

372: MOBILE REVOLUTION IN DEVELOPMENT

Department of Technology and Society – SUNY Korea

Spring 2020, Draft Syllabus



“Wedded as they are to nineteenth-century industrial technology as the basis of class liberation, nothing could be more subversive of the Marxian dialectic than the idea that linguistic media shape social development, as much as do the means of production.” –Marshall McLuhan, *Understanding Media: The Extensions of Man* (1964), p. 49.

Prerequisites. AMS 161 or MAT 132 or MAT 127; CSE 114; EST 320; U3 or U4 standing.

Time: Tuesdays and Thursdays, 3:30 a.m. – 4:50 p.m.;

Place: B203

Professor: Mark Whitaker

Office: B303

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Course Summary: First, for background of the origin of this novel course and research topic, this is a course that I invented out of my dual interest in development strategies and in the world history of communications technologies. In Spring 2016, the course was approved for the official curriculum of the Department of Technology and Society. It is one of a group of courses created for the fresh emphasis in our department of “ICT4SD” (‘information communication technology for sustainable development’). The wider DTS

specialization in ICT4SD finally was authorized in Fall 2018. SUNY-Korea's DTS is one a handful of places in the world to study ICT4SD for credit at an undergraduate level. Most courses on mobile development are graduate level programs only. The first international conference on ITC4SD seems be to only from 2013.

4 International organizations coordinating ICT4S/ICT4D/ICT4SD/ICT4HD/ITC4ND:

ICT4S: <http://ict4s.org/> (first conference 2013)

IRSCNS: <http://ict4sd.org/irsens.php> (first conference 2015)

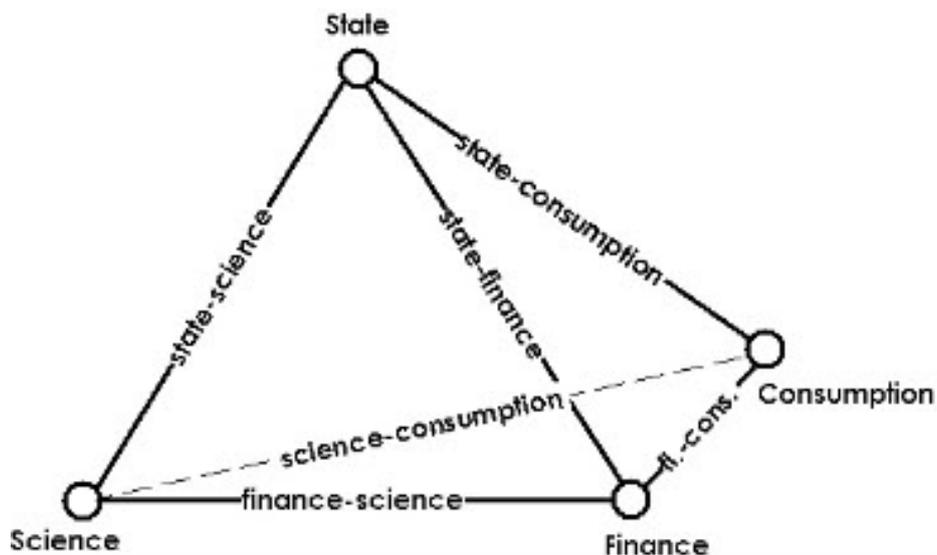
INTESDA <http://intesda.org/information-communication-technology-human-development/> (first conference 2017)

ICT4NDS: <https://www.unilorin.edu.ng/index.php/events/6422-1st-international-conference-on-ict-for-national-development-and-its-sustainability-ict4nds> (first 2018)

For more information, search online for those abbreviations above. To coin another abbreviation, this is a course in ICT4SMD, or 'information communication technology for sustainable *mobile* development.'

First, in EST 372, we will explore **three themes**: [1] current and future trends of development and digital information technology toward *mobility* [2] combined with many other technologies and relationships of consumer use increasingly repurposed and adapted toward mobility and sustainability (wearable, IOT, education, shopping, banking, etc.), [3] along with skills and knowledge required for employing such arrangements effectively toward advancing social and economic development.

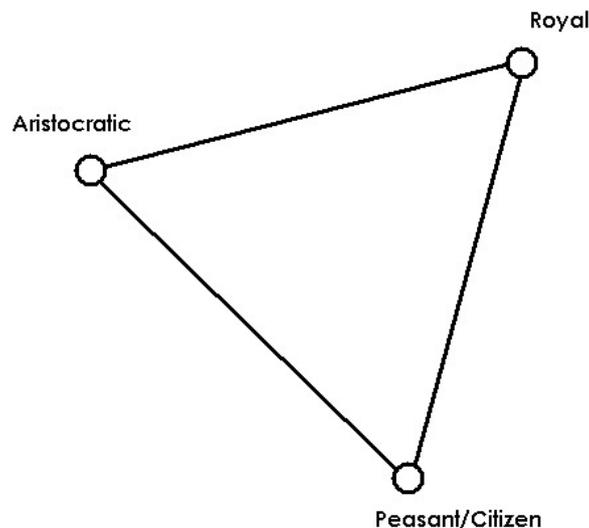
Second, to analyze something as widespread as the mobile revolution for its social effects and to judge it for ongoing strategic improvement, discussion focuses on framing comparative cases of this mobile revolutionary change so we can think about it in these two ways. To be systematic and comparative about this analysis and evaluation, the course frames and explores **four empty categories of social life** that are *contingently changing* in their contents under the mobile revolution: **state, science/education, consumption, and finance.**



These four areas of social life are comparable—past, present, or future. This makes these four areas a good basis for analyzing dynamics and for judgements about how different countries use such networked development for their own ideas of social, economic, national, and sustainable development. The first few lectures prepare you for thinking about how different is mobile revolution as a developmental model or a fresh theory of development, by relaying the past 60 years of modern development thinking and strategies so you can compare past development strategies with the current development strategies of ‘mobile revolution in development.’ (Section two in the appendix of this syllabus describes themes of this.) Then, after this short history of developmental ideas over the past 60 years, most of the course reviews empirical changes and trends in this ‘mobile revolution in development’ in those four categories of social life.

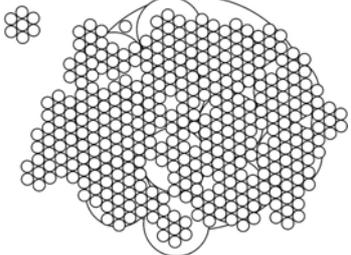
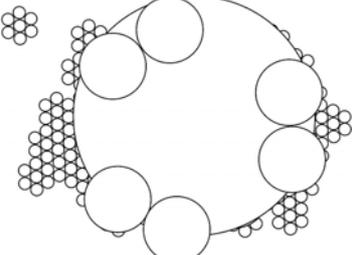
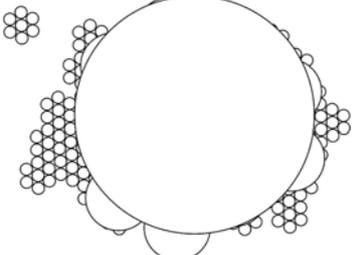
Equally within those empty circles of the four categories of social life that are influenced by mobile revolution, **three different kinds of interests** compete in an unpredictable future to strategize very differently for what they want ‘mobile revolution’ to do tactically for themselves. Next, a heuristic chart describes **these three competitive and collaborative different groups of interests** that want to use ‘mobile revolution’ of ICT very differently.

Trialectic Diagram:



These are just abstract terms. “Royal” might mean equally a centralized public one-party state authority in mobile development, or a federal level of a federated republic. “Aristocratic” might mean equally a decentralized private interest like a major corporation, bank, a religious institution, or regional interest in a wider state, against the former ‘royal’ position. This position wants to use mobile development for its own interests as well. “Peasant/Citizen” might mean equally a small regional public place like a town or village, smaller businesses, or just citizens and consumers in general and what such small individual or collective interests want to see in mobile revolution that may set them at odds with other ‘royal’ or ‘aristocratic’ interests in such developments as well.

How differently? For just one example, think about ‘privacy rights’ and how different groups might have different priorities about your data use and who wants to have primary jurisdiction to see it or to use it. Second, thus it is easy to see how different competitive/collaborative interests in mobile revolution want a different future social world, *spatially*, for what is their future ideal. The trialectic diagram above describes these spatial interests and their competitive strategies for how they want mobile revolution to look differently in the future. Even though all these interests employ ‘the same ICT mobile technologies,’ these interests *want to employ the same ICT for very different and oppositional goals. For instance, see the following three future scenarios:*

		
<p>The space of our future mobile revolution, if hegeomonically dominated by many powerful sustainable urban-rural regions of P2P economy, it means weak major private corporations, weak states</p> <p>(think ‘<u>local cryptocurrency regionalism</u>’: mobile ICT used for regional sharing economies, greater regional citizen political participation, sustainable autonomous regions)</p>	<p>The space of our future mobile revolution, if hegeomonically dominated by multiple powerful global private corporations, it means weak citizens/regions, weak states</p> <p>(think ‘<u>privatized global markets dominated by corporations</u>’ of the USA, Europe, Japan, Korea, or China: mobile ICT used for massive global consumer bases, with little interest in enhancement of citizen rights, sustainability, equality of development, or participation)</p>	<p>The space of our future mobile revolution, if hegeomonically dominated by powerful states, it means weak global private corporations, weak regions</p> <p>(think ‘<u>China</u>’: mobile ICT used for real-time centralized citizen monitoring, centralized banning of various public communication terms, and central citizen ‘scoring’ based on their social media posts and their CCTV surveillance going into a facial recognition nationwide database creating ‘scored’ behaviors that can get them denied travel, denied dating app uses, or worse, etc.; think ‘<u>USA</u>’: its NSA global mobile spying networks launching drone missiles to kill people without trial based on GPS tagged mobile phone locations)</p>

Three potential ‘mobile revolution’ scenarios of the future are above. For the ‘tri-geog(aphy)’ interests, on the leftmost image, these are the multiple regions that want to use mobile ICT networks for their own regional development. This represents different regional groups in a social situation. This represents small local public and private actors, like regional cooperatives, small regional banks, local charities, and local businesses. This means there are some people who strategize with ICT for inventing greater localization, community creation, democratic participation, less scarcity, and

sustainability. They want greater community and more representative regional development with the mobile revolution.

On the other hand, there are others that want larger empires, public or private, out of the mobile revolution—seen in the middle image and the rightmost image.

For the ‘tri-aris(tocracy)’, there are multiple private actors (like corporations or banks) that want to use mobile ICT networks for their own growing global empires—which means they innately want to demote the regional economies and innately want to demote larger regulatory powers of states against them as well. This represents large private actors in a social situation, like corporations, major banks, and other larger globalized social-religious-charity institutions or global NGOs. Therefore, at the same moment, some people are strategizing (and even conniving) for greater globalization mostly for finding ways to maintain centralized and unrepresentative leadership power through attempting to appeal to only mass markets and mass politics as they rely on artificial scarcities in other mobile development options in order to destroy, demote and erode others’ autonomous organizing potentials, information sharing, and self-organizing for localization. This is because a developmental paradigm of localization in mobile revolution fails to fit their globalized agenda for mobile revolution. This is because they want only wider scale and large international empires in the mobile revolution.

For the ‘tri-royal’, this represents larger state public actors that want to use ICT to dominate their multiple regions and their large private corporations. For the ‘tri-royal’, there are some public states that want to use mobile ICT networks for their own national internal surveillance on their own populations or their own growing global surveillance on other countries’ populations. Think about China spying via Huawei 5G technology, or think about the US’s NSA spying on the whole world via mobile phone companies and major social media communication platforms like Facebook, Twitter, Gmail (both noted years ago from whistleblowing leaks by Edward Snowden). This means the USA or China wants to demote regional autonomy as well as demote autonomy of larger private actors or at least constrain them within their larger statist model. China, Israel, and the United States all have huge globalized/national ICT sectors involved in this kind of surveillance-based ICT mobile revolution.

All these different futures are competing now. Which do you want? Both the localization wing of mobile revolution and (two kinds of) globalization trends in mobile revolution (“aristocratic” or “royal”) exist at the same time, and all three wings are encouraging different orientations of mobile ICT networks for different purposes. This is an open future of vision for the mobile revolution, instead of a closed destiny where one will automatically win. These three different positional interests are competing, collaborating, and accommodating with each other. Therefore, the term ‘mobile revolution’ will refer to the open future of this growing competition over the soul of mobile revolution instead of assuming only one of these trends. The main question of the early 21st century is what will the social and developmental values of this mobile revolution be, since due to ICT there are growing technological potentials *for both localization and globalization*:

- Growing potentials for strategic localization, representative regional economies, democratic transparency, ad hoc networks & sustainability; vs. simultaneously
- Growing potentials for strategic globalization, repressive surveillance, durable institutional global forms of control and inequality, wider scales of international markets of autonomous individuals, and demotion of regional development unless conducted through global/international platforms of frameworks.

