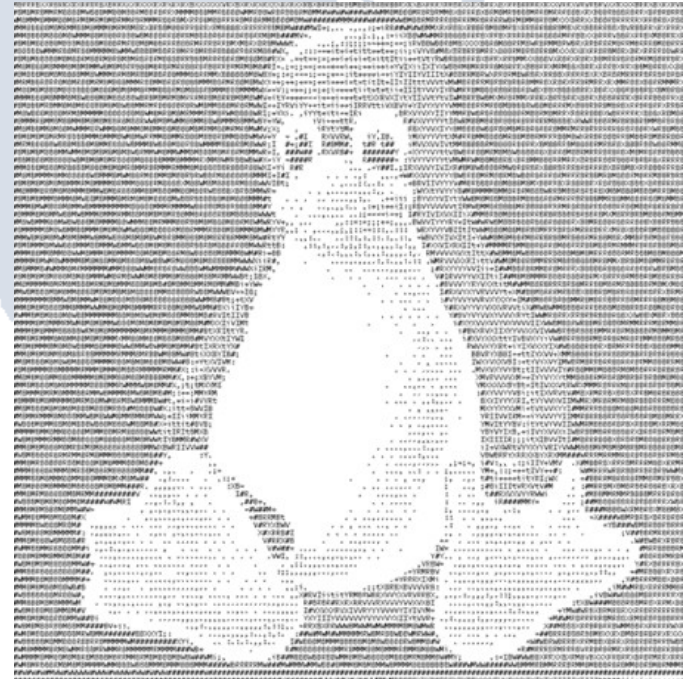- Vendor *and* a customer
- *Pragmatic*

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WARNING!

I will be going very fast…..

In The Beginning

- No such thing as "Computer Science"
  - No Networking
  - No "Security"
  - No "Graphics" (OK, ASCII ART)
  - No "Systems Administrators"

- Only Computer Black Magic…..

No, "Tux" did not exist back then…..

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Large Companies Sold Systems

- Hardware, Software and Support

- Channels developed

- OEMs/Distributors/ Retailers

IBM Mainframe

1969

Ken and Dennis

- Woodstock (no, I did not go)

- Stonewall Inn (no, I did not go)

- Humans on the moon (no, I did not go)

- Arpanet

- Unix

- I shaved for the last time

- I wrote my first program

I Was Supposed To Be An Electrical Engineer!

- Three years of analog electronics

- Drexel (nee Institute of Technology) University

- Co-op at Western Electric Company in Baltimore in 1969
    - 100th anniversary of its founding

- Took correspondence course

IBM 1130 and my first computer *mentors*

Almost Electrocuted

800 volts, 600 amps

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Very Few "Professional Programmers"

- You wrote programs to solve your own problems
  - Mathematicians
  - Physicists
  - Engineers

My second computer: PDP-8 and ASR-33 Teletype

"Jon, you will never earn a living as a professional programmer." Dr. James T. McGinnis:Drexel University - 1972

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User Groups

- Typically funded by companies:
  - SHARE – IBM
  - DECUS – DEC
  - BrainShare – Novell

