

Systems design explains the world: volume 1 by Avery Pennarun

<https://apenwarr.ca/log/20201227>

- **Introduction, led by Tammy Troup** / Mastodon: tltroupe@digipres.club / www.linkedin.com/in/tltroupe
 - Housekeeping -- Code of Conduct
 - Communication -- Miro and Zoom Chat
 - Timeline with half an hour to wrap up
 - General structure of topics as co-creation exercises (thanks Dawn Ahukanna)
 - Intro to section - 2m
 - Contribute to board - 5m
 - Summarize (paper did/did not say) - 3m
 - Transition to next section / continue conversation in Miro
- **What is systems design? led by Yvonne Lam**
- **Systems of control: hierarchies and decentralization, led by Tammy Troup**
- **Chicken-egg problems, led by Dawn Ahukanna**
- **Second-system effect, led by Andrea Magnorsky**
- **Innovator's dilemmas, led by Shaun Greene** / Mastodon: ductape@mastodon.social / linkedin.com/in/ductape/
- **Wrap**

Art of Gathering Priya Parker <https://www.priyaparker.com/book-art-of-gathering>

Intentional communication

1. Decide why
2. Close doors
3. Create temp alternative world
4. Never start a funeral without logistics
5. Come as you are
6. Cause good controversy
7. Accept the ending



cutiefish.substack.com

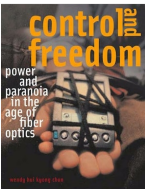
20 Things I've Learned as a Systems (Over) Thinker

This list has received positive feedback. It seems to have struck a nerve. Sending it to coincide with Monday morning to help folks navigate their week. Take care of yourself! Your brain is working overtime-all the time. Practice "radical" recovery.

 noidea.dog

Being Glue - No Idea Blog

Slides and notes for the Being Glue talk.



power and paranoia in the age of fiber optics

MIT Press


 mitpress.mit.edu

Control and Freedom

A work that bridges media archaeology and visual culture studies argues that the internet has emerged as a mass medium by linking control with freedom and de...

A comprehensive program to help groups of all sizes. Align resources • Support engagement • Achieve shared goals

PROSOCIAL



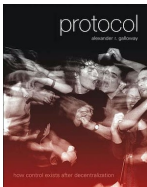
USING EVOLUTIONARY SCIENCE TO BUILD PRODUCTIVE, EQUITABLE, AND COLLABORATIVE GROUPS

FALLON W. METZES, PH.D.
DAVID SLOAN WILSON, PH.D.
STEVEN C. HAYES, PH.D.
EDITED BY RICHARD P. LEECH, PH.D.

 david Sloan Wilson world

Prosocial

This book, coauthored with two leaders in Contextual Behavioral Science, provides a comprehensive guide to Prosocialworld, a practical framework for working with single groups and multi-group cultural ecosystems to become more prosocial and adaptable...



protocol

author: gabor maté

how control works after deconstruction

MIT Press

 mitpress.mit.edu

BOOK REVIEW: HOW THE BEST LEADERS LEARN TO LET GO

THE POWER OF GIVING AWAY POWER

MATTHEW BARZUN

 www.penguinrandomhouse.com

The Power of Giving Away Power

Matthew Barzun: 9780525541042 | PenguinRandomHouse.com

"This book is a breakthrough. It's beautifully written, perfectly timed and heralds a new way forward. I'm buying a dozen copies to share with friends and colleagues." - Seth Godin...

 www.goodreads...



Maverick: The Success Story Behind the World's Most Un...

The international bestseller that tells how Semler tore...

 apenware.ca

What do executives do, anyway?

An executive with 8,000 indirect reports and 2000 hours of work in a year can afford to spend, at most, 15 minutes per person in...

 en.wikipedia.org



Race After Technology - Wikipedia

From Wikipedia, the free encyclopedia

Race After Technology: Abolitionist Tools for the New Jim Code is a 2019 American book focusing on a range of ways in which social hierarchies, particularly racism, are embedded in the logical layer of internet-base...

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 www.goodreads.com

Goodreads

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SORTING THINGS OUT

CLASSIFICATION AND ITS CONSEQUENCES

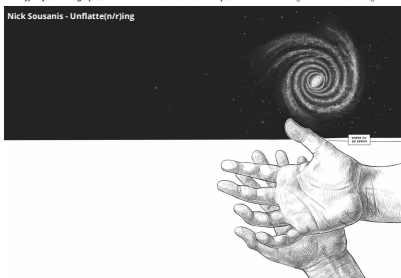
STEPHEN C. BOMBER AND SUGAN LEISH STAR

 direct.mit.edu

Sorting Things Out: Classification and Its Consequences

A revealing and surprising look at how classification systems can shape both worldview and social interactions. What do a seven-research-century mortality table w

chicken and egg problems
 Archetype systems design question - Which one comes first? **Alternative question** - Where do we begin and where does "it" begin?



