

CCC2011

# Building and Giving Away: Motivations

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# Brief intermission: Giveaways!

- Going around the room: 200 copies of The Project Gutenberg April 2010 DVD
  - Dual layer
  - Over 29,500 eBooks
  - Mostly zipped HTML and text
- Or, download your own copy via [www.gutenberg.org/cdproject](http://www.gutenberg.org/cdproject)
- This is as many books as an average public library in the US, yet you can have your own copy. Your own library!
  - Please give away copies!



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# Your Presenter: Greg Newby



- Volunteer: Project Gutenberg ([www.gutenberg.org](http://www.gutenberg.org))
  - Day job: Director of an academic supercomputing center. Professor
  - Long-time interests in new electronic media and community empowerment
  - Expertise in information security
  - Hobbies include: dog mushing, running
  - Volunteered with HOPE, HAR, HAL
  - My first CCC
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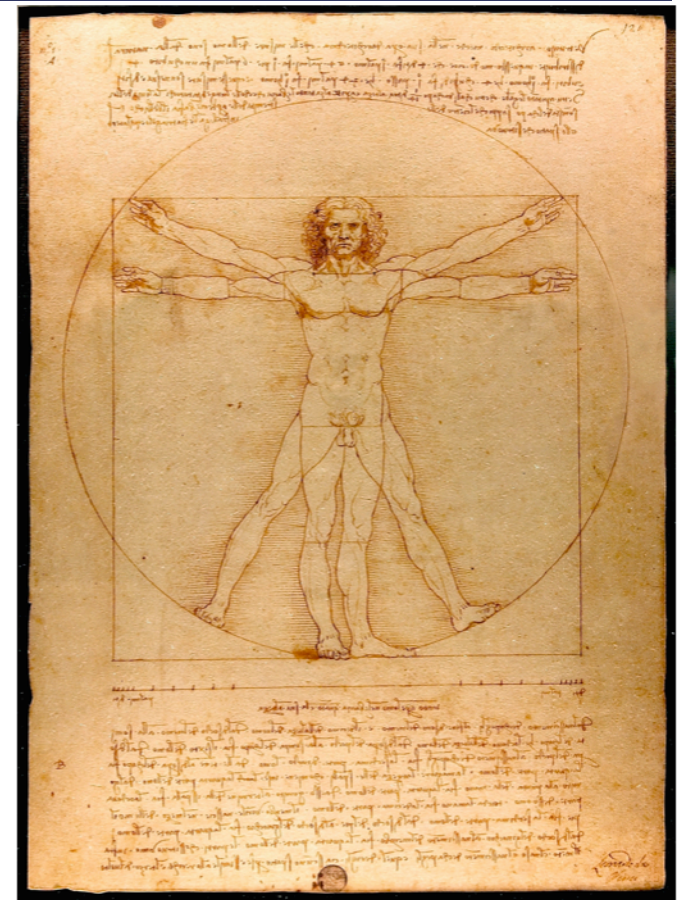
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# Abstract & License

- ▣ Abstract: What motivates people to create and freely distribute their works? This presentation will draw on personal experience, research literature, and existing communities of those who build and give away. Open source software, hardware, community building.
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# Motivation for this presentation

- ▣ Foremost, my own desire to make the world a better place
- ▣ A belief that a majority of people have interests in devoting some effort to the greater good
- ▣ Recognition that technologies have been responsible for tremendous advances in human capabilities
- ▣ Observation that many such technologies emerge from cooperation among communities of volunteers



## In short ...

- There is a tremendous history of technology-based community-driven altruism, amplified especially since the advent of the Internet
- People give away their labor: envisioning, designing, building and maintaining
- Many thousands, perhaps millions, of talented individuals devote a portion of their energy to building technology projects, and making them freely available for the greater good
- And yet: many excellent projects never get community buy-in or adoption. Often, inferior solutions “win.” Sometimes, the more visible solutions are not community-driven, and might propagate values that are anti-use

# Today's Scope

- Technology-oriented **group** projects: software, systems, hardware, online communities, content, embedded systems, physical systems, etc. Not just virtual! Things like energy, transportation, education are included.
- **Building and giving away** in these groups is largely based on people separated in time and space, facilitated by automation and telecommunication
- This talk is not just about software. However, software communities are great examples, and can be analyzed fairly easily

# Overview of the “big 4” motivators

1. To make the world a better place
  2. Money or other lucre
  3. Desire to be part of a social group
  4. “Itching a scratch” to solve a perceived problem
- ▣ Of course, different people have different motivations, and they change over time
  - ▣ Many people have a combination of motivations, or different motivations for different projects they are involved with
  - ▣ Can you think of additional major motivating factors?



# Key concept: Altruism

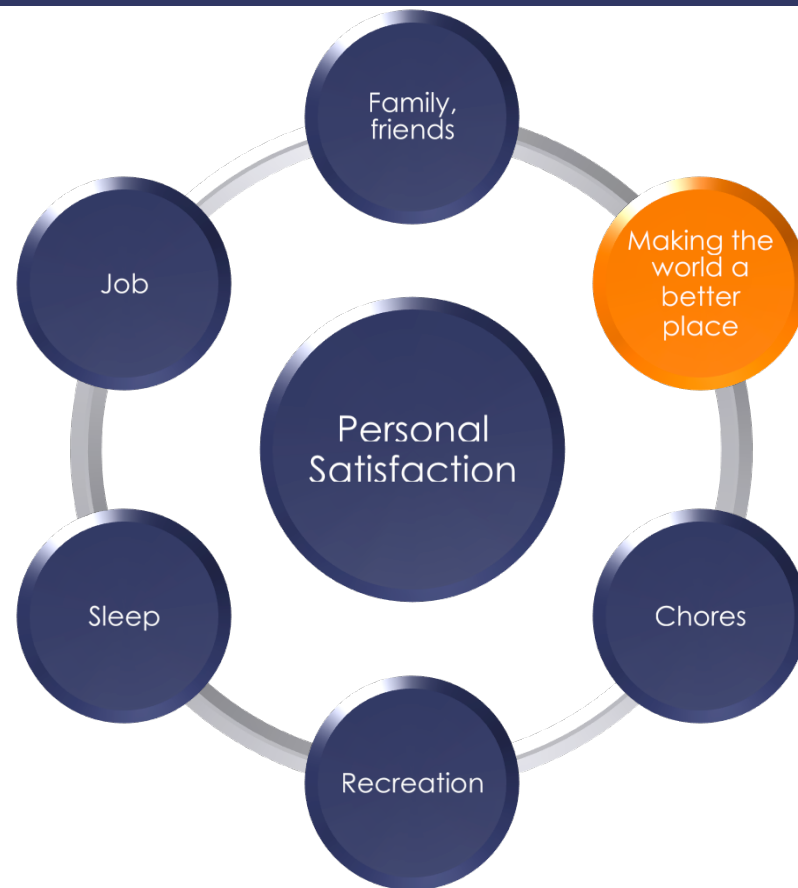
- Giving something of yourself, for the benefit of others
  - Often, non-specific others: to the greater good of society
- This is more than cooperation
  - Volunteerism thrives, around the world
  - It is part of human culture, indeed part of humanity itself: the **ability to see the world through others' eyes**
- Not everyone has time to spend on such activities, nor motivation/energy/capability
- This talk is concerned with a subset of altruistic behaviors: those that are part of technology-based projects geared towards building and giving away