- Libraries of software for cost of copying

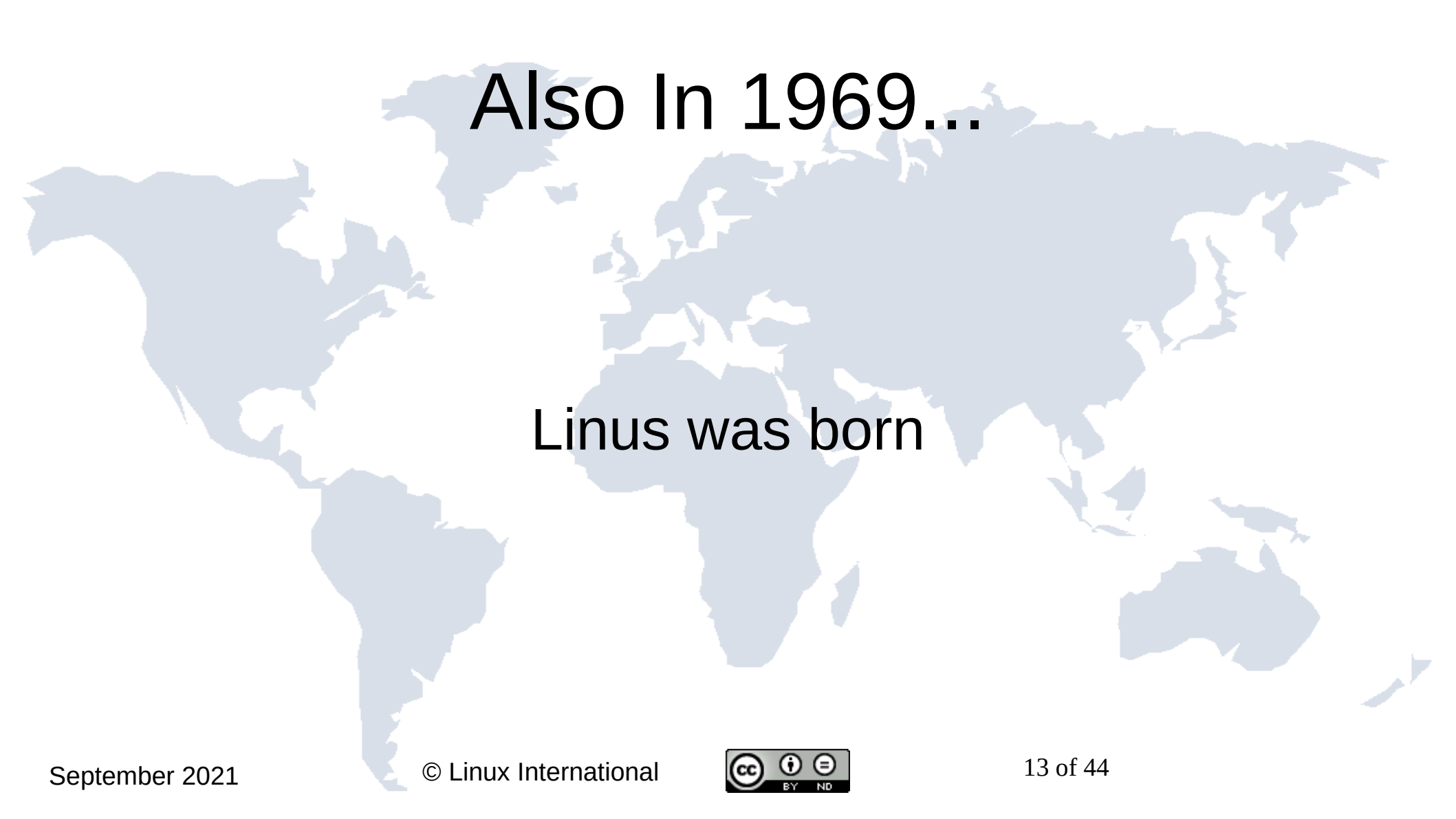 *A text editor….or five pitchers of beer?*

Why Give Away Your Software?

- You wrote it to solve your own problem

- Selling software is hard
  - Good documentation
  - Support
  - Advertising

Not in the business of selling software!!

Benefits of Giving Away Your Software

- Double, triple (or more) your "programming staff"

- Your code and coding style improves

- Invitations to symposium

- Beer, dinner or a job!

Also In 1969...

Linus was born

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Lessons Learned Along The Way

Use the Term "Impossible" Sparingly

- You can say:
  - "Difficult"
  - "May take a while"
  - "I have other priorities"

- "Impossible" may be embarrassing when a bearded person completes it in half a day

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Be Ready To Make A Person Cry

- Stopped by a peer's office

- Told them "You did really good work" and why I meant that

- Engineer (male, in mid-forties) broke into tears

- I was **the first person** who ever told them that...