The answer to the riddle is "neither".

Some chicken-egg problems:

- Electrical distribution networks
- Phone and fax technologies
- The Internet
- IPv6
- Every social network (who will use it if nobody is using it?)
- CDs, DVDs, and Blu-Ray vs HD DVD
- HDTV (1080p etc), 4k TV, 8k TV, 3D TV
- Interstate highways
- Company towns (usually built around a single industry)
- Ivy league universities (could you start a new one?)
- Every new video game console
- Every desktop OS, phone OS, and app store

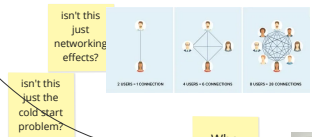
The defining characteristic of a chicken-egg technology or product is that **it's not useful to you unless other people use it**. Since adopting new technology isn't free (in dollars, or time, or both), people aren't likely to adopt it unless they can see some value, but until they do, the value isn't there, so they don't. A conundrum - (to) who?

It's remarkable to me how many dreamers think they can **simply outwait the problem** ("it'll catch on eventually") or **outspend the problem** ("my new mobile OS will be great, we'll just subsidize a few million phones"). And how many people think getting past a chicken-egg problem, or not, is **just luck**.

If you're building a **one-sided, two-sided, or three-sided market**, you'd better understand systems design, chickens, and eggs.



mastodon.social
 Nick Sousanis
 (@nsousanis@mastodon.social)
 Attached: 1 image been reading, thinking, planning, composing, and thinking about nothing (and beginnings) for about seven months now. Feels good to make drawings about it finally... Onward. #nostos #unflattening 2



Isn't this just network effects?
 Isn't this just the cold start problem?

Who benefits?

Building Adaptive Communities through Network Weaving - Non Profit News | Nonprofit Quarterly
 This is an article that focuses on the basic phases of building effective networks, using one grounded example to bring the theory to life. We recommend that readers look back also at Carl Soudan's article (see Winter 2003, "Making Change: How to Build...")

what is the maximum viable network? value is the smallest number of people who can use the tool and find value?



Boundaryless - Enabler for the future of Organizing
 Boundaryless - Enabler for the future of Organizing
 Boundaryless - Enabler for the future of Organizing

Community of practice is the real value of standards

Types of Chicken and egg systems

- 1 market
- 2 market
- 3 market

Other questions



How to deal with the co-dependency?

Answers



Examples



Maybe in some cases there are some already existing and "similar enough" chickens or eggs you may use to convince people to use your technology?

But not! Just like with real chickens and real eggs, there's a way to do it by bootstrapping from something smaller. The main techniques are to lower the cost of adoption, and to deliver more value even when there are fewer users.

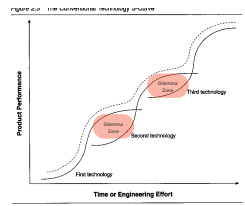
Standards are sometimes a chicken and egg problem



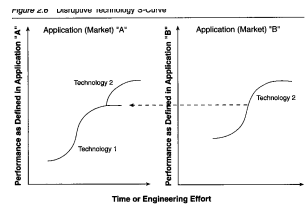
Can't remember product name...
 For MIT 7.033 course...
 Boundaryless - Enabler for the future of Organizing

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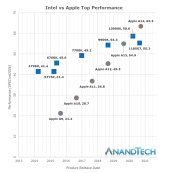
S-Curves



Source: Clayton M. Christensen, "Exploiting the Limits of the Technology S-Curve, Part I: Component Technology," *Production and Operations Management*, vol. 4, Fall 1995, 343. Reprinted by permission.



Source: Clayton M. Christensen, "Exploiting the Limits of the Technology S-Curve, Part I: Component Technology," *Production and Operations Management*, vol. 4, Fall 1995, 343. Reprinted by permission.



A dilemma is a **difficult choice between two or more unfavorable alternatives**. In the concept of technology, the choice is often for leaders to decide to continue investing in the current technology, or if the time is right to invest in a new technology.

Wait too long to invest and your product/technology gets left behind and loses competitiveness, i.e., Intel vs Apple silicon. Or invest in new technology that might cannibalize existing product. Jump too soon (immature technology) and lose your existing market, jump to fast and get beaten by competitors in current curve.