“Alms for the Poor” (Wikipedia)

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# A fulfilling life: Altruism fits!



# Let's work through some examples

- You probably can think of many more examples.
- Let's look at a few briefly (please don't get upset if you don't agree with my characterization of them!)
- Then, we'll see what they have in common
- Note: we'll choose some well-known examples. But part of this talk's purpose is to see how the lesser-known examples, or projects that are not yet created, might succeed. Perhaps YOU will be engaged in the creation!



# Example: Wikipedia

- For more: [http://en.wikipedia.org/wiki/History\\_of\\_Wikipedia](http://en.wikipedia.org/wiki/History_of_Wikipedia)
  - Founded 2001
  - Based on earlier technologies and ideas (all the way to Vannevar Bush, "As we may think," 1945)
  - Recognizable founder, Jimmy Wales. Still active
  - Now there is a large organizational structure
- Major innovator in dealing with contention in online communities
  - A balance between freedom to contribute, and protection from bias
- This is an example of a highly functional, task-focused community. **Central vision** is clear, but individual contributor motivations vary considerably. Major disagreements occur, but the number of new potential contributors is large



# Example: Project Gutenberg

- ▣ Visionary founder, ongoing effort since 1971: Michael Hart
- ▣ Individual willing to commit most of an entire lifetime, with relatively little income
- ▣ How to deal with being surpassed by larger efforts like GoogleBooks and Amazon? A focus on quality
- ▣ Level of commitment is relatively high, especially to make a whole eBook
- ▣ Simple, clear vision. Emphasis on **literacy** and education

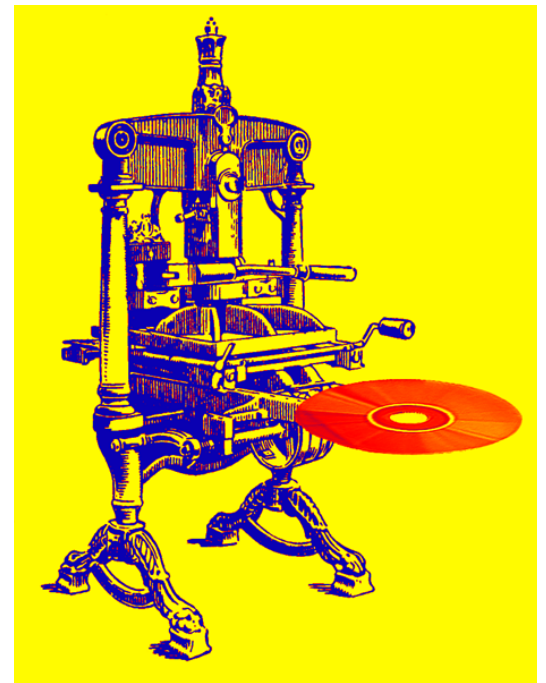


## Sidebar: Inspiring Words

- ▣ “One thing about eBooks that most people haven't thought much is that eBooks are the very first thing that we're all able to have as much as we want other than air.

Think about that for a moment and you realize we are in the right job.”

*Michael S. Hart, July 2011  
(Personal Communication)*



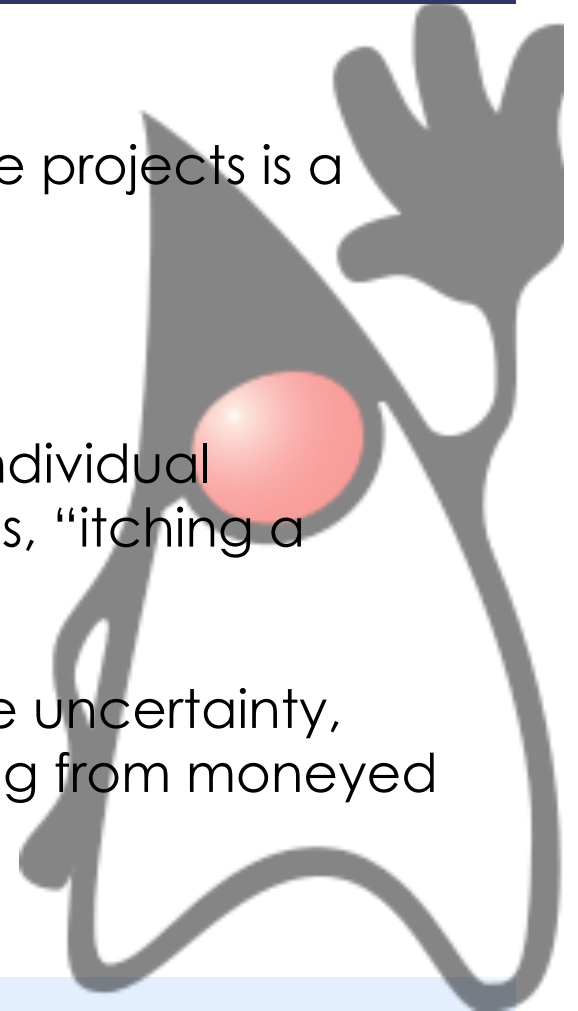
# Exemplar: Linux Kernel

- ▣ Single visionary, building on prior work
- ▣ “Itching a scratch” for better technologies
- ▣ Maintains oversight, including deep technological guidance
- ▣ Yet, there are thousands of developers
- ▣ Many of these are commercial
- ▣ Being agnostic about various commercial uses and spin-offs has enabled many derivative products
  - ▣ Not all of which are consistent with the values of the developers or users!