All above trends are happening simultaneously. Daily in your life, the ‘apps’ and infrastructures you choose to use support and give strength to one or another of these futures. Which future are you building by your own mobile ICT use? Is it the future you want? All the above different trends are created by people—mere people, nothing more. People dream up different mobile applications and network arrangements that change the flow of money and information in the world to benefit certain kinds of arrangements over others. Decisions matter. Visions of the future matter. Ideals matter. Therefore, **technology is hardly “causing” localization or globalization. People cause localization or globalization** by different daily tactical choices in what software, politics, business plans, and technology design to support. What future are you building and choosing? Did you ever think about that? People make technological and value decisions on how to apply these fresh mobile ICT options for organizing social life. In short, people employ the same mobile ICT technologies and networks for three very different political, cultural, and economic purposes.

Tell me how you are using mobile revolution, and I will tell you who you are. Tell me how you are using mobile revolution, and I will tell you what future you are creating. Which future do you choose?

However, the course’s emphasis on social, economic and sustainable development will try to collate and to explore attempts at using mobile technologies for creating intentional and novel communities in general (or mobilizing existing maligned ones) for participating in their own social, economic, and sustainable development—while neutrally documenting trends in all three futures competing to use mobile ICT networks for their own development versus others’ development.

With ever cheaper mobile-networked localization and sharing, transaction costs are reduced for all kinds of organizational arrangements. Taking advantage of this, we witness fresh inventors, entrepreneurs, financiers, educators, and politicians who create a means for greater localization in citizen and consumer electronically-networked input into their organizational participation. This is versus others’ more scaled globalized uses of these same ICT electric networks creating globally aggregated input, yet demoting local citizen/consumer input (i.e., Google, Apple, Samsung, Kakao, Naver, China’s ‘great firewall,’ etc.). Some applications attempt to do both.

Empirical data shows mobile revolution is being used in these three ways. This is contrary to the assumption that greater technological mobility only is used for wider state-managed and/or supply-sided consolidation and private globalization. Instead, mobile technologies are being used by some to change the drive of development as a

whole to be more regionalized and/or community-based, representative, and sustainable. Meanwhile, others connive how to make a state-monitored world of ICT, or connive to create a globalized private empire. Collaborations and accommodations exist between these mobile ICT networks, like global private companies' platforms of Amazon.com or Facebook's Instagram that get used for encouraging regional markets of buying and selling for instance. If regional groups choose a global platform, global companies increasingly own the data for and set the terms for how even regional markets operate and access or talk to their own regional populations.

In conclusion, mobile phones and particularly smartphones en masse provide a potential for a **networked platform for distribution of cheap computing and two-way mass communication without any clear hierarchy**. This is against previous centralized, expensive computing and against previous one-way mass communication like seen in books, newspapers, radio, and television. Both computers and journalistic media were once almost completely under hegemonic control by central state agencies, public or private. Now however, a growing radical equality of participation and access to mobile ICT networks is redesigning national societies and sometimes removing past global inequities in development, while sometimes creating novel developmental inequities mentioned in the three scenarios above.

Many nations *with* mobile infrastructures and their own global cities or cluster-based digital development have fresh options for entrepreneurs and activists to redesign their social, political, and economic world on a more participative way via mobile ICT networks and platforms, even as others of course try to keep inequalities and a lack of participation intact through repressive uses of the very same mobile ICT networks and platforms.

Many nations *without* these infrastructures, without these global cities, and without their own cluster-based digital development find themselves in growing dependency relations upon larger states or global cities outside of them and become dependent on foreign global corporations. Think about Europe's Vodophone nearly dominating the mobile ICT networks of Kenya for instance.

After this short introduction and some examples, therefore it should be clear that this class explores the open future of how mobile networks and mobile platforms of millions of networked mobile users are changing social, political, and economic development. There is a variety of different social uses of mobile ICT networks to which it is being put, particularly in more underdeveloped countries and more mobile-saturated countries. We will look at both of these developmental extremes of countries as where our developmental future is changing the most in mobile revolution. (See the appendix at the end of this syllabus for more details about the mobile revolution).

In conclusion to this introduction to the course, this course aims to give you memorable ideas of fresh kinds of development patterns now possible with this ICT tool. This course employs a globally comparative view of the different places in the world employing mobile ICT networks for very different kinds of social-technological development.

Pedagogy

For pedagogy, this class is a combination of three kinds of learning: lecture, useful technical learning in this field, and ‘flipped classroom’ learning.

[1] Lectures by the professor provide the student with a knowledge base of two themes that begin to intersect: first, development theory and its modern history, and second, the technical history of an ever-growing wireless mobility and size reduction of our computerized/communication technology from the 1890s to the present (from Marconi’s wireless 2-way communication; in batteries/energy, in frequency spectrum, in types of media communicated, in ‘big data’ gathering and policy based on it, etc.). These two themes’ trends and how they came to intersect frames the later discussion of the history of each of the four categories of mobile revolutionary developments.

[2] Afterwards, there is a section about technological learning, where we learn to use MIT app inventor, an online app developer. You as well can participate in the mobile revolution technically.

[3] The ‘flipped classroom’ side of the course means students lead themselves, and do their own exciting research and presentations on what interests them about mobile revolution within each of these four categories of social life, whether presenting as individuals or as teams.

Grading Evaluation: Grading evaluation will be based on the following categories of course requirements and their percentages of the semester’s grade.

I.	Attendance and Participation	15%
II.	Mid-term (Take Home) Examination	15%
III.	Individual Assignments (4 <u>individual</u> ‘flipped classroom’ assignments, 1 per social category)	40%
IV.	Final Group Project/Paper Presentation (1 <u>group</u> assignment, choose a country and analyze its mobile development; see below)	30%

Course Requirements: Attendance/Participation, Mid-Term, Assignments, and Final Project Described

I. Attendance and Participation: Students are expected to attend class. For participation, students are expected to be aware of current events in the world of engineering and information technology, and will be called upon to contribute items of current interest. Extra credit is possible daily from good participation. (For other extra credit, see below.)

II. Mid-Term: There will be a midterm examination covering [1] basic history of developmental theories (from post WWII onward: modernization theory, dependency theory, world systems theory, early ICT and the origins of global cities, grassroots development, the bottom billion and its ‘four traps,’ the origins of virtual communities, and the locations and origins of cluster-based digital development) [2] into different strategies of ‘grassroots

community development' that were *preceding* the mobile revolution and yet were greatly *enhanced* by the mobile revolution as more technical options for its development strategy. Additionally, [3] this mid-term will include history lectures and readings about the mobile revolution's technology itself, from the 1970s to the present. This involves computing and telecommunications technologies for whom, where, and under what political economic and cultural contexts did the first technology clusters develop their decentralized 'hacker'-style labor and worker ethics.

III. Individual Assignments: Over the course of the whole semester, for assignments in each of the four 'flipped classroom' sessions,

[1] students as individuals find 'mobile revolutionary' technological uses and applications that they are interested in learning about—one for each of all four categories of 'state, science/education, consumption, and finance.' Individual students will prepare one presentation per thematic session, for a total of four presentations. [2] For full credit this discussion will have a part where you argue what aspects of your technical skill from prerequisite courses help you understand the creation of this 'app', or how you would improve it into something else with your technical skill, or what additional technical skills, software, or hardware would be required to make the idea of the 'app' better. This overview gives the individual student a good generalist feel for how the same mobile technology is freeing people to invent novel ways of thinking, acting, information sharing, and social/financial support in the four different categories of social life mentioned above. [3] Plus, individual students have to choose four different countries over the course of the semester. [4] Individual students may choose their home countries for only one section. This is to do justice to this mobile revolution as a global phenomenon, and to fix comparisons in the mind of the student. This encourages them to learn from the mobile revolutions in other countries for wider comparative inspiration from others ideas and actions.

To avoid long phrases like 'mobile revolution in politics' or 'mobile revolution in science', I use abbreviated terms in the course respectively like "MR1" and "MR2" for such issues. The following four short sentences define what it means when I say your individual assignments are based on the four areas of social life in mobile revolution. The following short definitions of these four assignments help students understand what to write about in these individual short paper projects about these four categories of state (MR1), science/education (MR2), consumption (MR3), & finance (MR4):

- "MR1" = mobile revolution in politics; exchanging and/or transmitting ****political information**** in a network society or creating politics in a different way in a network society, and how this is changing under conditions of mobile ICT networks; top down, bottom up, or both; or journalism
- "MR2" = mobile revolution in science; exchanging and/or transmitting ****information in general**** in a network society or creating information in a different way in a network society ('science, culture, and/or religion'), and how this is changing under conditions of mobile ICT networks; top down, bottom up, or both
- "MR3" = mobile revolution in consumption; exchanging ****material**** items differently in a network society or creating materials in a different way in a network society (exchanging material items is premised on the former exchange of

information as well), and how this is changing under conditions of mobile ICT networks; top down, bottom up, or both

- “MR4” = mobile revolution in finance; exchanging ****financial items**** differently in a network society or creating financial currencies in a different way in a network society, and how this is changing under conditions of mobile ICT networks. (exchange of financial instruments is premised on both information and material issues); top down, bottom up, or both

Thus, from MR2, to MR3, to MR4 build on each other, in a sense. MR2 is about trading and exchanging information and how that is changing in mobile revolution. MR3 will be about trading and exchanging material items (which rely on trading information) and how that is changing in mobile revolution. MR4 will be about trading and exchanging financial items (and how that is innately for trading material items and is innately trading information as well) and how that is changing in mobile revolution.

IV. Final Group Project: For the final project, the logic of the individual assignments are reversed in two ways.

1. Instead of an individual project, it is a group project.
2. Second, instead of presenting only about one thematic section across multiple countries, the group works together to craft ‘a country report’ on its mobile revolution, in all of a country’s four areas of social life. Other important points:
3. Choose a country that is not your native country, and as a group coordinate and divide your research on its mobile revolutionary development in all four areas of ‘state, science/education, consumption, and finance’ mediums.
4. To divide work, groups for the final project may have a minimum of two people (i.e., two people assign themselves to review two social categories each, all in the same country, and then they collate information in a presentation); or a group can have a maximum of four people (four people assign themselves to review a single social category each, all in the same country, and then they collate information in a presentation.)
5. No two groups can do the same country without my approval, so this encourages students to think about choosing their group project country as soon as possible after the mid-term.
6. If you want to do an individual final project, you should see me and explain why you prefer this, in order to get my approval.
7. For timelines and deadlines, all final project groups and country topics have to be approved by me during the weeks after the mid-term. [7a] This is so I am assured that no one is choosing their own native country, and [7b] so the group dynamics and the topic are well matched for completing such a final project. [7c] This early date of formulating the subgroups for the final project means **you can get ‘double use’ of flipped classroom experiences if you plan ahead** in your group. For example, if a group chooses Nigeria after the mid-term, each of the group’s individuals might choose after that to research Nigeria in one of their individual assignments in flipped classroom presentations as well. This helps focus most of the course’s organization toward having time to think and to research your choice of country well in advance, aided by having awareness of useful comparisons in mind for your group paper (from

each individual student's four individual assignments chosen from four different countries over the semester.)

Note on Grading Procedures of Attendance and for Assignments:

1. Attendance is required and checked each session. For full attendance, you get 1 point per day (i.e., 100%).
2. Attendance plus good participation can earn more than 1 point based on my judgment of the day. So participation is effectively extra credit.
3. If attendance earns a '1', and if any good participation can earn a bit more, obviously late attendance by students (depending on how late they are) earn less than '1'. There are two categories of 'lateness' that get less points per day.
 - a. Students who are late are unable to get the full point for attendance. Be on time. Be respectful of your fellow students who deserve an uninterrupted and focused experience.
 - b. Students who try to 'sign in and leave' are unable to get the full point for attendance. Avoid being that student who thinks they can 'leave quietly' after leaving an attendance mark. Really, come on, you would have to be a ninja to do this without attracting obvious attention. This is interruptive of your fellow students who deserve an uninterrupted and focused experience. Obviously, you can leave in the middle of the session or near the end of the session, though it will get you less credit for the day's 'attendance.'
 - i. Caveats: I'm not talking about bathroom breaks, which are fine for you to go in and out when the call of nature requires. I'm not talking about taking a phone call as well if you have to do so. Please leave the room for phone calls and return when you are done. The difference here is it is obvious when people *leave their items in class* for their own return in a minute versus people who *leave with their belongings* before the session is over.
 - ii. In short, avoid being late and avoid trying to rig your attendance sheet. If you really want "to rig" your score for improvement **there is extra credit by participation and other extra credit noted below.**^{^^}
4. There are excused absences. Contact me before the session about why you will be missing class entirely or why you will be leaving class early, or email me after your missed session or on the day of your missed session, explaining yourself.
 - a. For these situations, to get an excused absence, you require a signed note about it.
 - b. Getting an excused absence means I make your attendance average without that punishing '0', and I build your average later on a *smaller number of days* unique to you (making all your other personal attendance days more important). For instance, if you miss 2 sessions out of 25, and they are all excused absences, then I take your average out of 23/23 instead of giving you 25/25. Thus you can get excused absences yet if you do so, each of your other days now are more crucial and will count more in your attendance average than other students with their perfect attendance. Thus, an excused absence fails to give you a free '1' for your attendance score on that missed day. It

simply means that I will take your final attendance average from a smaller number of your attendance days, without that '0' in the average. For the hypothetical situation of having lots of excused absences and lots of unexcused absences, it makes unexcused absence much more costly if you have your average built from a lower number.