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Watch What You Say
(and to who)

- Ken Olsen (of DEC) loved Unix 600 million dollars worth in 1986

- KO said "Unix vendors SOLD Unix like they were snake oil salesmen"

- KO was not interested in creating standards, loved implementing them

- KO had two children, and loved them both

Don't Be Afraid To Throw It Away

- Difficult to justify in some commercial environments
  - Always a cost of implementation
  - Always more things to implement with limited resources and time-frames (resources and time-frames are always limited)

- Linux has "thrown away" code several times
  - I/O subsystem prime example

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How You Look At Things Makes A Difference

- At DEC taking their code and making it "Open Source" was very hard for an engineer

  – Had to have a review, even if DEC was not going to sell the code

  – Some engineers felt that gauntlet, and said "never again"

- At another computer company they said "Think of it as Open Source unless there is a business case for keeping it closed"

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Things Are Not Always "Planned"

- Original ISO9660 did not support Unix very well

- Rock Ridge Extensions allowed POSIX file system semantics

  – Proposed by Andrew Young of Young Minds

- Editor of ISO 9660 (a DEC employee) would not allow extensions into formal standard

- Andrew called me at DEC….

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- I blackmailed the Editor…...

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Find the Proper Job for the Tool

- Young programmer was going to attend Naval Academy

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- He conceived of and wrote SourceForge

Do Favors For Other People

- SIG Chairman Kurt Reisler needed money to bring speaker to DECUS in 1994

- Nobody in DEC management had heard of this person

- I arranged for this person to come to DEC because I liked and trusted Kurt

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That Person Was Linus Torvalds

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Favors Work In Both Directions

- Needed Alpha Workstation for Linus to start port

- Had no time to justify the need through corporate mechanism

- Called in a favor from a friend in Workstation Marketing

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- The next day a 30,000 USD (in 1994!) workstation was headed to Helsinki, Finland

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Be True In What You Want

- Caldera was not concerned with "Openness"
  - They wanted a "royalty-free Unix"
    - Kept buying binary packages (Visix, etc)
  - Eventually bought (most of) "Good SCO"

Build an "Elevator Pitch" to life

- What do you really want out of life?

- Be able to explain it in thirty seconds
  - It will help you focus on what is really important

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Good SCO

- Santa Cruz Operations (SCO)
  - Founded by Larry and Doug Michels
    - Doug graduated from UC Santa Cruz
  - Sold more Unix licenses than any other vendor

- Eventually saw writing on wall, formed Tarantella and sold "the rest" to Caldera

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Uniforum

- Uniforum presented "Lifetime Achievement Award" to Linus Torvalds in 1997 (27 YO)

    – One Uniforum Board member was insistent that Linus get it

    – That Board member insisted in presenting award and taking Linus out to breakfast

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  – He was Doug Michels, of SCO

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Side Note About Slides

- For years Linus showed only one slide in his talks

  – Projected growth of Linux was a straight line

- Then Linus noted that the straight line was plotted on logarithmic paper

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O'Reilly

- Published Unix books for many years

- When Windows NT came out, started publishing "NT" books

- When Linux started to gain popularity, Tim "dusted off" Unix books

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Another Thought:
People Do Not Buy….