# Consider: MySQL, Lustre & Java

- The role of Sun, and now Oracle, in these projects is a fascinating case study
- Clear motivation: Lucre
- However, the projects were started by individual visionaries, building on prior technologies, “itching a scratch” to make a better world
- These projects are all experiencing some uncertainty, due in part to challenges in disentangling from moneyed custodianship





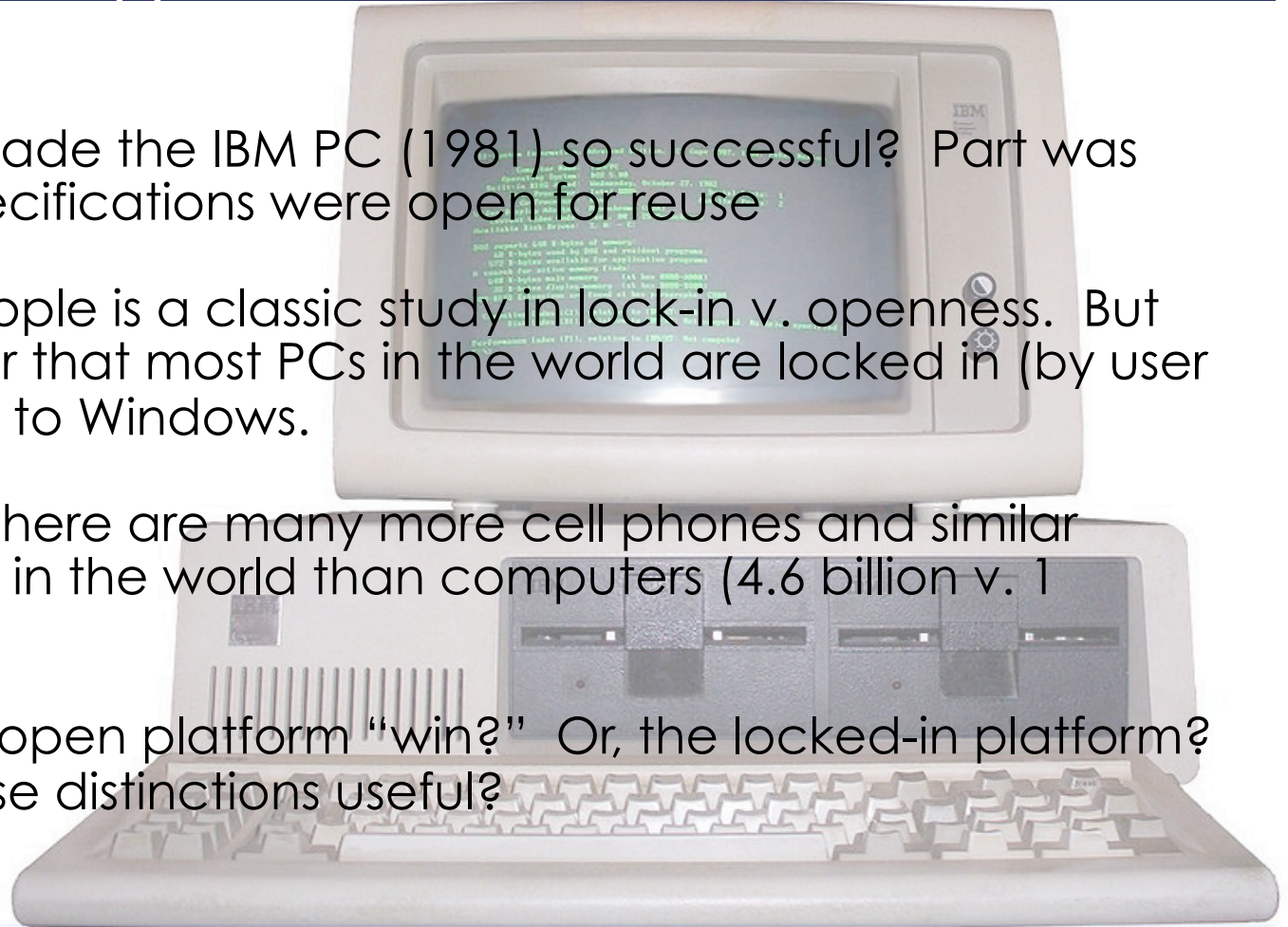
# Example: Wikireader

- ▣ Building and giving away source and specs, based on Wikipedia content
- ▣ Education and literacy goal, focused on areas without infrastructure for networked computers
- ▣ A balancing act:
  - ▣ Cost v. features
  - ▣ Parental controls
  - ▣ Frequency of update, limitations of content display

