No One Buys A Computer

By

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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
- Taught OS design and compiler design and database design among other courses
- Extremely large systems to extremely small ones
- Vendor and a customer
- Pragmatic
Before We Begin....

Happy Birthday Alan Turing!
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 “Professional Programmers”

- You wrote programs to solve your own problems
  - Mathematicians
  - Physicists
  - Engineers
- Most systems had no operating systems
People Never Bought Computers

- Too expensive
  - Many companies leased computers
- No computers in homes or high schools
  - Computers only seen on TV or in university
- Software “owned” by customer
  - No copyright or patent protection for software
  - Software protected through contract law
Minicomputers/PCs and RPis

- Hardware costs dropped
  - Margins reduced but volume went up
  - PC specialty stores grew then dropped
    - Just like Blockbusters
    - Hardware became an expense, not an asset
- Software became closed and non-owned
  - Other people decided what you needed
Large Companies Sold Systems

- Hardware, Software and Support
- Channels developed
- OEMs/Distributors/Retailers
Large Companies/Large Contracts

• “Stacks”
  – Oracle
  – SAP
  – PeopleSoft

• You have all been there
In 2000 IBM

- Invested 1 Billion dollars
- Made 2 Billion dollars
In 2005 IBM...

- Sold Lenovo Desktop and Laptop business
- Bought Price-Waterhouse Cooper
- Sold Lenovo Intel server business
IBM and Linux - 2014

- Another 1 Billion dollars invested
- Later bought Red Hat
So What Do They Buy?
So 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
  - Web Based Development
- Software can be Collaborative
- Marketing is Social
- Financing is more Crowded
  - Having Prototype is Key
Single Owner/Cooperatives

- Single Owner Business
- Employee Owned Cooperatives

*The employees are the owners*
Problem – POS/ERP System

- Point Of Sale
- Enterprise Resource Planning
  - Customer Relationship Management
  - Inventory
  - Accounting
  - Human Resources
  - Manufacturing Control
  - Etc.
POS/ERP System – Closed Source

- Closed Source
  - NEC
    - Not Extendable
    - Expensive
  - Oracle
    - Not Extendable
    - Expensive
    - Expensive
    - Expensive (5,000 for software license...no hardware)
ODOO

- Open Source Backplane
- Open Source Modules
- Gratis Modules
- Closed Source Modules
- Community Association
- Support Companies – 1568 worldwide
  - 81 in USA
  - 13 in Brazil
Hardware And Software

- Software (Source code available)
  - Windows
  - GNU/Linux
    - Ubuntu/Debian (.deb)
    - Red Hat (.rpm)

- Hardware
  - INTEL/AMD
  - ARM 64 Bit
Building a POS System ~ 700 USD

- Single Board Computer
- USB Scanner
- USB Printer
  - Cash Drawer runs off Printer
- USB Scale
- VESA LCD Panel (touchscreen)
- USB Keyboard
- USB Mouse
Building An ODOO ERP System

- Labrador/RPi with VESA mount case – 160 USD
- 2 TB 2.5” SATA HDD/SSD – 70 USD
- Keyboard/Mouse – 14.99 USD
- USB/SATA cable – 8 USD
- Power Supply – 10 USD
- VESA Monitor ~ 186.00 USD
Total POS/ERP System

- One POS system for each sales station
- One ERP system for each store
ODOO Live! - Ananias Filho of Kmee
Books On ODOO

• Working with Odoo: Learn how to use Odoo, a resourceful, open source business application platform designed to transform and modernize your business – by Greg Moss, Packt Publishing

• Learn Odoo: A beginner's guide to designing, configuring, and customizing business applications with Odoo by Greg Moss, Packt Publishing

• Odoo.com
FreedomBox

• A Free Software server for your home* to keep the most private of your data (no binary blobs)
• Easy to set up and maintain
• Made from an SBC and 2.5in HHD/SSD
• Build on top of (and included in) Debian 10
• Founded by Eben Moglen

*Home could be a small community or business, or just your own home
FreedomBox Functionality

- Bepasty (File & Snippet Sharing)
- Calibre (e-Library)
- Coturn (VoIP Helper)
- Deluge (Distributed File Sharing via BitTorrent)
- Ejabberd (Chat Server)
- GitWeb (Simple Git Hosting)
- I2P (Anonymity Network)
- Ikiwiki (Wiki and Blog)
- Infinoted (Collaborative text edition with Gobby)
- JSXC (Web Chat Client)
- Matrix Synapse (Chat Server)
- MediaWiki (Wiki)
- Minetest (Block Sandbox)
- MiniDLNA (Simple Media Server)
- MLDonkey (Peer-to-peer File Sharing)
- Mumble (Voice Chat) Server
- OpenVPN (Virtual Private Network)
- Privoxy (Web Proxy)
- Quassel (Text Chat Client via IRC)
- Radicale (Calendar and Addressbook)
- Roundcube (Email Client)
- Samba (Network File Storage)
- Searx (Web Search)
- Shadowsocks (SOCKS5 proxy)
- Sharing (File Publishing)
- Syncthing (File Synchronization)
- Tiny Tiny RSS (News Feed Reader)
- Tor (Anonymity Network)
- Transmission (Distributed File Sharing via BitTorrent)
- User Websites
- WireGuard (Virtual Private Network)
- Zoph (Photo manager)
Potential FreedomBox Uses
Federated Social Media - fediverse.party

- Diaspora
- Misskey
- Pixelfed
- Pleroma
- Hubzilla
- Mastodon
- PeerTube
- GNU Social
- Friendica
Kodi Multimedia Center – Kodi.tv

- Videos
- TV shows
- Music
- Photos

- PVR
- Games
- Plugin Addons
But Wait, There is more!

- Hook up to your power amplifier – Stereo to 7.1
- NFS mount your phone for videos and music
- Use as “first connection to Internet”
- IoT on same system
- Debian based
Not Often Discussed

- OTA TV in cities through USB dongle
- Simple Burgler alarm through webcam
- Inexpensive LCD projectors for TV

Douglas Conrad and his experiences
Summary

• There are hundreds of thousands of FOSS programs out there
• There are dozens of cheap SBCs to put it on
• You could make dozens of “solutions” not only for you, but for customers
Questions?

WORLD DOMINATION THROUGH WORLD COOPERATION