- c. In the scheme of things, with attendance being 15% of the total grade, and with around 25 sessions per semester, then one unexcused absence is missing $1/25$ or: $.04 \cdot .15 \cdot 100$, or roughly **0.6 point off your final average for each unexcused absence**. It can add up, so be on time and be regular in your attendance.
 - d. If you forget to talk to me before your future missed class (like when you get sick and go to the doctor instead of class or if you have some other excused absence), give me signed notes later for those acceptable reasons **that explain why** you were absent, **the date** of the absence, **and signed by someone in authority** who can testify that this is actually true. A dated and signed receipt from doctor or pharmacist would be ideal for the sick excuse, or a dated and signed note from another kind of other authority who can vouch for your location at the time. In short, excused absences are accepted for approved situations that are out of your control.
5. Using computer technology and mobile technology in the course is fine with me. However, be discreet. If I find your computer/phone activity disruptive or distracting to the class, to me, or to other students (like doing other projects, e-shopping, laughing, chatting, browsing the web or SNS, online gambling or world of warcraft, etc.) I will ask you to “go out of the class to finish or to take your phone call”, to “close the cover” if it is your laptop computer, or to “lay it upside down” on your desk if it is your tablet or mobile phone **for the rest of the session**. Repeated rudeness from a student in this way will lead to a reduction of attendance/participation points. Be respectful to others and focus in the session.
 6. Failure to complete assignments will constitute a failing grade of zero points for that exercise (F).
 - a. However, late papers and assignments will be accepted, though will result in a slow reduction of the grade depending on how egregiously late it is and depending on extenuating situations per student and per assignment.
 7. In everything above see how flexible I am. However full points are possible only by following course deadlines and being respectful in the session. Plan accordingly in the mid-term test and in individual and group projects. Observe deadlines.

The Student Accessibility Statement, the Academic Integrity Statement and the Critical Incident Management Statement can be found on the last page of the syllabus.

Assignment Grading Procedures:

Individual Assignment Grading.

Since the course covers four categories of social life, you write one short review paper and give a presentation in each section about some ‘living’ social example of civil, educational, economic, or financial development that relies on mobile technology to exist for four different countries of your choice over the course of the semester. This is preferably an example that connects to the course’s themes of discussing and understanding how mobile technology interfaces with sustainable development, widening democratic participation and deliberation, widening scientific or consumer or religious information involved in some kind of community development (charity, sharing economy, big data, consumer product information for sustainability, instant feedback to suppliers, etc.). In other words, individually you will write four short papers on four ‘development apps’ or local social projects that rely on employing mobile technology in four different countries.

Each paper should be at least 2-3 pages of review. It should be organized and informed CLEARLY with the six journalism basics in mind (‘who, what, where, when, why (for what strategies)), and how’ (with what technologies specifically: which software, which kind of programming languages, open source, proprietary software(s), database software(s), etc.). If you know these six issues before you start writing and presenting, then you have a good paper and presentation. From that information, you then have a concluding paragraph or an evaluation section: ‘is this idea or application successful, failing, or in what way do you see that it can be improved or scaled in your opinion?’ For full credit, the conclusion should have a discussion where you argue what technical skill from which prerequisite courses helps you understand the creation of this ‘app’, or how you would improve it into something else from your technical skill, or what additional technical skills, software, or hardware you know of or wish to know about—that would be required to make the idea of the ‘app’ better in your vision. First, this overview gives the individual student a good *generalist* feel for how the *same* mobile technology is freeing people to invent novel ways of thinking, acting, information sharing, and social/financial support in the four *different* categories of social life mentioned above. Second, this kind of review of the technical side of the ‘app’ does justice to your educational expertise and helps you envision how you would catalyze social change and ‘mobile revolution in development’ for yourself. You get **extra credit** if you explicitly choose an app/issue in mobile revolution that may help us toward environmental sustainability in some way.

Use a proper citation form. These papers will: fulfill ‘flipped classroom’ learning from each other; give you something formally written to reference as you talk to the class about it; and can be used for assembling information for your group projects later of course (see below). You can get more extra credit if you give a talk about your draft topic, **using your paper draft before you turn in your paper in the next session.** I do this so you can get feedback from the class and from myself on how to get a better grade before you turn in your paper. I provide suggestions in these four flipped classroom sessions though my lectures and my ongoing comments. You get inspiration and ideas from other students, so listen to their topics as well. However, it is your responsibility to

find four examples, one in each of the four categories of mobile revolution, across four different countries in the world, of which only one can be your home country.

To improve your score, remember there are exemplars of these short paper assignments on the cloud drive—from previous version of the class. Review them for what makes a good paper.

Group Assignment Grading

Follow these points for a good grade. Your final group research presentation is a country report about all four kinds of mobile and/or sustainable development applications [1] in a country that is not your own; [2a] in which all students write group names at the head of the full paper, and then [2b] will write their own names on the sections for which they were responsible or contributed toward. As a group, you assign yourselves all four categories of social life within that country. As a group, you decide who does what section(s). [2c] However, instead of just four sections, **there are six sections in the group paper:**

[1] an introductory section, employing data from these five sources at least:

Source #1:

<https://www.cia.gov/library/publications/the-world-factbook/> particularly

- a. geography (show a map of the country in your group paper)
- b. ‘government and society’
- c. demographics (describe any regionality of the demographics in the above map, or use a second map)
- d. economy (major imports and major exports; major trading import/export partners
- e. (tele)communications section, talk about fixed line and mobile phone in the country
 - e1. top down discussion of trends in telecommunications, companies providing the services, subscriber bases, bandwidth speeds of mobiles and internet; companies in operation in telecommunications in the country (whether private monopoly, competitive unregulated market, to state regulated monopolies, or state regulated competition, etc.); state infrastructure development projects, if any, etc.;
 - e2. and bottom-up data like demographics of who owns which brands of mobile phones and smartphones, and trends in that.
- f. comparisons to other countries in the introduction get a good grade

Source #2:

<https://www.akamai.com/us/en/about/our-thinking/state-of-the-internet-report/>

<https://www.akamai.com/us/en/about/our-thinking/state-of-the-internet-report/state-of-the-internet-connectivity-visualization.jsp> clip images of your country; understand trends of speeds over time for trends here

<https://www.akamai.com/us/en/about/our-thinking/state-of-the-internet-report/web-attack-visualization.jsp> understand attacks from or to the country, if applicable; understand your country comparatively;

Source #3:

<https://wearesocial.com/blog/2018/01/global-digital-report-2018> and <https://wearesocial.com/blog/2019/01/digital-2019-global-internet-use-accelerates> and be sure to comb through these presentations and clip/choose other information about your choice of country here and put that in your paper to get a good grade; understand your country comparatively here: <https://www.slideshare.net/wearesocial>; talk about social media penetration ; talk about e-shopping/m-shopping; other unique features of the country in extreme statistics there

Source #4: Two charts should be in your group paper to get a good grade:

[1] about desktop/laptop web browser share from 2009 and the most recent year for your country; plus,
[2] about mobile web browser share from 2009 and the most recent year for your country;
<http://gs.statcounter.com/browser-market-share#monthly-200901-200901-map>

Source #5:

topic of whether your country has any ‘technology clusters’ in them; you can use my PowerPoint presentations and any other charts you find on line about your country; topic of whether your country has any ‘global city’ infrastructure in it.

Source #6:

Exclusively useful for ‘MR4’ section is to have a chart of the ongoing currency rate of the country in the world market:
<https://www.xe.com/> show a free 10-year chart of the currency exchange rate of the country in the introductory section to get a good grade and so your team can get a picture of the country’s stability or instability, financially speaking.

Source #7:

<https://www.similarweb.com/apps/top/google/app-index/us/all/top-free>
Lots of free data, disaggregated by country, of the app markets from both Google Play as well as the Apple AppStore.

[2,3,4,5] then the sections about ‘state, science/education, consumption, and finance’ in the country in question introduced in the order in which your group thinks best makes sense for the country report as related to that country’s mobile development (like ‘which of the four sectors or which kind of actors might be leading the mobile developments?’ It is good to write about which sector might be the leading mobile-revolution sector in a country (or it could be more than one sector) before talking of other sectors that are either weaker, develop later in time, or in your opinion remain undeveloped; I will look for good comparisons to other countries in this sector that you learned about throughout the semester in other presentations or topics mentioned then

[6] write a general conclusion with an evaluation (that can suggest improvements or criticisms or still unknown questions). Particularly this is the section in which to mention why we might learn something from your country case as a ‘best practice’ or an idea that might be applied elsewhere. This the section to **mention overall comparisons** and/or why you think that your county’s version is best or great, or why another country’s

version is better than your chosen country's version, etc. Like comparisons in the introduction get a good grade, comparisons in the conclusion get a good grade.

[7] Each section should have at least four citations, as footnotes on the page. There should be a formal bibliography as well.

[8] **In each section, write about comparisons to other countries' mobile revolution that you learned about, in order to show how your chosen country is patterned similarly or is different/varied compared to other countries or other general patterns you have noticed. Comparisons of your chosen country with other countries as similar or different show a superior paper. Showing how your chosen country is part of a general pattern or represents a variation from a common pattern shows a superior paper.**

Following all these eight instructions will get a good score.

Extra Credit.

- I. **Extra Credit #1.** As an encouragement to create a **course record** for yourself, give me a bound copy of: (1) all your graded and returned papers and other class notes at the end of the course. If you choose to do this extra credit, I will return everything to you at the close of the semester, or you can make other arrangements. In this way, you will have a well-organized keepsake of your own course work.
- II. **Extra Credit #2.** Throughout the course, **create a list of English words and/or course concepts with their definitions** that you have learned in the course. This list should be mostly about course concepts mentioned, or a short description of any 'best practices' you admired in mobile development that you learned about in the course, instead of just novel words you learned. It should at least have 25 concepts with definitions. Authors' names related to course content can be included. This can be turned in separately or with Extra Credit #1 and bound together. So if you choose Extra Credit Option #1 as well, please put the English words and course concepts you assembled (Option #2) in the same binder with Option #1.
- III. **Extra Credit #3. Description/Reaction Papers.** Your main job in this course is to do the readings thoughtfully and to help us discuss them in class and to participate in the flipped classroom sections by your preparation and discussion. To give you extra credit for doing the readings well and to facilitate class discussion, you may write an extra short description/reaction paper at least 4 times among the articles assigned in the semester. Description/reaction papers should be at least one page, though typically 1-2 pages typed (double spaced). It can be longer if you want. They should be about one reading assignment. For the weeks you choose to do your description/reaction papers, only one should be turned

in each week, from only the choice of that week's readings to me in the class as a printed copy. Plus, if you want to get more extra credit, you can turn them in at the end of the course (or enclosed in the course packet extra credit Option #1 as well). However, if you turn it in earlier or during the semester, only turn in one per week on the readings that come due in that week. (In other words, don't read ahead and turn in several D/R papers before they are even scheduled in the course.) I expect them to be in English, well organized, and grammatically correct. However, I am not penalizing you on grammatical issues. I am only correcting it to help you improve. I am here to help you understand and improve, not to harm you. You can use description/reaction papers as notes for discussion in class—and get credit for it as well.

Though these description/reaction papers may take a variety of forms, there should be two sections in them: one more objective and one subjective. The first objective section is a required half page summary of the film or paper's argument and methods (i.e., only several paragraphs). This shows me your capacity to comprehend and then relay specific content of the article or film, objectively and cogently. The second subjective section or remainder of the reaction paper is your choice of the following. All these suggestions allow you to be more subjective:

- i. Things you don't understand;
- ii. Further comments on all or part of the reading or film;
- iii. Something you agree with;
- iv. Strengths of the film/reading;
- v. Weaknesses of the film/reading;
- vi. Something you disagree with;
- vii. How the reading relates (or doesn't relate) to personal experience, Korean examples (or if not Korean, your native country's examples), or social or technological situations in general you know about; other comparisons;
- viii. Other methods or data for approaching the same question or issue that you think might be better and why;
- ix. How the film/reading related to other films/readings—similar or vastly different—in this or in another course.

The reaction papers are (1) designed to help you understand the films/readings; (2) help you understand where you personally agree or disagree with them and why; (3) to improve your reading or listening comprehension in an exercise tied to writing practice in English; (4) *toward my understanding of your English language use capacities*; and (5) to provide myself feedback on the direction of the course in the questions or comments that you relate.