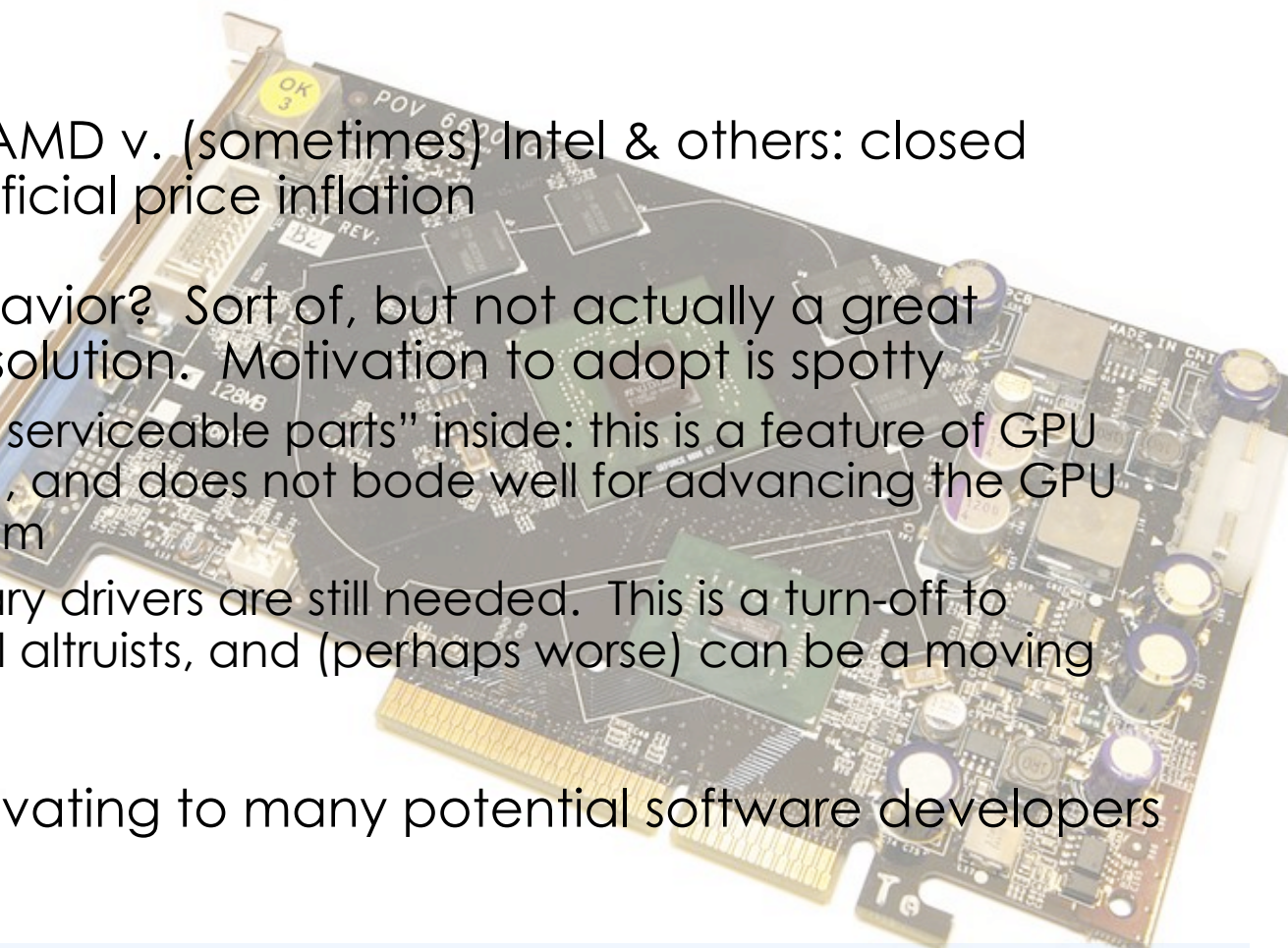


# Ongoing: Android v. Apple (v. BlackBerry)

- What made the IBM PC (1981) so successful? Part was that specifications were open for reuse
- PC v. Apple is a classic study in lock-in v. openness. But consider that most PCs in the world are locked in (by user choice) to Windows.
- Today, there are many more cell phones and similar devices in the world than computers (4.6 billion v. 1 billion)
- Will the open platform “win?” Or, the locked-in platform? Are these distinctions useful?

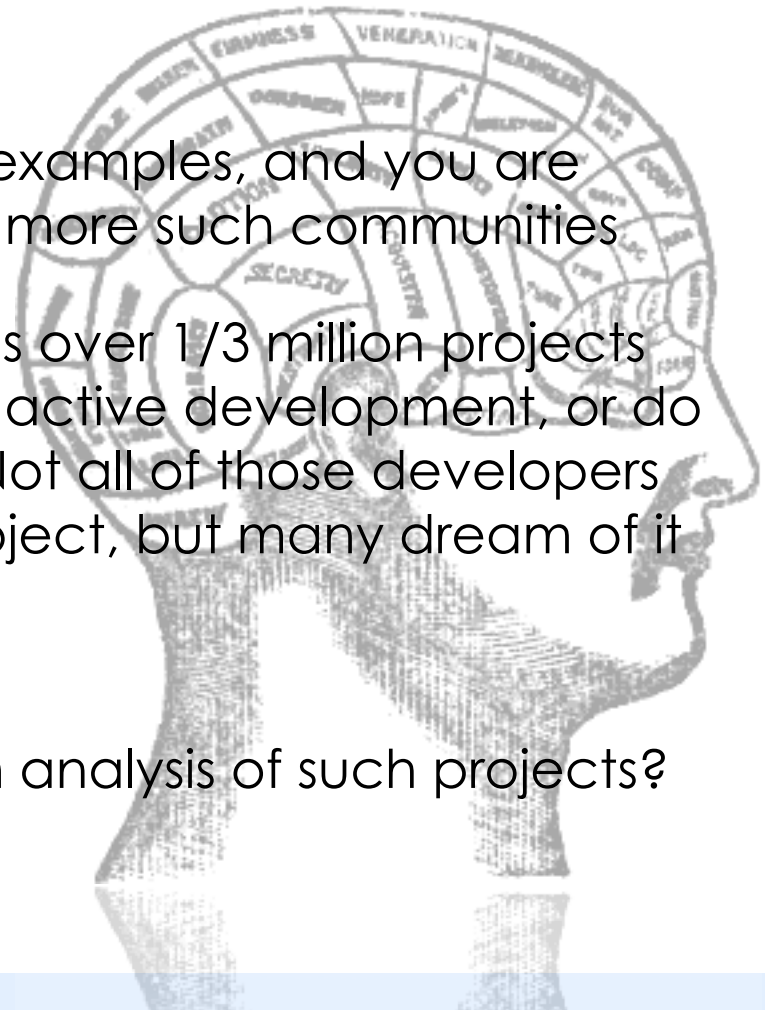


# Consider: GP GPU. Lock-in gone awry

- NVIDIA v. AMD v. (sometimes) Intel & others: closed drivers, artificial price inflation
  - OpenCL: Savior? Sort of, but not actually a great technical solution. Motivation to adopt is spotty
    - “No user serviceable parts” inside: this is a feature of GPU and CPU, and does not bode well for advancing the GPU ecosystem
    - Proprietary drivers are still needed. This is a turn-off to potential altruists, and (perhaps worse) can be a moving target
  - It is demotivating to many potential software developers
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# Let's see what we've learned

- There are many many more examples, and you are probably engaged in one or more such communities
- For example, Sourceforge has over 1/3 million projects (though many are not under active development, or do not have much adoption). Not all of those developers want to become a major project, but many dream of it
- What concepts emerge from analysis of such projects?