Dilemmas you have experienced

supporting SOAP/SOA services

investing in Flash/Flex for rich internet experiences

working on IBM's microdrive (quarter sized hard-drive) tech in late 90s as flash began to appear

Making CV algorithm work with black and white (easy to develop) or colorful (more beneficial but difficult to develop) images

Investing in preventing failures from happening in a system. Preventive vs. Reactive

Discussion area

Like paradigm shifts (Kuhn)? but for business

capitalism forces the incumbent to retreat up

Many competitors fail

Incumbent buys competitor

[PDF] The Innovator's Dilemma | Semantic Scholar

When I began my search for an answer to the puzzle of why the new firms can't be a threat to the old ones, I was struck by the fact that the old firms are not only still around, but they are still doing well. Why? The answer came along only slowly and gradually.

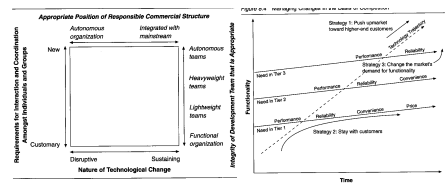


Figure 2.4: Managing technology in an era of uncertainty

What is systems design?

What is systems design? led by Yvonne Lam

Labor issue

Who does it?
How is it accomplished?

By it's nature, it can come from anywhere

When does the system cross the threshold where it needs explicit "design"?

How do we get better at detecting this threshold and identifying when it happens?

Systems work can "come from anywhere"

Dealing with components ownership & system "grey areas"

Glue work

system designer & institutional power

a person without the title, but with other kind of influential power?

Once you reach a certain level, you job description doesn't tell you what to do explicitly, it is of you to find out what needs to be done. Systems thinking helps a lot here.

additional reading:
<https://cutefish.substack.com/p/20-things-ive-learned-as-a-systems>



cutefish.substack.com

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Systems of design

systems of control: hierarchies and decentralization, led by Tammy Troup

burning out

Environment exploring how networks spoke with Jesse Huang, Jay and our product strategist, orkic. We came away with principles to help a network work out loud, uncover and invisible work, and creat...

the solution to leadership woes is often more leadership. being explicit about how to step into power, not only about who has power, is key

System legibility and privileges

Beware polarities - aspects of both forms are desirable; it is a balance

It is important to know WHEN it is (still) time to make design changes and WHEN it is too late to change some aspects

structure => personal outcomes => interests => structure

Impact on change resistance?

Not all system changes are acceptable to all stakeholders. But relative power can sometimes push them through anyway

De-centralized systems of control run the risk of having implicit structures of control/hierarchies

"Power"

Analogies to political bodies and/or organisms apply when it comes to reasoning about power

Tyranny of structurelessness

why are we assuming that people higher up in an org have better visibility? (different, yes, but better?)

We're dealing with humans; surrogates for self-worth are difficult to deal with

expectations based on title

abstraction, granularity ...
<https://thecybernetician.com/abstraction-granularity-1-of-2/>

apenwaar.ca
What do executives do, anyway?
An executive with 8,000 indirect reports and 2000 hours of work in a year can afford to spend, at most, 15 minutes per year per person in th...

Hierarchy of competence, not of titles.

<https://www.cleararchy.com/>

Interested in literature on "Control" (or the idea that we can control orgs)
please add

What sort of control? There is the field of cybernetics, also control theory (PID controllers and so on) and then there's the human organisational side

"higher-ups" have a better vantage point for holistic strategy, less likely to pigeonhole on local maximums

"This apparent lack of structure too often disguised an informal, unacknowledged and unaccountable leadership that was all the more pernicious because its very existence was denied."

"Informal, unacknowledged, and unaccountable" control is just as common in distributed computing systems as it is in human social systems.



Different forms of control lead to different systems properties (tradeoff of global efficiency v local view)

Thinkers vs. Doers? Could we empower individuals by combining both parts instead of separating them?

Named since 1975

Second-system effect

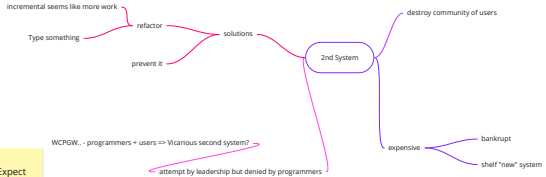
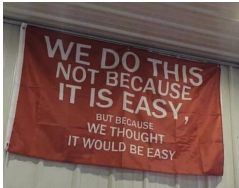
Second-system effect, led by Andrea Magnorsky

Second system effect arises through the following steps:

- Starts small and is built incrementally
- Over time, the product grows in popularity => becomes profitable.
- As the system evolves, getting more and more hacks on top. Early design tradeoffs start to be a bottleneck.
- The team figures out a new design that would fix all the things (And they're probably right.)
- Since the product is already popular, it's easy to justify spending. A project is launched to rewrite everything from scratch.