Assigned Readings:

There will be a course packet distributed digitally. There are no printed books to purchase. This digital course packet will be posted online for you to download later at a link I will provide here:

LINK HERE LATER

Course Outline

Tentative Class Schedule* [Dates are from the syllabus of Fall 2019, will be changed later]

<p>Week 1 - Class 1 T, Aug. 27</p>	<p>Part One, Introduction:</p> <p>Syllabus Review; and before Mobile Development; Wider Social and Economic Theories of Development Mostly Without Issues/Concerns of Sustainability, Community, or Subjective Quality of Life</p> <p>Introduction: Syllabus Review; Short Summaries of Development Theories: Modernization, Dependency, World Systems Theories, Global Cities (entering the Network Society via financial internationalization first), and Collier's four development "traps"; into community development from the 1960s-1970s merging into this information technology as well; from 1970s, so how a Novel Internet Helped to Spawn the Digital Development of both greater globalization via 'Global City' phenomena and localization of greater 'community development'; (Lecture)</p> <p>Topics:</p> <ul style="list-style-type: none">• Framing the Course with McGuire's Law and the growth of mobile information technology• For Two Weeks Describe the World History of Development Theories and Analysis <i>Before</i> the idea of Mobile Development expanded <i>out of</i> the phenomena of our global cities and the telecommunications of major transnational corporations <i>into our recent more distributed 'network society'</i> developments that instead of simply aim to create global empires of wealth, attempt to solve the problems of the 'trapped' and underdeveloped countries by other development models of greater 'community development' instead—by employing software applications, businesses, and other database-driven 'apps' built upon the foundation of shared and distributed networks of mobile communication technologies increasingly in everyone's hands (literally) worldwide. <p>[1] Assignment: we take official attendance on the first day through this survey form: (requirement for credit; do in the first week)</p> <p>https://goo.gl/forms/KxaQS73jv7Bg5SKi2</p> <p>[2] Assignment/Reference #1: Akamai's State of the Internet, Ongoing Publications and Other Visualizations in Real Time</p> <p>https://www.akamai.com/us/en/about/our-thinking/state-of-the-internet-report/global-state-of-the-internet-connectivity-reports.jsp</p> <p>https://www.akamai.com/us/en/resources/our-thinking/state-of-the-internet-report/#data_visualizations_tab</p>
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"Akamai's State of the Internet provides easy and interactive access to data from the quarterly report series..."

[3] Reference #2:

<http://www.oecd.org/internet/broadband/broadband-statistics/>

[4] Reference #3:

<https://wearesocial.com/blog/2018/01/global-digital-report-2018>

<https://wearesocial.com/blog/2019/01/digital-2019-global-internet-use-accelerates>

Assignment Before you Come to Class; Scan the below Links (not Memorize or Read Fully) Various 'Mobile News' and Other Points to Get the Feel For the Course's Four Different Sections: state, science/education, consumption, and finance; and to get a feel for the wide applications of the mobile revolution in development:

State

Hacking Politics: An In-Depth Look At Iceland's Pirate Party - The Reykjavik Grapevine

<http://grapevine.is/mag/feature/2015/11/19/hacking-politics/>

Iceland's Pirate Party Increases Election Poll Lead

<http://thespeaker.co/world/icelands-pirate-party-increases-election-poll-lead/>

Iceland election: Pirate Party asked to try to form government [Dec. 2016]

<http://www.bbc.com/news/world-europe-38187599>

Patreon: Support the creators you love [independent journalists included]

<https://www.patreon.com/featured>

Nigeria will get Korea's N2.4b for e-govt ability making

<http://nigeriateller.com/nigeria-will-get-koreas-n2-4b-for-e-govt-ability-making/>

Science/Education

Google Cardboard saves baby's life - CNN.com

<http://edition.cnn.com/2016/01/07/health/google-cardboard-baby-saved/>

PLOS ONE The Oligopoly of Academic Publishers in the Digital Era

<http://journals.plos.org/plosone/article?id=10.1371/journal.pone.0127502>

Stretchable Electronics Have Their Coming Out Party At CES - IEEE Spectrum

<http://spectrum.ieee.org/view-from-the-valley/biomedical/devices/stretchable-electronics-have-their-coming-out-party-at-ces>

Consumption

Trends on Tuesday: U.S. Mobile-Only Internet Users Now Outnumber Desktop-

Only Users, by Will Sullivan, May 5, 2015;
<http://www.digitalgov.gov/2015/05/05/trends-on-tuesday-u-s-mobile-only-internet-users-now-outnumber-desktop-only-users/>

[and by 2017, 66% of the world has a mobile phone now; *lesser* 50% internet penetration; and by 2017, 50% of web traffic of the world comes from mobile devices for the first time (only ~10% in 2012)]

<http://wearesocial.com/uk/blog/2017/01/digital-in-2017-global-overview>

Bioregions: Notes On A Design Agenda

<http://www.doorsofperception.com/place-bioregion/bioregions-notes-on-a-design-agenda/>

Pursuing Maathai's dream of community-led conservation - Capital News

<http://www.capitalfm.co.ke/news/2016/01/pursuing-maathais-dream-of-community-led-conservation/>

The Ten Commandments of Peer Production and Commons Economics _ P2P Foundation

<http://blog.p2pfoundation.net/the-ten-commandments-of-peer-production-and-commons-economics/2015/10/24>

Ubiquitous Commons Imagines a P2P Revolution in Rural Italy

<http://www.shareable.net/blog/ubiquitous-commons-imagines-a-p2p-revolution-in-rural-italy>

Sweden's ShareWear allows you to swap clothes for free over Instagram

<http://inhabitat.com/swedens-sharewear-allows-you-to-swap-clothes-for-free-over-instagram/>

A worldwide paradigm shift from 'sharing' to 'collaborative' economy _ LabGov

<http://www.labgov.it/a-worldwide-paradigm-shift-from-sharing-to-collaborative-economy/>

Is the Sharing Economy a Myth

<http://www.business2community.com/brandviews/relevance/sharing-economy-myth-01406364#TKoPkRYO9Kw5eg89.97>

How Africa can lead the way in the Fourth Industrial Revolution

<https://www.weforum.org/agenda/2016/05/how-africa-can-lead-the-way-in-the-fourth-industrial-revolution/>

Africa's digital revolution: a look at the technologies, trends & people driving it

<https://www.weforum.org/agenda/2016/05/africa-s-digital-revolution-a-look-at-the-technologies-trends-and-people-driving-it>

Finance

"Icelanders can now each claim \$400 worth of Auroracoin, the country's new digital currency" (same in Scotland, Greece, Lakota Tribes (USA))

<http://www.theverge.com/2014/3/25/5546192/icelanders-can-now-each-claim->

	<p>400-worth-of-auroracoin-cryptocurrency</p> <p>China's Nearly 700 Million Internet Users Are Hot For Online Finance? Forbes http://www.forbes.com/sites/melanieleest/2016/01/25/chinas-nearly-700-million-internet-users-are-hot-for-online-finance/</p> <p>Equity crowdfunding poised for takeoff http://www.koreaherald.com/view.php?ud=20160124000253</p> <p>Assignment for Next Time:</p> <p>Class time on discussion of some of these stories' themes; lecture on: So, Alvin Y. 1990. "Chapter One: Introduction: The Power of Development Theories," [pp. 11-14], "The Modernization Perspective" [pp. 17-59] in <i>Social Change and Development: Modernization, Dependency, and World-Systems Theories</i>.</p> <p>[The next few weeks are flexible in times, though in this general order.]</p>
<p>Week 1 - Class 2 Th, Aug. 29</p>	<p>Continued Lecture on, So, Alvin Y. 1990. "Chapter One: Introduction: The Power of Development Theories," [pp. 11-14], "The Modernization Perspective" [pp. 17-59] in <i>Social Change and Development: Modernization, Dependency, and World-Systems Theories</i>.</p>
<p>Week 2 - Class 1 T, Sept. 3</p>	<p>Continuing Short Summaries of Development Theories: Modernization, Dependency, World Systems (Lecture)</p> <p>Assignment for Next Time: Dependency Theory and World-Systems Theory and their Similar yet Different Developmental Recommendations</p> <p>So, Alvin Y. 1990. "The Dependency Perspective," [pp. 91-134] in <i>Social Change and Development: Modernization, Dependency, and World-Systems Theories</i>.</p> <p>VIDEO: AFRICA: The Role of Oxfam, Unicef, Live Aid in the Systematic Destabilization of African Nations http://21stcenturywire.com/2017/02/25/africa-the-role-of-oxfam-unicef-live-aid-in-the-systematic-destabilization-of-african-nations/</p> <p>Abraham, David S. 2011. <i>The Elements of Power: Gadgets, Guns, and the Struggle for a Sustainable Future in the Rare Metal Age</i>. New Haven, Connecticut: Yale University Press, excerpts.</p> <p>VIDEO: "The Real Mobile Phone Wars" (2001)- Democratic Republic of Congo, Journeyman Pictures (24:11) https://www.youtube.com/watch?v=JQIsLqkuATY</p> <p>VIDEO: "The Mineral Which Powers Your Mobile Phone Also Fuels Endless Violence in the Congo" (2009); [update on the Congo from the previous film: little has changed from 2001], Australia Broadcasting Corporation (24:14) https://www.youtube.com/watch?v=2J7efsz_Y-c [caution: shocking images;</p>

	<p>yet you should know how 'underdevelopment' is a stable context in many (instead of all) areas of raw material extraction dominated areas;</p> <p>Blaine Harden, "A Black Mud from Africa Helps Power the New Economy," New York Times, August 2001 http://www.nytimes.com/2001/08/12/magazine/the-dirt-in-the-new-machine.html</p> <p>Review: The Democratic Republic of Congo http://www.globalissues.org/article/87/the-democratic-republic-of-congo</p> <p>So, Alvin Y. 1990. "The World-System Perspective" [pp. 169-199], in Social Change and Development: Modernization, Dependency, and World-Systems Theories</p>
<p>Week 2 - Class 2 Th, Sept. 5</p>	<p>Beginnings of Digital Development in four themes: [1] from <i>Financialized Global Cities</i>, to [2] a Growing <i>Network Society</i>, and [3] a <i>Bottom Billion</i> that Missed the Boat, and [4] Now More Avidly Interested in <i>Mobile-Based Development</i>, or, "ICT4SD" (Lecture)</p> <ul style="list-style-type: none"> • History of Computers: More Economical, Smaller, Mobile, to Networked: • Places that Got Them First: Financialized Global Cities: Global Cities, the Space of Flows, and then Creating the Global Problem of the "Trapped" Undeveloped Bottom Billion, Leads into Grassroots Development (ongoing over several sessions) <p>Assignment:</p> <p>Sassen, Saskia. 2001. "Chapter One: Overview," [pp. 3-15] and "Part One: The Geography and Composition of Globalization" [pp. 19-36, 37-64] and Conclusion [pp. 329 – 363] in <i>The Global City: New York, London, Tokyo</i>; Second Edition.</p>
<p>Week 3 - Class 1 T, Sept. 10 POLAND</p>	<p>Assignment:</p> <p>Lecture, Sassen, continued.</p> <p>Guest Lecture by Dr. Anthony Pennings, his research/view of the world that ICT cities made, with emphasis on financial changes just like Sassen</p>
<p>Week 3 - Class 2 Th, Sept. 12</p>	<p>Holiday – Chuseok – No Class</p>
<p>Week 4 – Class 1 T, Sept. 17</p>	<p>1. Collier, Paul. 2007. <i>The Bottom Billion: Why the Poorest Countries Are Failing and What Can Be Done About It</i>. Oxford, England: Oxford University Press. [a review of "The Four Traps": the conflict trap, the natural resource trap, landlocked with bad neighbors, bad governance in a small country, on missing the boat and marginalization in a global networked economy, and</p>

	<p>problems with 'aid to the rescue?'], excerpts [<u>lecture only, reading optional</u>]</p> <p>2. Collier, Paul. 2008. "The Bottom Billion," at TED (16 min.) https://www.ted.com/talks/paul_collier_shares_4_ways_to_help_the_bottom_billion</p> <p>VIDEO: "The Mineral Which Powers Your Mobile Phone Also Fuels Endless Violence in the Congo" (2009); [update on the Congo from the previous film: little has changed from 2001], Australia Broadcasting Corporation (24:14) https://www.youtube.com/watch?v=2J7efsz_Y-c [caution: shocking images; you should know what is happening in the 'bottom billion' and why 'regular national development' is so hard in some countries. Unlike the other film on the Congo (associated with the dependency theory readings, above, that concentrates on the raw material economy only, this film analytically talks about wider sociological issues. It is a good film for this session because it illustrates all four of Collier's 'traps', talking directly about them. Can you identify where the film discusses all four traps? You require images and stories about one of these 'trapped' areas to understand why such contexts are reaching hopefully (or desperately!) toward 'mobile development' due to being weak states due to the interaction of many problems that Collier's book discusses.)</p> <p>Optional Background readings, unenclosed on cloud drive:</p> <ul style="list-style-type: none"> • Richard Sandbrook, Edelman, Heller, Teichman. 2006. <i>Social Democracy in the Global Periphery: Origins, Challenges, Prospects</i>. New York City, New York: Cambridge University Press. Excerpts. [on Mauritius, Kerala/Indian province (near Bangalore), Costa Rica, and Chile [and somewhat a trend in South Korea, mentioned throughout; though without a specialist chapter in the book about that] • Eva Paus. 2005. <i>Foreign Investment, Development, and Globalization: Can Costa Rica Become Ireland?</i> "This book engages the question, hotly debated among theorists and policymakers alike, of how a developing country's pursuit of foreign direct investment (FDI) affects its development prospects in a globalized world. Can small latecomers to economic development use high-tech FDI to rapidly expand indigenous capabilities, thus shortcutting stages of the industrialization process? What conditions, economic and non-economic, must be met for this strategy to succeed? Using the cases of Ireland and Costa Rica, the author shows how the dynamics of the FDI-development nexus have changed over time, rendering problematic Costa Rica's attempt, and those of other latecomers, to replicate the Celtic Tiger's [Ireland's digital development] success story. • Arora, Ashish and Alfonso Gambardella 2005. <i>From Underdogs to Tigers: The Rise and Growth of the Software Industry in Brazil, China, India, Ireland, and Israel</i>. Oxford University Press.
<p>Week 4 – Class 1 Th, Sept. 19</p>	<p>Castell's Informationalism and the Growing Networked Mobility in Communication: [1] A Growing Network Society Beyond the Original Financial 'Command and Control' Digital Sector of Major Global Cities; Castell's "Informationalism" and [2] a Growing Concern with Environmentally Sound Development; and [3] longer history of ever cheaper and more mobile</p>

communication technologies out of which it comes from the beginnings of wireless in the 1890s.