# Concept: The Duality of creativity

- Hackers are demonized, yet admired in many cases (i.e., the story of the birth of Apple)
- Youth are encouraged to be creative, but too much creativity is squelched (or Ritalin-ed)
- Individuals with great new ideas, and motivation to make them happen, can become ostracized if their ideas are too far from the norm
  - Great ideas occur in a social and temporal context

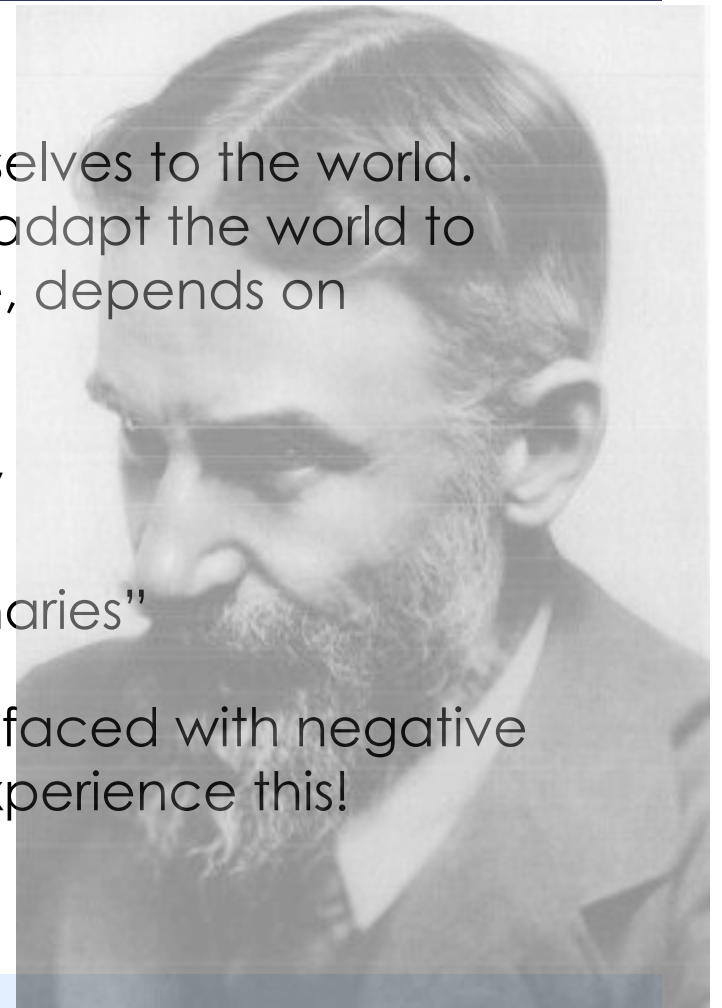


# By definition, innovation is disruptive!

- ▣ “Reasonable people adapt themselves to the world. Unreasonable people attempt to adapt the world to themselves. All progress, therefore, depends on unreasonable people.”

George Bernard Shaw  
"Man and Superman"  
"Maxims for Revolutionaries"

- ▣ Being unreasonable means being faced with negative social pressure. Most visionaries experience this!



# Consider Wikileaks

WikiLeaks

- Wikileaks has many characteristics of the previously named projects, yet is not as open, not as transparent, doesn't involve as many people. Thought experiment: could it?
- The Bradley Manning story is a stark example of conflicting interpretations of what is good, what is altruistic.
  - All the major players disagree on what is "right"
- Many efforts to do the right thing, to improve the world, to assist humanity. Yet, these efforts are not universally viewed as good, and there is open disagreement among the players
  - If nothing else, this demonstrates the social aspects of the value of information and the role of technology



# Let's think about money

- Whether you like it or not, money is a major motivator for technological progress
- The relationship of a project (founder, members, mission, organization) to money is often fundamental to the project
  - Most project founders try to avoid becoming beholden to money, but not all
  - Part of being successful means dealing with how to interact with people who want to leverage your success for their own profits
- It's hard to be successful without compromising. Usually, those who refuse to compromise have difficulty retaining project leadership (i.e., Jobs v. Woz; Stallman v. Torvalds)



## Corporate Altruism: Sometimes effective

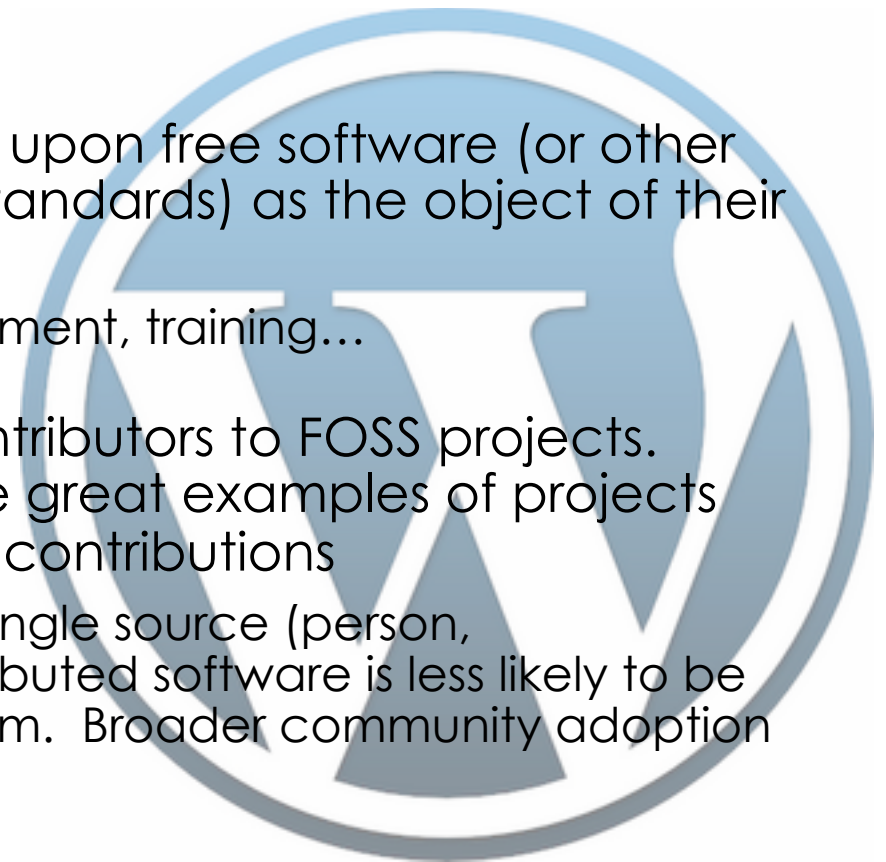
- ▣ Usually the bottom line is the driver: leveraging free and open activities, to help drive revenues. (“Google 20” is an interesting variant). RedHat’s many contributions to open source projects epitomize this
- ▣ Sometimes this results in long-term projects. Sun’s exemplars included Lustre, MySQL and Java. But only Java was “born” at Sun. Others were acquired
- ▣ More typically, philanthropic activities come from individuals, not the companies (i.e., Bill & Melinda Gates Foundation)
- ▣ Small companies can be good at building and giving away. Larger companies are seldom as good