Consistent results

- Slower than predicted
- Solves known problems.... and also creates new problems 😞
- Time split between old and new systems
- As schedule slides, new project is forced on to users. The users are not happy



WCPGW... programmers + users => vicarious second system?
 Expect contention!

How many second systems of you built in your career?
 Me: 3

I spent the last few months getting a team out of the second-system mentality and adopt an evolutionary approach...
 🙄

"strangler pattern" (needs a better name) is ex. of avoiding the second-system

In my experience some teams used the "first" system anyway, ignoring the second one because it was buggy but nobody knew its bugs (aka the evil you know)
 <-wow

a mindset of "perpetual beta" can help get away from first vs second system experiences

really interesting work in the artifacts from this workshop on keeping humans in the loop

Wires.google.com

AgInt Workshop
 (wire science has been traditionally aimed around the individual as the unit of cognition. Research on learning through learning, attention, memory, attention, expertise, emergence, and consciousness typically isolate their subjects an...

perpetual beta - our new normal
 The perpetual beta model describes how knowledge can flow between professional networks, communities of practice, and work teams. It shows that it is necessary to curate all items in order to ensure a plurality of ideas and perspectives - as well as to...

Kudos to
Tammy the
time
constraint
worked!

When I tried to pull it all together, it fell into two parts:

- *organizing for systems* (roles of integrators and glue people and what we reward and don't based on what we (choose) to make visible/see; structures for decision making, information flow and workflows, etc.)
- major considerations for surviving and thriving as *econo-socio-technical systems move through the evolutionary lifecycle*: beginnings (chicken and egg); middles (second systems) and endings (Innovator's dilemma).

Discord server: I (Ruth) will follow up with an email to those who indicated interest in the chat.

TL Troup to Everyone 2:00 PM

Discord link

<https://discord.com/channels/1041110468762292235/1087094910190112900/1092492017092796496>

Ivan Rublev 2:04 PM

How to get an invite to the Discord?

TL Troup 2:06 PM

Ivan, I think the channel that I linked is public, but other channels are used by class alumni.

@ruth, will Ivan need an invitation to the server to access the papers-in-system channel?

Simon Kohlmeyer 2:08 PM

I'd also be interested in discord access if that is possible. The link says there are no channels I have permissions for

Ivan Rublev 2:09 PM

Same here.

Lari Hotari to Everyone 2:09 PM

I heard someone mention that there's also a Discord channel to continue discussions later. Where can I find the way to join the Discord channel? This is very interesting discussion and I'd like to keep connected.

Well, yes. They did. They did it by making the **single worst strategic mistake** that any software company can make:

They decided to rewrite the code from scratch.

Don't throw away all the code base at once - tests of the legacy code are its best documentation :)

People always think they can do better than others, when they don't think about the context in which things were built.

The idea that new code is better than old is patently absurd. Old code has been used. It has been tested. Lots of bugs have been found, and they've been fixed. There's nothing wrong with it. It doesn't acquire bugs just by sitting around on your hard drive. Au contraire, baby! Is software supposed to be like an old Dodge Dart, that rusts just sitting in the garage? Is software like a teddy bear that's kind of gross if it's not made out of all new material?

It's important to remember that when you start from scratch there is **absolutely no reason** to believe that you are going to do a better job than you did the first time. First of all, you probably don't even have the same programming team that worked on version one, so you don't actually have "more experience." You're just going to make most of the old mistakes again, and introduce some new problems that weren't in the original version.



Code of Conduct

Our participation here reflects our mutual agreement and commitment to each other to follow this code of conduct during our discussion today. It applies equally to all of us (including facilitators).

- We share a commitment to providing a friendly, safe and welcoming meeting experience for all, regardless of level of experience, gender identity and expression, sexual orientation, disability, personal appearance, body size, race, ethnicity, age, religion, nationality, or other similar characteristic.
- Please be kind and courteous. Please avoid using terms that might detract from a friendly, safe and welcoming environment for all.
- Respect that people have differences of opinion and that our discussions will reflect different perspectives, trade-offs and impacts. There is seldom a right answer.
- Should anyone insult, demean or harass others in this setting, they will be excluded from interaction (contact the facilitators, if this happens). That is not welcome behavior.
- Likewise any spamming, trolling, flaming, baiting or other attention-stealing behavior is not welcome.

Note: We have adapted this code of conduct from the Ruby Code of Conduct.