Assignment on Growing Information-Led Development and "Informationalism":

1. Editors preface by Manuel Castells, in *The Network Society: A Cross-cultural Perspective*, ed. Manuel Castells (2004); on avoiding technological determinism
2. Chapter One. "Informationalism, Networks, and the Network Society: A Theoretical Blueprint, by Manuel Castells, in *The Network Society: A Cross-cultural Perspective*, ed. Manuel Castells.
3. Desjardins, Jeff. 2018. "How Long Does It Take to Hit 50 Million Users?" Visual Capitalist (June 8) <http://www.visualcapitalist.com/how-long-does-it-take-to-hit-50-million-users/>

HISTORY OF MOBILE PHONES

The History of the Mobile Phone, By Washington Post Staff (September 9, 2014) https://www.washingtonpost.com/news/the-switch/wp/2014/09/09/the-history-of-the-mobile-phone/?utm_term=.2b52dccfd15a

History of Mobile Cell Phones | The First Cell Phone To Present Time <https://bebusinesssed.com/history/history-cell-phones/>

Harris, Malcolm. 2017/2018. "Revolutionary Objects: The Surprising Origin of the Cell Phone The technology has its roots in 1950s Soviet Russia," *Pacific Standard* <https://psmag.com/magazine/cellphone-revolutionary-objects>

Олег Измеров. *Oleg Izmerov*. "DOMESTIC MOBILE PHONES of the 50s: ordinary sensation of the space age," [On Leonid Kupriyanovich in the USSR and others in the USA in the 1930s-1940s] <http://www.izmerov.narod.ru/okno/index.html> (use Google Translate)

Video Documentary, Cloud Drive: National Geographic, "80's Greatest Gadgets" The 1980s was the first generation to experience mobility and digitality in all consumer media gadgets; the documentary interviews older people of that teen generation of the 1980s (now in their 40s and 50s) looking back on these gadgets, and shows clearly culture changing with these *growing network effects of millions of people experiencing mobility in all existing separate media* simultaneously, for the first time.

Continued, Lecture, Castells, mobile phone history; environmental inequalities

1. Pellow, David Naguib. "Chapter 7: Environmental Racism: Inequality in a Toxic World," 147-164. In *The Blackwell Companion to Social Inequalities*, eds., Mary Romero and Eric Margolis.

	<ol style="list-style-type: none"> 2. Robinson, Deborah M. "Environmental Racism: Old Wine in a New Bottle," http://www.wcc-coe.org/wcc/what/jpc/echoes/echoes-17-02.html 3. Videos on environmental racism and global slums, negative and positive (positive being how people start to use mobile technology in 'underdeveloped' areas to build applications for their own developmental concerns); can watch ahead: "Shadow Cities" and "The Power of the Informal Economy" <ul style="list-style-type: none"> http://www.ted.com/speakers/robert_neuwirth http://www.ted.com/talks/robert_neuwirth_on_our_shadow_cities http://www.ted.com/talks/robert_neuwirth_the_power_of_the_informal_economy <ol style="list-style-type: none"> a. Optional films on environmental racism: <ol style="list-style-type: none"> a. "The Quest for Environmental Justice [as] Human Rights," by Dr. Robert Bullard 'father of environmental justice research' (introduced by Dr. William Freudenburg) https://www.youtube.com/watch?v=SYVvbs6XsNw b. Optional: "Which Came First People or Pollution?," by Dr. Paul Mohai, founder of the Environmental Justice Program at the University of Michigan- Ann Arbor; he discusses his recent research on racial and income disparities in the distribution of hazardous wastes sites in the U.S.] https://www.youtube.com/watch?v=Ovpzdi2whcM
<p>Week 5 – Class 1 T, Sept. 24</p>	<p>The Least Connected vs. the Most Connected, three part lecture, Part One:</p> <p>Beyond the Financial Sector of Global Cities into Mobile Development: The Least Connected and Most Degraded; the Most Connected and Equally Degraded; How Do we Move Them to Participation and Sustainability? Discuss three kinds of growing network societies; [1] grass roots development without ICT from the 1950s onward; [2] global cities ICT in first expensive networks in First World areas, [3] more grass roots ICT networks in First World Countries</p> <p>Discuss Texts and their merging movements: [1] Environmental Underclasses' Communities, [2] Attempts at Grassroots Development Regionalism, [3] Countercultural Virtual Communities, and [4] Sustainability Concerns</p> <ol style="list-style-type: none"> 1. The Least Connected, "the Wretched of the Earth" and the Rise of Grassroots Development: <ol style="list-style-type: none"> a. people developing their own developmental community projects (pre-existing or novel) particularly if states fail to do so, b. or states repress them, or c. particularly if such communities are passively 'trapped' as Collier argues, by living within weak/corrupt non-developmental states; he

argues corruption of the state itself is one of four 'internal' causes of lack of development in the first place, instead of the state being as in other places comprised of an organizational elite capable of (or interested in) aiding its national people.

- d. Issues of 'fragile states' will be discussed, as well as disaster risk reduction that may be aided by mobile revolution.
- e. Korten 1980 "Community Organization and Rural Development? A Learning Process Approach, *Public Administration Review*, academic article
- f. other Korten article is optional, a book chapter from 1990 entitled, "Chapter 10: From Relief to People's Movement", in Getting to the 21st Century: Voluntary Action and the Global Agenda.
- g. Healy 1996 "LaKhochalita's Export Saga", in Grassroots Development.
- h. Bioregions: Notes On A Design Agenda
<http://www.doorsofperception.com/place-bioregion/bioregions-notes-on-a-design-agenda/>

2. The Most Connected:

- a. Turner, Fred. 2005. "Where the Counterculture Met the New [Information] Economy: The WELL and the Origins of Virtual Community," *Technology and Culture* 46 (July): 485-512.
- b. Bauwens, Michel. Network forms emerging now & changing the world, "Community and the Commons"
<https://www.youtube.com/watch?v=iCp2Vt-RqEE>
- c. (Reviewing the United States, Finland, South Korea) The First Clusters, Technically, Organizationally, and Materially (the United States; Finland; South Korea) Assignment: The Cultures of the First Clusters ; Chapter 2: "Institutional Models of the Network Society: Silicon Valley and Finland," by Pekka Himanen and Manuel Castells, in *The Network Society: A Cross-cultural Perspective*, ed. Manuel Castells (2004)

Assessment – Take-Home Mid-term Exam; due Tuesday, Oct. 1

The exam tests the student's knowledge of the history of world development into mobile development.

Week 5 -
Class 2
Th, Sept. 26

The Least Connected vs. the Most Connected, three part lecture, Part Two:

Beyond the Financial Sector of Global Cities into Mobile Development: The Least Connected and the Most Connected; How Sustainable is Digital Development So Far? From Global Cities, to Cluster Cities, to a merging of both in a 'spiky' world; into mobile development? How can the least connected contribute?

The Most Connected (Reviewing the United States, Finland, South Korea), continued

The First Clusters, Technically, Organizationally, and Materially (the United States; Finland; South Korea)

Assignment: The Cultures of the First Clusters

1. Chapter 2: "Institutional Models of the Network Society: Silicon Valley and Finland," by Pekka Himanen and Manuel Castells, in *The Network Society: A Cross-cultural Perspective*, ed. Manuel Castells (2004)
2. James Larson and Myung Oh, Chapter 1 and 2 in "Digital Development"; Chapter 6 on Songdo and "Ubiquitous Cities" (now known as 'smart cities')
3. John Perry Barlow, Text: A Declaration of the Independence of Cyberspace (1996) <https://projects.eff.org/~barlow/Declaration-Final.html> ; (Barlow supposedly died in his sleep, January 2018.)
4. Levy, Stephen. 2010. *Hackers: Heroes of the Computer Revolution*, excerpts. Skim what you want.
5. Before and During Noyce: Silicon Valley In the Beginning (Part One of Five) Narrated by Leonard Nimoy (& really important interview with Steve Jobs on his hacking career) <https://www.youtube.com/watch?v=ntfAPJInV6c> (24:00)
6. Extended on Noyce: Podfather: - Robert Noyce and the Rise of Silicon Valley (2009) [1:05:35] <https://www.youtube.com/watch?v=k0KbxHdkiFw>
7. Post-Noyce: "Interviews: The Rise of Silicon Valley" <https://www.youtube.com/watch?v=VLI10kUi-V4> (deceptively entitled "Podfather" on YouTube, though it is really the different film of 1970s-1980s interviews, called "The Rise of Silicon Valley; interviews of people in the second generation of Silicon Valley after Noyce.)
8. The Global Cities Where Tech Venture Capital Is Concentrated (2016) <https://www.theatlantic.com/technology/archive/2016/01/global-startup-cities-venture-capital/429255/> The Bay Area and large U.S. East Coast metros dominate. "San Francisco, San Jose, Boston, New York, Los Angeles, and San Diego—account for roughly 45 percent of total global

venture-capital investment.”

9. Florida, Richard. 2005. “The world is spiky: Globalization has changed the economic playing field though hasn’t leveled it” (4 pages)
<https://www.theatlantic.com/past/docs/images/issues/200510/world-is-spiky.pdf> (George Mason U. professor)
10. Mark Muro and Bruce Katz. 2010. “The New “Cluster Moment”: How Regional Innovation Clusters Can Foster the Next Economy” (short read on concept of cluster-led development
<https://www.brookings.edu/research/the-new-cluster-moment-how-regional-innovation-clusters-can-foster-the-next-economy/>)
11. Zeng, Douglas Zhihua. 2011. “How Do Special Economic Zones and Industrial Clusters Drive China’s Rapid Development?”
<http://documents.worldbank.org/curated/en/310891468018256346/pdf/WPS5583.pdf> (53 pages, charts)
12. Florida, Richard. 2015. The World’s Leading Startup Cities
<https://www.citylab.com/life/2015/07/the-worlds-leading-startup-cities/399623/> “gravitating to more energized urban centers, and away from their traditional locations in suburban office parks”
13. The top 15 Internet of Things cities in the world (2015)
<https://iot-analytics.com/top-15-internet-of-things-cities/>
14. Dishman, Lydia. 2016. The Best Global Cities For Working In Tech (2016)
“Scoring cities by commute times, cost of living, available funding, and other factors reveals the top tech hubs in the world.”
<https://www.fastcompany.com/3061460/the-best-global-cities-for-working-in-tech>
15. VIDEO: Why are startups leaving Silicon Valley? 2017 | CNBC Explains (5 min; from 2016 most tech ‘unicorns’ outside the USA; software led development in a “network society” spreading around the world in a computer/internet saturated world—for many)
<https://www.youtube.com/watch?v=d62AWj6xsWw>
16. Tech Talent: Map of the UK’s digital clusters (2016)
<http://www.bbc.com/news/technology-37380696>
17. VIDEO: Near Hong Kong, the Shenzhen cluster, China: Shenzhen: The Silicon Valley of Hardware (Full Documentary; 2016) | Future Cities | WIRED [history: China’s policy of ‘clustering’ from Deng Xiaoping in 1979, setting up ‘special economic zones’ open to global development/capital and a lot of ‘bottom up’ interaction with this developing global network society and with the bottom up desire of some Chinese for greater freedom in such zones; film features “open source hardware” standards, the ‘maker movement,’ and the ongoing widening of innovation that is already bypassing Shenzhen for other places in this ‘world system’ style