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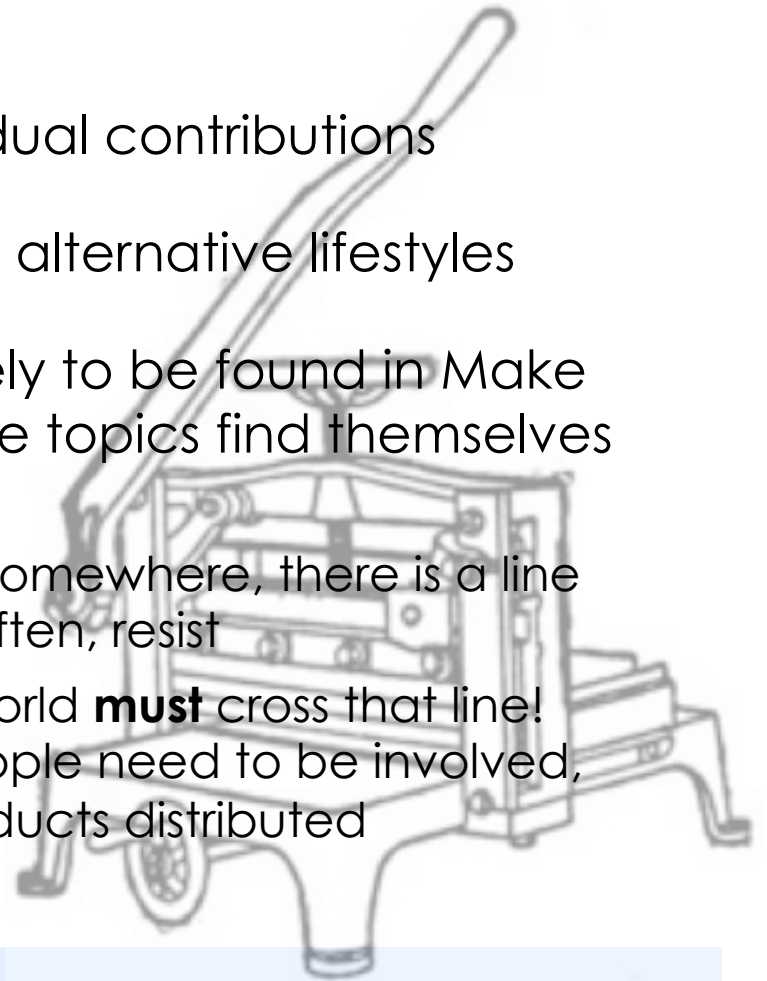
# Corporate Altruism: Smaller Businesses

- Many small businesses rely upon free software (or other artifacts, including open standards) as the object of their product
  - Support, feature enhancement, training...
- Many are tremendous contributors to FOSS projects. Drupal, PHP, Wordpress are great examples of projects that are magnets for such contributions
  - Drawback: when from a single source (person, organization...), the contributed software is less likely to be maintained in the long term. Broader community adoption might not happen



# Consider: “Make” Magazine

- Legitimate press, open to individual contributions
- Includes dangerous techniques, alternative lifestyles
- Consider: What topics are unlikely to be found in Make magazine? Could some of these topics find themselves in other mass-market media?
  - This thought experiment is key. Somewhere, there is a line that can be crossed. TPTB will, often, resist
  - Yet, progress towards a better world **must** cross that line! And, to be successful, many people need to be involved, and information about their products distributed



# So is Money a Problem, or a Solution?

- ▣ If your project is reliant upon income (even donations) then that's can be a weakness.
  - ▣ But there are plenty of other risks, money might not be the biggest risk
- ▣ Some projects have contributors that are paid, others are all volunteers. Sometimes this can create stress, but in larger projects there is often a mix
- ▣ The examples discussed earlier have not excluded the role of money, and have sought their own balance with the role of money

