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

By
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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**
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.....
Large Companies Sold Systems

- Hardware, Software and Support
- Channels developed
- OEMs/Distributors/ Retailers
1969

- 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

Ken and Dennis
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
Very Few “Professional Programmers”

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

“Jon, you will never earn a living as a professional programmer.” Dr. James T. McGinnis: Drexel University - 1972
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
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
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...
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
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”
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……
Find the Proper Job for the Tool

- Young programmer was going to attend Naval Academy
- I told him that he would probably contribute more to the world by being a good FOSS programmer
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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
That Person Was Linus Torvalds
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
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
● The next day a 30,000 USD (in 1994!) workstation was headed to Helsinki, Finland
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
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
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
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
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
Another Thought: People Do Not Buy….

- Hardware
- Software
What Do They Buy?

Solutions to Problems
Play A Game?
A Multi-Player Networked Game?
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 8,356th 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.....
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….
Paths Forward

• Become a mentor to a newbie
  – Master Plumbers have apprentices
Questions?