	<p>dynamics of mobile technologies now, etc.]; 1:07:50 min.] https://www.youtube.com/watch?v=SGJ5cZnoodY</p> <p>18.VIDEO: Environmental inequality: north of Shenzhen, the underside of Shenzhen cluster: China accepts the world's "e-waste" (electronic waste, very toxic to separate) here for processing as well; "Exporting Harm: The High-Tech Trashing of Asia", A powerful documentary about the dumping of toxic computer wastes on developing nations, specifically at Guiyu, China. https://www.youtube.com/watch?v=yDSWGV3jGek (23 min)</p> <p>19.ToxicCity: life at Agbobloshie, the world's largest e-waste dump in Ghana https://www.youtube.com/watch?v=mleQVO1Vd1I (17 min)</p> <p>20.The 2017 Global Startup Ecosystem Report http://www.urenio.org/2017/03/23/2017-global-startup-ecosystem-report/</p> <p>21.http://bigthink.com/endless-innovation/mckinsey-maps-the-worlds-innovation-clusters</p> <p>22.http://www.clustermapping.us/</p> <p>23.Discovery Channel - The Secret History Of Hacking (2009) [50 min.] https://www.youtube.com/watch?v=PUf1d-GuK0Q</p> <p>24.History of Gnu, Linux, Free and Open Source Software (Revolution OS) [1:25:00] https://www.youtube.com/watch?v=vjMZssWMweA</p> <p>25.The toxic legacy of Silicon Valley and potential solutions like applications of biomimicry design. Optional Film: "Biomimicry," Author Janine Benyus, 20 min. each: http://www.ted.com/talks/janine_benyus_shares_nature_s_designs (2005) http://www.ted.com/talks/janine_benyus_biomimicry_in_action (2009)</p> <p>Discuss Texts</p>
<p>Week 6 – Class 1 T, Oct. 1</p>	<p>Take-Home Mid-term Exam Due</p> <p>The Least Connected vs. the Most Connected, three part lecture, Part Three:</p> <p>The Least Connected, Revisited, Now Under Conditions of Mobile Technology: Beyond the Financial Sector of Global Cities into "Bottom Billion" Mobile Development? This three lecture series (over the past three sessions) conceptualized a short history, in order, of:</p> <p>[1] the global city technology clusters (ex., San Francisco Bay), then [2] semi-periphery state-supported technology clusters (ex. Finland; Russia, Korea), then increasingly [3] the decentralized globalization of technology clusters increasingly [3a] which is becoming outside the aegis and support of even global city-based</p>

	<p>capital and [3b] which is outside 'permission' of even state supported development. This is the mobile technology development for the 'bottom billion': on their own desired terms. These groups are in countries 'left behind' in global development so far (and are even the people left behind in their country as their country developed) who have been repressed from global economic development and/or social development (education, democracy, civil rights) for over 50 years. Can mobile development help them?</p>
<p>Week 6 – Class 2 Th, Oct. 3</p>	<p>Holiday – Korean National Foundation Day – No Class</p>
<p>Week 7 – Class 1 T, Oct. 8</p>	<p>Holiday – University Adjustment Day - No class</p>
<p>Week 7 – Class 2 Th, Oct. 10</p>	<p>Part Two: The Rest of the Course is More Student and Team Driven: Four Sections Organizing a Flipped Classroom for Group Based Learning and Design Discussions, to be Capped with the Student's Final Project Paper and/or Group Presentation About a Foreign Country's Mobile Development (Not Their Own)</p> <p>For the following four sections of social life (and thus the course's next four sections), students as a group identify a mobile app that draws upon the values of mobility and/or sustainability (hopefully both) in that section of social life, and report on its intersections of big data, mobile development delivery, and sustainability. This is their review, critique, or even suggestions for improvement and design.</p> <p>DISTRIBUTED OVER REMAINING WEEKS, the four sections of social life are:</p> <p>[1] social, political or civic development; [2] educational self-learning apps; [3] entrepreneurship and businesses (material issues) and [4] finance (financial markets and digital currencies). These four areas fill the majority of the remaining sessions with a combination of lecture and/or flipped classroom reports by student groups about mobile and/or sustainable applications. These four thematic areas are something all countries would share, though are organized in different ways depending on the case.</p> <p>Assignment: Section 1 of 4: State, politics, social movements, and journalism changes</p> <p>PPT/Lecture: What "Mobile Revolution in Development, Politics" ("MR1") means: 'top down', 'bottom up', and 'journalism' in the middle; examples; the rubric for short papers, etc. This can include voting, the content of media (mobile TV, magazines, news, newspapers, electronic-only journals, etc.</p> <p>VIDEO: "The net is mightier than the sword" James Corbett TEDxGroningen (11 min); 2014 https://youtu.be/jOeAa6Ye4dc</p> <p>VIDEO Pol.is; vTaiwan; UK Corbyn's Direct Democracy ideas (10 min); 2016</p>

<https://pol.is/gov> & <https://youtu.be/09Lqj5lazKM>

**MR1: Section 1 of 4: Mobile Revolution in Politics:
'Top-Down' State politics and administration, and 'Bottom-Up' social
movements and journalism changes (exchanging and transmitting
political, administrative and journalistic information is changing),
continued**

Regional hegemony: "A Declaration of the Independence of Cyberspace," 1996: "Governments of the Industrial World, you weary giants of flesh and steel, I come from Cyberspace, the new home of Mind. On behalf of the future, I ask you of the past to leave us alone. You are not welcome among us. You have no sovereignty where we gather. We have no elected government, nor are we likely to have one, so I address you with no greater authority than that with which liberty itself always speaks. I declare the global social space we are building to be naturally independent of the tyrannies you seek to impose on us. You have no moral right to rule us nor do you possess any methods of enforcement we have true reason to fear. Governments derive their just powers from the consent of the governed. You have neither solicited nor received ours. We did not invite you. You do not know us, nor do you know our world. Cyberspace does not lie within your borders...."

"...We are creating a world that all may enter without privilege or prejudice accorded by race, economic power, military force, or station of birth. We are creating a world where anyone, anywhere may express his or her beliefs, no matter how singular, without fear of being coerced into silence or conformity. Your legal concepts of property, expression, identity, movement, and context do not apply to us. They are all based on matter, and there is no matter here. Our identities have no bodies, so, unlike you, we cannot obtain order by physical coercion. We believe that from ethics, enlightened self-interest, and the commonweal, our governance will emerge. Our identities may be distributed across many of your jurisdictions. The only law that all our constituent cultures would generally recognize is the Golden Rule. We hope we will be able to build our particular solutions on that basis. But we cannot accept the solutions you are attempting to impose...."

"You are terrified of your own children, since they are natives in a world where you will always be immigrants. Because you fear them, you entrust your bureaucracies with the parental responsibilities you are too cowardly to confront yourselves. In our world, all the sentiments and expressions of humanity, from the debasing to the angelic, are parts of a seamless whole, the global conversation of bits. We cannot separate the air that chokes from the air upon which wings beat...[Y]ou are trying to ward off the virus of liberty by erecting

guard posts at the frontiers of Cyberspace. These may keep out the contagion for a small time, but they will not work in a world that will soon be blanketed in bit-bearing media. Your increasingly obsolete information industries would perpetuate themselves by proposing laws, in America and elsewhere, that claim to own speech itself throughout the world. These laws would declare ideas to be another industrial product, no more noble than pig iron. In our world, whatever the human mind may create can be reproduced and distributed infinitely at no cost. The global conveyance of thought no longer requires your factories to accomplish. These increasingly hostile and colonial measures place us in the same position as those previous lovers of freedom and self-determination who had to reject the authorities of distant, uninformed powers. We must declare our virtual selves immune to your sovereignty, even as we continue to consent to your rule over our bodies. We will spread ourselves across the Planet so that no one can arrest our thoughts. We will create a civilization of the Mind in Cyberspace. May it be more humane and fair than the world your governments have made before." - John Perry Barlow, 1996

regional hegemony: "We are 21st-century citizens, doing our very best to interact with 19th century-designed institutions that are based on an information technology of the 15th century." - Pia Mancini, Argentinean inventor of 'Democracy OS', 2014

State hegemony: China Assigns Every Citizen A 'Social Credit Score' To Identify Who Is And Isn't Trustworthy; Country Determines Your Standing Through Use Of Surveillance Video, Plans To Have 600 Million Cameras By 2020 <https://newyork.cbslocal.com/2018/04/24/china-assigns-every-citizen-a-social-credit-score-to-identify-who-is-and-isnt-trustworthy/>

Assignment:

Bottom up: Mancini, Pia. 2014. "How to Upgrade Democracy for the Internet Era,"

https://www.ted.com/talks/pia_mancini_how_to_upgrade_democracy_for_the_internet_era#t-148748 (13:24) "Pia Mancini and her colleagues want to upgrade democracy in Argentina and beyond. Through their open-source mobile platform [Democracy OS] they want to bring citizens inside the legislative process, and run candidates who will listen to what they say."

Barlow, John Perry. 1996. "A Declaration of the Independence of Cyberspace," <https://www.eff.org/cyberspace-independence>

Top Down and bottom up: Noveck, Beth. 2012. "Demand a More Open-Source Government," (17:16)

https://www.ted.com/talks/beth_noveck_demand_a_more_open_source_government#t-59393 Lawyer Beth Noveck was hired by the Obama Administration in

2009 as head of the "Open [E-]Government" Initiative.

Top down only: Right2vote from India; <https://right2vote.in>
"How much India spends on a Lok Sabha election?" <https://right2vote.in/much-india-spends-lok-sabha-election/> "Many people would react, even if cost of Lok Sabha election is Rs. 30,000 crores [30,000,000,000 rupees, or \$1.9 Billion dollars], [by saying] we need democracy and we cannot wish away this cost. The fact is – elections can be held at less than 1/10th the cost with the help of mobile voting. With mobile voting people would be able to vote from anywhere directly from their mobile and would not have to waste time and effort to visit a booth...Other benefits include no need to declare holiday on election day, no need of months long election code of conduct and biggest of all – higher voter participation leading to better selection of leaders. We at Right2Vote Infotech P Ltd, specialize in providing mobile voting platform for elections and have technology to authenticate voters via Aadhaar [the Indian state ID] over mobile. We can guarantee that the whole election can be held in less than 1/10th the cost."

Agarwal, Surabhi. 2017. "Right2Vote wants funds to take its tech international" <https://economictimes.indiatimes.com/small-biz/startups/right2vote-wants-funds-to-take-its-tech-international/articleshow/60372114.cms> "Right2Vote, a two year startup, which aims to provide online real-time voting through various authentication means, including Aadhaar, is planning to go international. The startup already works with various corporates and institutional bodies, helping them during shareholder voting as well as general body elections.... Apart from its international plans, Right2Vote has set its eyes on the 2019 General elections. "Imagine if all the NRIs or the Army folks could vote, what kind of participation would it lead to," said Gutgutia. He added that as a ground building measure, the firm has already started conversations with various state governments and also the office of the election commission of India."

Chávez, Aída. 2019. "New Bernie Sanders App Democratizes Organizing – and Panics People Unfamiliar With Organizing," *The Intercept* <https://theintercept.com/2019/04/29/bern-bernie-sanders-organizing-kickoff-bern-app/>

Top down: Chen, Lulu Yilun. 2018 "Tencent's Ma Unveils WeChat Travel Plan for China, Hong Kong Bay Area," *Bloomberg* (June 6) <https://www.bloomberg.com/news/articles/2018-06-06/tencent-s-ma-unveils-wechat-travel-plan-for-china-h-k-bay-area>

Top Down: China Assigns Every Citizen A 'Social Credit Score' To Identify Who Is And Isn't Trustworthy; Country Determines Your Standing Through Use Of Surveillance Video, Plans To Have 600 Million Cameras By 2020 <https://newyork.cbslocal.com/2018/04/24/china-assigns-every-citizen-a-social-credit-score-to-identify-who-is-and-isnt-trustworthy/>

Top Down: NSA Whistleblower Bill Binney, 30 year veteran of the NSA: [US] Government [Illegally] Collecting Everything You Do [without a difference from

China's 'social credit' program, except US may be worse as it hides Americans 'social credit' scores.] <https://www.youtube.com/watch?v=SjHs-E2e2V4> (27:02)

Chapter 15, Networked Social Movements: Global Movements for Global Justice, by Jeffrey S. Juris, in *The Network Society: A Cross-cultural Perspective*, ed. Manuel Castells (2004).

Chapter 16: "From Media Politics to Networked Politics: The Internet and the Political Process," by Araba Sey and Manuel Castells

Skim Other Files I Used in Lecture:

Brady et al. 2017. Emotion Shapes Diffusion of Moralized Content in Social Networks. *Proceedings of the National Academy of Sciences* (PNAS) <https://www.researchgate.net/publication/317947723> Emotion shapes the diffusion of moralized content in social networks cloud drive as well

Bradshaw and Howard. 2017. *Troops-Trolls-and-Troublemakers: A Global Inventory of Organized Social Media Manipulation*. Computational Propaganda Research Project. University of Oxford. (on cloud drive, 37 pages)

Lin, Belle. 2018. Amazon's Accent Recognition Technology Could Tell the Government Where You're From," *The Intercept* (November 15 2018) <https://theintercept.com/2018/11/15/amazon-echo-voice-recognition-accents-alexa/> "You're basically installing a microphone for the government to listen in to you in your home."