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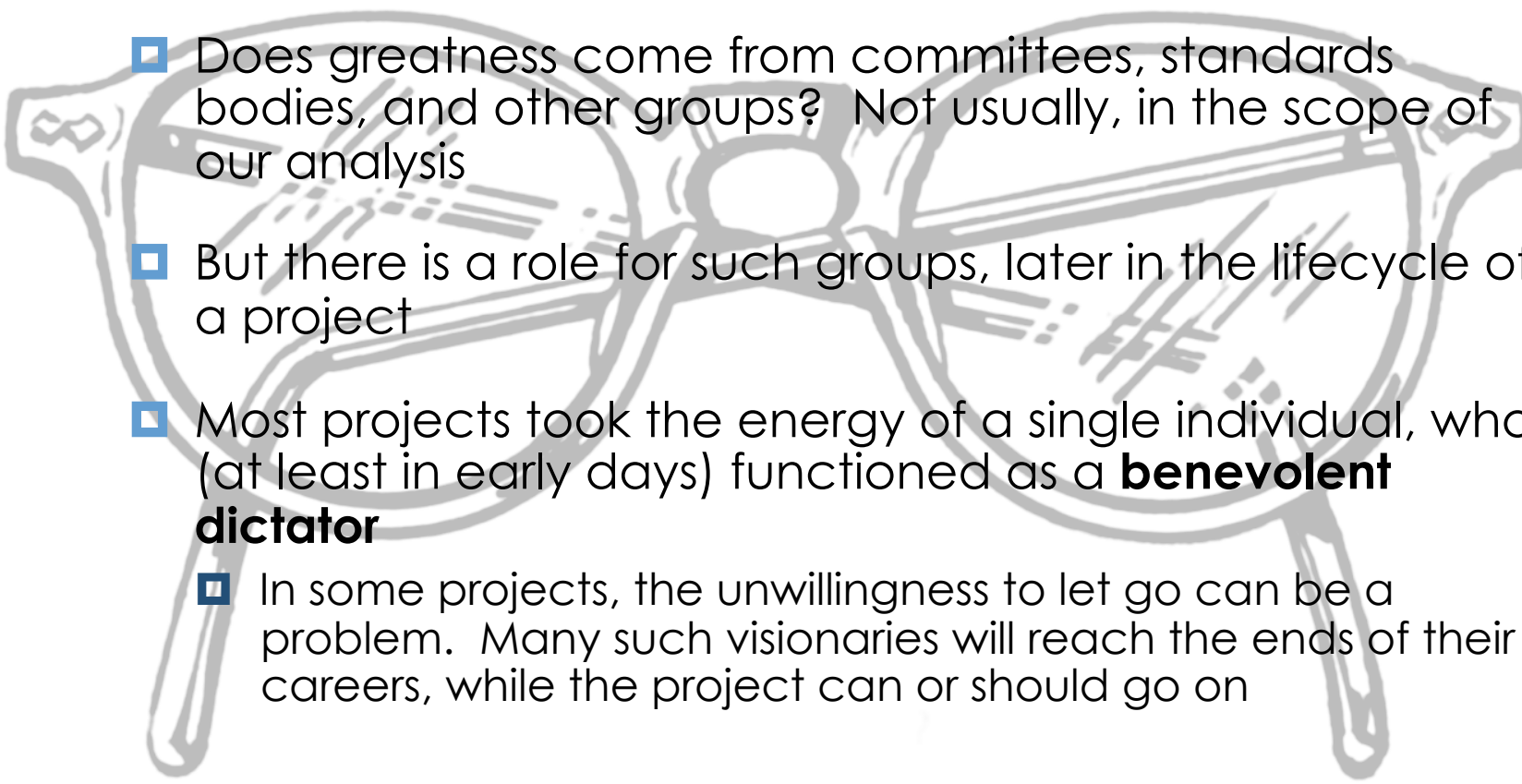
# How does Building and Giving Away work?

- Today's audience does not need to be convinced of the benefits of building and giving away technologies. Probably most of us are engaged in one or more projects that does this
  - Yet, we all have a different awareness of, and relationship to, such technologies. We cannot take the time to deeply analyze how each relates to our own personal values. However, as we get more engaged with such technologies (as user or contributor) such considerations become more important
  - Next, we will give thought to some **broader concepts**
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# Typical Lifecycle of Building and Giving Away

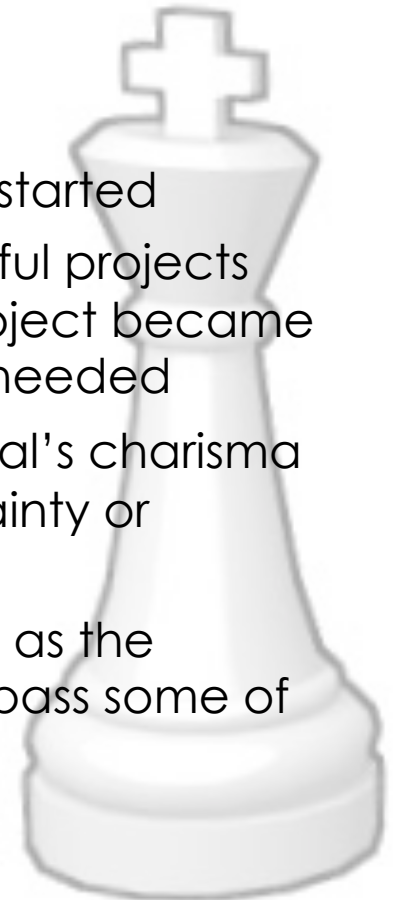
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- ▣ Identifying a need. Itching a scratch, per The Cathedral & the Bazaar, or other motivations
  - ▣ Identifying a solution
    - ▣ Implement, specify, lead, etc.: Work on it!
  - ▣ Enlist the help of others
  - ▣ Develop a product
  - ▣ Develop an organization
  - ▣ Evolve (or fade away, or be assimilated, or...)

# Commonalities: Individual Vision

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- ❑ Does greatness come from committees, standards bodies, and other groups? Not usually, in the scope of our analysis
  - ❑ But there is a role for such groups, later in the lifecycle of a project
  - ❑ Most projects took the energy of a single individual, who (at least in early days) functioned as a **benevolent dictator**
    - ❑ In some projects, the unwillingness to let go can be a problem. Many such visionaries will reach the ends of their careers, while the project can or should go on

# “Big Man” Mentality: The Benevolent Dictator

- ▣ Why does this seem to help?
  - ▣ Individuals usually have the vision to get things started
  - ▣ Early days are often a solo effort. Most successful projects saw thousands of hours of effort, before the project became well-known. Vision is not enough, hard work is needed
  - ▣ When something is new, sometimes an individual's charisma or vision can be sufficient to overcome uncertainty or vagueness about direction
  - ▣ There are many opportunities for disagreement as the project grows. A benevolent monarch can bypass some of the associated churn





# Churn, Trolls

- Success brings attention, not all is benevolent
  - Not all criticism is bad, not all change is for the worse
- Personalities clash. There are numerous types of dysfunction that can occur, but conflict is also beneficial (forcing evolution)
- Strength of character, quickness to send messages, interpersonal leadership – a mixture will determine whether these are major distractions, or beneficial
- A strong vision, and leadership, and policy: these can all help to keep on track, and insure distractions are not disasters
  - The community will help “enforce” these norms, if they are clearly communicated