- Hardware

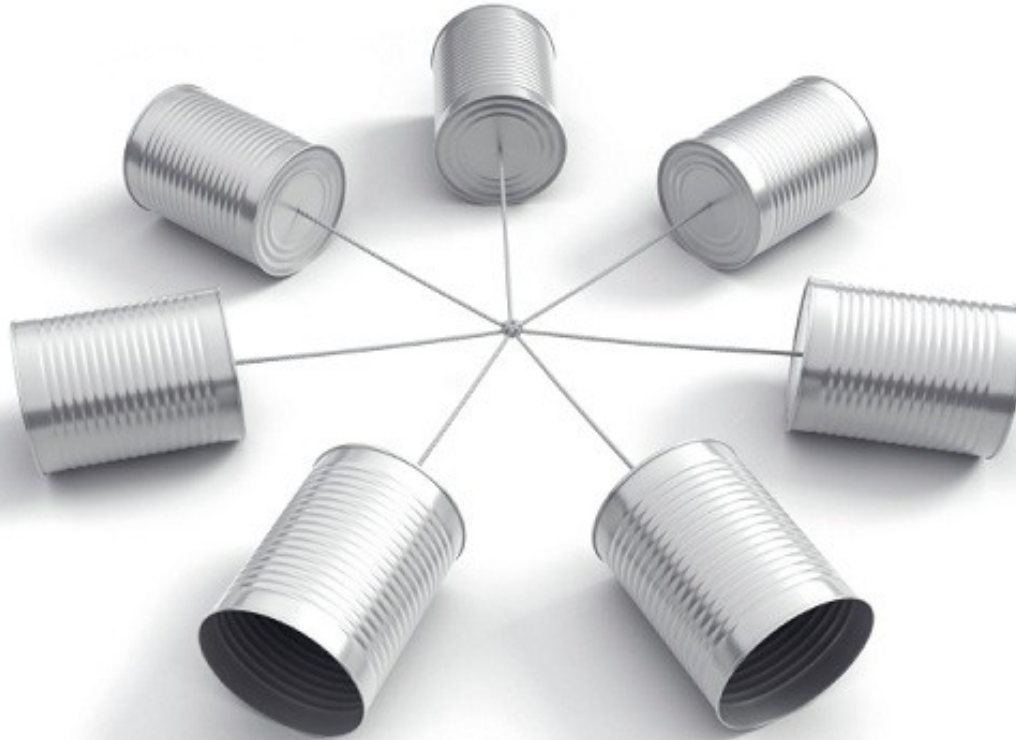- Software

What Do They Buy?

Solutions to Problems

Play A Game?

A Multi-Player Networked Game?

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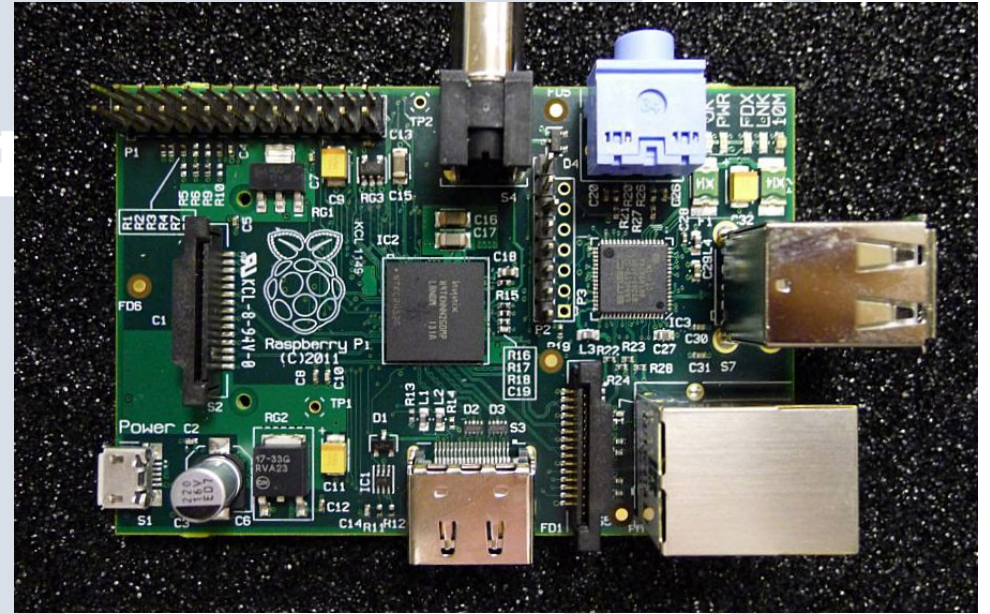
The Game Has Changed

- Computers Do Not Cost Millions Of Dollars
  - SBCs
    - Raspberry Pi
  - Web Based Development
- Software can be Collaborative
- Marketing is typically Social
- Financing is more "crowded"
  - Crowd Sourcing a product is popular
  - Having a prototype is key

Raspberry Pi One: My 8,356[th] computer

Single Owner/Cooperatives:
Capitalism is not the only way..

- Single Owner Business

- Employee (or customer) owned Cooperatives

The employees (or customers) are the owners

What About The Future

- I am not a good predictor of the future

- I do not know that the next operating system will be…..

- II (Inorganic Intelligence) and Quantum computing are a bit scary….but….

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Paths Forward

- Closed Source is the enemy

- Tell other people "you did good" when they deserve it…

- Keep scratching the itch….

- Guide the meeting from the back of the room..

- Building the team is at least as important as building the code
    - We are all getting older….

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Paths Forward

- Become a mentor to a newbie
  - Master Plumbers have apprentices

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Questions?

WORLD DOMINATION
THROUGH
WORLD COOPERATION

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