Farrall, Kenneth. 2012. "Online Collectivism, Individualism and Anonymity in East Asia." *Surveillance & Society* 9(4): 424-440. More information: <http://www.surveillance-and-society.org> (on cloud drive as well)

Anonymous, 2011. "5 Online Tools For Activists, By Activists" <https://mashable.com/2011/07/15/online-tools-activism/> [Crowdvoice, SuKey, Off the Record Messaging, Crabgrass, Pidder]

Madison, Samantha. 2017. "How Social Media Has Changed the Way Political Movements Organize," *Observer-Dispatch* [Utica, N.Y.; January 10, 2017] <http://www.govtech.com/social/How-Social-Media-Has-Changed-the-Way-Political-Movements-Organize.html> (Accessed: Oct. 30, 2018)

Lopes, Amanda Rohr. 2014. "Impact of Social Media on Social Movements - New Opportunity and Mobilizing Structure," in cloud drive under "Lopes 2014" (22 pages)

Greenberg, Andy. 2016. "Meet Moxie Marlinspike, the Anarchist Bringing Encryption to All of Us," *Wired* <https://www.wired.com/2016/07/meet-moxie-marlinspike-anarchist-bringing-encryption-us/>

Belair-Gagnon, Valarie, et al. 2016 "How Foreign Correspondents Use Chat Apps to Cover Political Unrest"

https://www.cjr.org/tow_center_reports/foreign_correspondents_chat_apps_unrest.php/ full paper at this link now on the cloud drive under: "Belair-Gagnon, Valerie, et al. 2016. "New Frontiers in Newsgathering..." (55 pages) [Belair-Gagnon, Valerie and Colin Agur and Nicholas Frisch 2016 "New Frontiers in Newsgathering - How Correspondents Use Chat Apps to Cover Political Unrest"]

Bowcott, Owen. 2017. "Turks detained for using encrypted app 'had human rights breached', "Legal opinion published in UK argues that the arrest of 75,000 suspects, primarily for downloading ByLock app, is illegal"

<https://www.theguardian.com/world/2017/sep/11/turks-detained-encrypted-bylock-messaging-app-human-rights-breached>

Coffman, Nick. 2018 "The best and worst encrypted messaging and chat apps," (<https://thenewsrep.com/108733/the-best-and-worst-encrypted-messaging-and-chat-apps/> "Editor's note: This article is the fourth in a series focusing on the best encrypted apps and services available. Content has been provided by an anonymous security and privacy professional. Accessed Oct. 30, 2018) [Wire, Signal, MySudo]

All you need to know about looking for the best encrypted communication apps and services (Part I)

<https://thenewsrep.com/108730/all-you-need-to-know-about-looking-for-the-best-encrypted-communication-apps-and-services-part-i/>

What Should You Look for in an Encrypted Communication App/Service?

<https://thenewsrep.com/108773/all-you-need-to-know-about-looking-for-the-best-encrypted-communication-apps-and-services-part-ii/>

Coffman, Nick. 2018. <https://thenewsrep.com/108732/the-best-and-worst-encrypted-email-apps-and-services/>

Related Videos for MR1, continued:

Nairobi-based Juliana Rotich, cofounder of the open-source software Ushahidi. 2008.

https://www.ted.com/talks/juliana_rotich_meet_brck_internet_access_built_for_africa (9:30)

VIDEO: Jon Gosier. 2015. "The problem with 'trickle-down techonomics'" (6:04) https://www.ted.com/talks/jon_gosier_the_problem_with_trickle_down_techonomics

TED Fellow Jon Gosier wins \$150,000 Knight News Challenge Mobile grant, Posted by: Kate Torgovnick May (1-18-2013), <https://blog.ted.com/ted-fellow-jon-gosier-wins-knight-news-challenge-mobile-grant/> (1 min video explanation of his mobile app named "Abayima...awarded a \$150,000 grant from the Knight News Challenge, which funds innovative projects designed to get information to all corners of the globe. While smartphones may be the norm in the West, most mobile phone users in the world — about 4 billion of them, to be specific — use simpler phones, often called "feature phones," that don't have a lot of storage memory, and can't be used when a phone signal isn't available. [By 2018, 4 billion smartphones worldwide.] Abayima is an open-source application that turns a SIM card into a

	<p>storage device, using every inch of the limited memory available on a standard SIM. This means that a cheap feature phone can be used as an e-reader, for instance. And that, in locations where communication networks have been compromised or are under surveillance, journalists can communicate with sources safely using good old "sneakernet," sharing information hand-to-hand via a small SIM chip."</p> <p>VIDEO The Corbett Report. 2018. "The Weaponization of Social Media" (15:57) https://d.tube/#!/v/corbettreport/kqn54tmc</p>
<p>Week 8 – Class 1 T, Oct. 15</p>	<p>Continued, and Lecture on First Instances of Political Campaigns in USA using social media and networked internet and the changes it has created since 2004.</p>
<p>Week 8 – Class 2 Th, Oct. 17</p>	<p>Beginnings of Flipped classroom:</p> <p>OK, class! Show how people are solving these problems with a few apps, or solve all these problems with a few apps yourself! (only slightly kidding...)</p> <p>Basic Technological Familiarity Useful for the Rest of the Course</p> <p>Introduction to MIT App Inventor</p> <p>http://www.appinventor.org/content/CourseInABox/Intro/Setup</p> <p>to run it over the web emulator, go here: http://ai2.appinventor.mit.edu/#4879462198149120</p> <p>I think this requires the use of your Stony Brook (Google) account (as it is currently run by MIT, though was given to them by Google, who invented it.) Since SUNY uses Google for all our emails, I don't see that there is a problem. If they ask you to fill out a survey if you install something, I recommend rejecting it, as they say in the instructions they will sell your information to third parties.</p> <p>So either use [1] laptop web emulation or [2] connect phone via USB to computer options.</p> <p>***Come prepared with this downloaded on your mobile phone or downloaded on your laptop, which you bring to class.***</p> <p>Extra credit for those who demonstrate an 'app' you made work in class Wednesday by the end of the class! You can use the 'hello purr' app they use as the demo, or you can use an app you have invented yourself in the past. However, it has to work for the extra credit, instead of just be a concept.</p> <p>There are three setup options: http://appinventor.mit.edu/explore/ai2/setup though I recommend the emulator for rationales in the attachment on the cloud</p>

	<p>drive under the 'MIT app inventor' folder, or attached, below.</p> <p>Related/recommended:</p> <p>Strange, Adario. 2018. "Meet the 8-Year-Old ARKit Developer Who Just Uploaded Her First Augmented Reality App to Apple's App Store" (March 31) https://mobile-ar.reality.news/news/meet-8-year-old-arkit-developer-who-just-uploaded-her-first-augmented-reality-app-apples-app-store-0183836/</p>
<p>Week 9 – Class 1 T, Oct. 22</p>	<p>Flipped Classroom Reports on Section 1; Discussion</p> <p>Students discover and report on various 'distributed' activism, journalism, and political tools for aiding public documentation or widening public input and discussion. [For instance, StoryApp for journalists or other issues for building stories and reportage online; WeAreChange model; https://www.patreon.com/]</p>
<p>Week 9 – Class 2 Th, Oct. 24</p>	<p>MR1 due today.</p> <p>MR2: Section 2 of 4: Mobile Revolution in Science: Science, educational, cultural and religious changes (transmitting and exchanging information in general is changing)</p> <p>"The future is here, it is just not equally distributed." --- William Gibson, science fiction author and essayist on technology/social relationships</p> <p>regional quote: "The one technology that spans rich and poor alike in places like this is not industrial technology. It's not to do with electricity or water. It's the mobile phone. If you were to design from scratch virtually any service in Africa, you would start now with the mobile phone."--Charles Leadbeater</p> <p>private hegemony: "We know where you are. We know where you've been. We can more or less know what you're thinking about... Your digital identity will live forever... because there's no delete button."—Former Google CEO Eric Schmidt, visitor/advisor to North Korea, member of Hillary Clinton's campaign for President, 2016 [from: http://pando.com/2013/12/16/googles-for-profit-surveillance-problem/]</p> <p>State hegemony: China Assigns Every Citizen A 'Social Credit Score' To Identify Who Is And Isn't Trustworthy; Country Determines Your Standing Through Use Of Surveillance Video, Plans To Have 600 Million Cameras By 2020 https://newyork.cbslocal.com/2018/04/24/china-assigns-every-citizen-a-social-credit-score-to-identify-who-is-and-isnt-trustworthy/</p>

Assignment:

1. Chapter 12, "The Promise and the Myths of e-Learning in Post-secondary Education, by Tony Bates, in *The Network Society: A Cross-cultural Perspective*, ed. Manuel Castells (2004).
2. Assignment: Chapter 19, "The Hacker Ethic as the Culture of the Information Age, by Pekka Himanen, in *The Network Society: A Cross-cultural Perspective*, ed. Manuel Castells (2004).
3. Pasquale, Frank. 2015. *The Black Box Society: The Secret Algorithms That Control Money and Information*. Cambridge, Massachusetts: Harvard University Press.

Chapter 1: Introduction—The Need to Know 1

Chapter 2: Digital Reputation in an Era of Runaway Data 19

Chapter 3: The Hidden Logics of Search 59

Chapter 6: Toward an Intelligible Society 189

4. John W. Whitehead. 2019. "The Age of Tyrannical Surveillance: We're Being Branded, Bought and Sold for Our Data," *Rutherford Institute* https://www.rutherford.org/publications_resources/john_whiteheads_commentary/the_age_of_tyrannical_surveillance_were_being_branded_bought_and_sold_for_our_data
5. February 26, 2019 Plato's Cave (Animated Version) [8 min.] <https://www.youtube.com/watch?v=d2afuTvUzBQ>
6. Nicholas Carr. 2008. "Is Google Making Us Stupid?: What the Internet is doing to our brains," *The Atlantic*. <http://www.theatlantic.com/education/archive/2014/09/is-google-making-students-stupid/380944/>
7. Sustainable Business Apps <http://online.wsj.com/ad/article/sustainability-apps>
8. Apple on Sustainability: <https://itunes.apple.com/us/app/sustainability/id516773318?mt=8>
9. New York City's mobile sustainable projects, via apps: <http://bigapps.nyc/p/>
10. Brock, Jon. 2018. "'Science is broken; let's fix it.' Introducing Frankl adviser and open science pioneer Professor Alex Holcombe," *Medium* (June 14) ["In 2007 [Alex Holcome] became an academic editor and founding advisory board member for what is now the world's largest open access journal PLoS ONE."] <https://medium.com/frankloppenscience/science-is-broken-lets-fix-it-f1342dcd7123>
11. Stann, Eric. 2019. "How smartphones are being used to monitor ageing bridges," *World Economic Forum*

<https://www.weforum.org/agenda/2019/02/smartphone-sensors-keep-an-eye-on-crumbling-bridges> (Accessed: April 30, 2019)

12. Popescu, Adam. 2018. "AI Helps Africa Bypass the Grid: Azuri's HomeSmart adjusts power output based on prior solar battery use." (June 11) Bloomberg, <https://www.bloomberg.com/news/articles/2018-06-11/ai-helps-africa-bypass-the-grid>
13. Houser, Kristin. 2018. "There's Now a Religion Based on the Blockchain. Yes, Really.", *Futurism* <https://futurism.com/blockchain-religion-matt-liston/>
14. IBM Forges Global Joint Venture with Maersk Applying Blockchain to 'Digitize' Global Trade, Jan 2018, <https://gomedici.com/daily-review-digitization-of-global-trade-with-blockchain-technology-ibm-leads-way/>
"Maersk, the largest container ship and supply vessel operator in the world since 1996..."
15. Chile Adopts Blockchain Technology For National Energy Grid, Feb. 27, 2018 <https://cointelegraph.com/news/chile-adopts-blockchain-technology-for-national-energy-grid>
16. Franceschi-Bicchierai, Lorenzo. 2019. "A Hacker Finds He Can Kill Car Engines After Breaking Into GPS Tracking Apps"
https://motherboard.vice.com/en_us/article/zmpx4x/hacker-monitor-cars-kill-engine-gps-tracking-apps "I can absolutely make a big traffic problem all over the world," the hacker said. "A hacker broke into thousands of accounts belonging to users of two GPS tracker apps, giving him the ability to monitor the locations of tens of thousands of vehicles and even turn off the engines for some of them while they were in motion, Motherboard has learned. The hacker, who goes by the name L&M, told Motherboard he hacked into more than 7,000 iTrack accounts and more than 20,000 ProTrack accounts, two apps that companies use to monitor and manage fleets of vehicles through GPS tracking devices. The hacker was able to track vehicles in a handful of countries around the world, including South Africa, Morocco, India, and the Philippines. On some cars, the software has the capability of remotely turning off the engines of vehicles that are stopped or are traveling 12 miles per hour or slower, according to the manufacturer of certain GPS tracking devices."
17. Sushma, U. N. 2018. "After turning exam prep into a booming business, India's newest unicorn [BYJU'S] is going global"
<https://qz.com/1248788/byjus-indias-newest-unicorn-is-going-global-with-its-exam-prep-business/>
 - a. Anupam, Suprita. 2018. "The Rise Of India's Billion-Dollar Club: Edtech Startup BYJU'S Turns Unicorn "In Its Annual Indian Tech Startup Funding Report 2017, Inc42 Marked BYJU'S As One Of The Potential Startups To Enter The Unicorn Club"