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# Maturation

- ▣ Eventually, project volunteers will profess a clearer vision of the project's essence (philosophy, goals, history....) than the original leaders ever did 😊
  - ▣ Clarity of vision, mission, goals, values: these are critical for attracting community involvement and adoption
  - ▣ The large projects we mentioned earlier generally have quite open attitudes, making it easier for people to get involved as users or contributors. They also make it easier for adoption for commercialization, or otherwise non-aligned purposes
  - ▣ A healthy organization is when loss of the visionary leader doesn't disrupt the project
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# Summary of some things that work

- ▣ Individuals who articulate and pursue their vision, but are prepared to **work**, often for years. Devotion and sacrifice is often seen
- ▣ Becoming aware of the potential negative influences of: money, organizational structure, long-term stability, millions of adoring fans, etc.
  - ▣ ... yet, be ready to embrace them for their **positive** influences
  - ▣ This is a balance that might not matter as much in early days, but can be a major aspect of adoption
- ▣ Successful projects engage communities, as developers, users, champions. In fact, they might take the project to heights that the original founders might not have envisioned



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# Technology-enabled communities

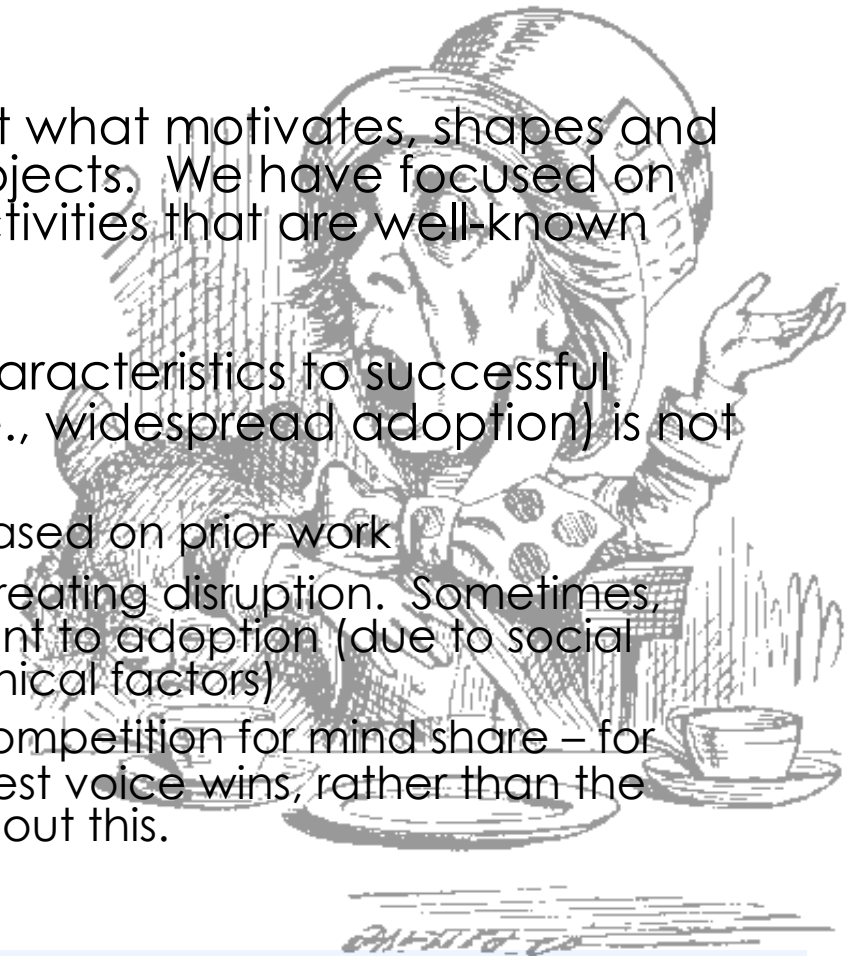
- ▣ Today's projects rely upon the Internet and related technologies to make progress
  - ▣ Leaders need to be effective at using technologies to provide leadership and direction
  - ▣ Such technologies are evolving (indeed, their evolution is often fostered or created by the types of projects being discussed here!)
  - ▣ Embrace best of breed, but beware of lock-in. Beware of being side-tracked by developing supporting technologies that are off-mission or outside of your project's expertise
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# A few words about volunteers

- We are focused on projects that have benefit from unpaid, altruistic, volunteers. Volunteerism is a major area of inquiry that we have not talked much about. Briefly:
  - Successful projects attract volunteers with different values & skills
  - Most projects are **meritocracies**. Those who work hardest (and in a way that is deemed beneficial to the project) rise to positions of leadership
  - Barriers to entry are a challenge. While many projects have outstanding avenues for new people to get involved, others are much more restrictive. Some projects are more open to less-skilled (or less-indoctrinated) contributions than others
  - Social, political, cultural, economic and other barriers: lessened in online communities

# Concluding thoughts

- ▣ Today we have thought about what motivates, shapes and sustains technology-based projects. We have focused on some of the free and open activities that are well-known and widely adopted
- ▣ There are several common characteristics to successful projects, though “success” (i.e., widespread adoption) is not achieved by a simple recipe:
  - ▣ Timing matters. Projects are based on prior work
  - ▣ Visionaries are, by definition, creating disruption. Sometimes, disruption will be an impediment to adoption (due to social factors, much more than technical factors)
  - ▣ Today, there is considerable competition for mind share – for attention. It might be the loudest voice wins, rather than the smarter. Try not to be bitter about this.



# Making a better world

- As a **contributor**, “vote” with your energy: contribute to what you believe in. Be prepared to discount the differing values of the community, when those values are not relevant to the project
- As a **leader**, be patient, but not pedantic. It will take time for your vision to be embraced by others (if ever), yet you will have a difficult time gaining supporters by being overly critical of the status quo
- As a **human**, be thoughtful about your own values, and how they interact with the highly technological world we live in. Apply your own energy, as best befits you, to the greater good



# Your comments, questions