	<p>https://inc42.com/buzz/the-rise-of-indias-billion-dollar-club-edtech-startup-byjus-turns-unicorn/ "BYJU'S, as appears from its recent filings with MCA, has now become 13th Indian startup to join the unicorn club."</p> <p>b. Velayanikal, Malavika. 2017. "Tencent adds to its string of pearls in India – Practo, Hike, Flipkart, and now Byju's," https://www.techinasia.com/tencent-backs-profitable-byjus</p> <p>c. Dhamija, Anshul. 2017. "Byju's acquires TutorVista and Edurite from Pearson: Through this acquisition Bengaluru-based Byju's gets a foothold in the online tutorial market in the US," http://www.forbesindia.com/article/special/byjus-acquires-tutorvista-and-edurite-from-pearson/47449/1</p> <p>d. Heath, Alex. 2016. "Mark Zuckerberg leads \$50 million investment in Indian education startup" http://www.businessinsider.com/mark-zuckerberg-invests-byju-indian-education-startup-2016-9</p> <p>18. Charles Leadbeater. 2011. "Education innovation in the slums" TED. https://www.youtube.com/watch?v=6X-8TA4RBog (19 min)</p> <p>19. Charles Leadbeater. 2005. "The era of open innovation" https://www.youtube.com/watch?v=W7raJeMpyM0 (19 min)</p> <p>20. Richard Rowe. 2011. ICTs changing education in developing countries, at TEDxPlazaCibeles (2011; Uruguay) https://www.youtube.com/watch?v=k1Hvmt4PY_Y (19 min)</p> <p>21. VIDEO: Jon Gosier. 2015. "The problem with 'trickle-down technomics'" (6:04) https://www.ted.com/talks/jon_gosier_the_problem_with_trickle_down_t_echnomics</p> <p>22. Addressing/location problems solved?</p> <p>a. Chris Sheldrick. 2017. "A precise, 3-word address for every place on earth" (5 min) https://www.ted.com/talks/chris_sheldrick_a_precise_three_word_address_for_every_place_on_earth "With what3words, Chris Sheldrick and his team have divided the entire planet into three-meter squares and assigned each a unique, three-word identifier, like famous.splice.writers or blocks.evenly.breed, giving a precise address to the billions of people worldwide who don't have one."</p> <p>b. SnooCODE: SnooCode Ghana. 2015. https://www.youtube.com/watch?v=yg0ES0Fqe9g (1:31) "SnooCODE is robust and can work without an internet connection or mobile sim card. (Unlike what3words.) "Without addresses,</p>
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many important features of the modern society no longer work: from tracking diseases and emergency response services to e-commerce and deliveries. We believe that everyone should have a definitive address enabling them to have access to these services, no matter where they live. We have developed the solution, a system we call SnooCODE. A SnooCODE is a 6 or 7-digit alphanumeric code that acts like a UK post code or a US Zip Code except over 200 x more precise. SnooCODE allows every man, woman and child to have a definitive address. A SnooCODE like COF-K8D can locate a house to within less than 7 metres. SnooCODE gives the tool for anyone, no matter how remote or cluttered their geographic location, no matter their level of education, to precisely pin point their location on any of the available online or offline mapping platforms. Available on Android and iOS, SnooCODE is robust and can work without an internet connection or mobile sim card." <https://snocode.com/what-we-do/>

- c. SnooCodeGhana. 2015. "How to get SnooCode." <https://www.youtube.com/watch?v=TuOOzF9TZw4> (3 min)
- d. Google Maps & Apple Maps vs SnooCode? (3:25) SnooCode works without WiFi connection and without SIM card; demonstration: <https://www.youtube.com/watch?v=hrM11Jdroy0>
- e. PulseGhana. 2015. Code Red Emergency Services App For Ghanaians (6:40) https://youtu.be/HL33Ex_g8ow?t=57s "CodeRed is essentially a variation of SnooCODE," says inventor Sesinam Dagadu, of TinyDAVID organization": far more privacy than the invasive "panopticon-like" surveillance ideas of Chris Sheldrick'swhat3words.

23. Paul Conneally. 2011. "How mobile phones power disaster relief." https://www.ted.com/talks/paul_conneally_digital_humanitarianism (10:49) "The disastrous earthquake in Haiti taught humanitarian groups an unexpected lesson: the power of mobile devices to coordinate, inform and guide relief efforts. At TEDxRC2, Paul Conneally shows extraordinary examples of social media and other technologies becoming central to humanitarian aid." TERA: Trilogy Emergency Response Application

24. Apikul, Christine. 2010. "ICT for Disaster Risk Reduction in Asia and the Pacific: An Overview of Trends, Practices and Lessons, in ICT for Disaster Risk Reduction, Asian and Pacific Training Centre for Information and Communication Technology for Development https://www.preventionweb.net/files/14338_14338ICTDCaseStudy21.pdf (UN-APCICT/ESCAP) (and on cloud drive under "Apikul")

- a. APCICT was inaugurated on 16 June 2006 as a regional institute of the United Nations Economic and Social Commission for Asia and the Pacific (ESCAP), **and is located in Incheon, Republic of Korea.** The Centre's

mission is to strengthen the efforts of the member countries of ESCAP to use ICT in their socio-economic development through human and institutional capacity building. To meet this objective, APCICT's work is focused on three inter-related pillars – Training, Research and Advisory Services. Together they form an integrated approach to ICT human capacity building. <http://www.unapcict.org/aboutus>

25. Erik Hersman. 2009. On 'Ushahidi,' https://www.ted.com/talks/erik_hersman_on_reporting_crisis_via_texting (3 min); Erik Hersman presents the remarkable story of Ushahidi, a GoogleMap mashup that allowed Kenyans to report and track violence via cell phone texts following the 2008 elections, and has evolved to continue saving lives in other countries.

26. Crisismapping.net; openstreetmap.com

27. Holly Hartman. 2017. "I downloaded an app. And suddenly, was part of the Cajun Navy." 'After two minutes of training, I was talking to people desperate for help. (Friday, December 22, 2017) [Zello app] <https://www.chron.com/local/gray-matters/article/I-downloaded-an-app-And-suddenly-I-was-talking-12172506.php>

28. Google Translate App Works Like Magic (2 min) <https://www.youtube.com/watch?v=Ro-HfETpzhc> [this is years old as well!]

29. 3 Cool Apps To Translate Foreign Languages Instantly <https://www.youtube.com/watch?v=jm9WqcWwkaY>

30. A decoder, which can transform brain activity into speech, is presented in a study published in Nature. The brain-computer interface device synthesizes speech using the neural signals that control lip, tongue, larynx and jaw movements. Read the paper: (link: <https://go.nature.com/2vn9RpC>)

"Second Generation" Social Media?

31. Kialo App: Meet the start-up that wants to sell you civilised debate <https://www.ft.com/content/4c19005c-ff5f-11e7-9e12-af73e8db3c71>
"Kialo does not compete with other websites, because a "collaborative reasoning tool" is a new category of online product. 'It's idealistic. The mission is to empower reason and to make the world more thoughtful.'"

32. So You've Decided To Boycott Google... (14 min; different search engine architectures/motivations) https://youtu.be/gE_DyB7uS8E

33. Corbett Report. 2018. Announcing a New Series on Alternative Social Media Platforms (2 min) <https://www.youtube.com/watch?v=DxAAyiqzpl8>

34. Corbett Report. 2017. The Social Media Exodus Has Begun. Here's Where

	<p>Everybody's Going. https://www.youtube.com/watch?v=XhactAB37YI</p> <p>35. Corbett Report. 2018. Social Media Alternatives: BitChute.com with Ray Vahey https://www.youtube.com/watch?v=-oKGbBSuBfo</p> <p>36. Corbett Report. 2018. Social Media Alternatives: Yours.org with Ryan X. Charles https://www.youtube.com/watch?v=Rk1f2ZtsRCg</p> <p>37. Corbett Report. 2018. Social Media Alternatives: Steemit and DTube with Dan Dicks (my favorite concepts so far; one with a financial infrastructure for clicks into payments if you like a story; turned into site-based cash for authors at Steemit) https://www.youtube.com/watch?v=50IZSxYi68k</p> <p>38. 2017. Introducing DTube: a decentralized video platform using STEEM and IPFS https://steemit.com/video/@heimindanger/introducing-dtube-a-decentralized-video-platform-using-steem-and-ipfs "DTube is an application fully written in javascript, that runs in the browser, that allows you to upload and watch videos on top of the IPFS Network. Moreover, it uses STEEM as a database and enables earning rewards from your uploads."</p> <p>39. Matsakis, Louise. 2018. "Minds.com Is the Anti-Facebook That Pays You for Your Time" https://www.wired.com/story/minds-anti-facebook/</p> <p>40. On Gab: Kaminska, Izabell. 2019. "Introducing the shadow comment sector," <i>Financial Times ft.com</i> (March 1, 2019) https://ftalphaville.ft.com/2019/03/01/1551416400000/Introducing-the-shadow-comment-sector/ ["Dissenter": universal comment section on top of all websites as the same; "January 25, 2019: "Okay, this is epic. Gab <u>browser extension</u> that lets you instantly share any article you are reading to your Gab profile. Soon it will give every URL on the internet its own uncensored comment section." (doing this by February 2019) https://twitter.com/getongab/status/1088636576274337793</p> <p>41. Gab Dissenter Tutorial: The Comments Section of The Internet (March 1, 2019) https://www.youtube.com/watch?v=IYsdpKfe0w4 (4:18) "game changer...[T]he censors will not be able to shut down the discussion of the public."</p> <p>42. now Gab has built its own web browser as well called Dissenter; is building its own far more open app store as well. "(May 7, 2019: "Shipping an iOS build of the Dissenter free speech <u>web browser</u> to Apple for review this weekend. While everyone else is complaining about Big Tech censorship, we are shipping solutions daily to route around it. Less talking, more building!" https://twitter.com/getongab/status/1125753096276148225</p> <p>43. P2P to avoid censorship and demonetization, money-inventing and digital coin-sharing social medias; examples: BitChute https://www.bitchute.com/ ; P2P video sharing</p>
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Steemit <https://steemit.com/> P2P journalism
d.tube: <https://d.tube/> decentralized video platform based on the InterPlanetary File System (IPFS) protocol. (see Juan Benet video below); D.tube is similar to YouTube
Minds.com <https://www.minds.com/> The crypto social network: We are an open source and decentralized platform for Internet freedom. Get paid in crypto for your contributions to the community.

44. On Brave, another fresh web browser environment: "Browse up to 3x faster; Block ads & trackers that follow you around; Get rewarded for browsing" <https://brave.com/sti701> & <https://brave.com/faq/>

Optional Videos and Journalism about what is happening in "MR2" to Change the Sensors of the Mobile Phone:

2012: Smell: 5 Future Technology Innovations from IBM [in five years computers will smell] (1:08)
<https://www.youtube.com/watch?v=RYkSvNKdyBM>

Introducing Google Nose (2:02); [web searching for smells, downloading smells; a joke/troll video from Google in 2013...yet...by 2017...uncannily prescient soon?]
https://www.youtube.com/watch?v=VFbYadm_mrW

2013. Speak Twenty-Five Languages Instantly with Sismo (1:34)
<https://www.youtube.com/watch?v=qzDz0FLJnW0>

CBS News. 2014. New device turns smartphones into "smell-a-phones" (1:25)
<https://www.youtube.com/watch?v=vZmtHLLqLWs>

2014. Google Invents "Smart" Contact Lenses Medically to Monitor Glucose Levels in Tears (:31)
https://www.youtube.com/watch?v=gHF_-waMhbg
<https://www.youtube.com/watch?v=jTnriH6NkQw> (:56) prototype

Euronews. 2015. Smell, Taste, Touch Via The Internet -Hi-Tech (4:01) [Dr. Adrian Cheok of City University London, Ring-U; Scen-T]
<https://www.youtube.com/watch?v=YxFXjKn1LxQ>

Using mobiles to smell: How technology is giving us our senses | The New Economy Videos (2014) (7:05) [Dr. Adrian Cheok of City University London, Ring-U; Scen-T]
<https://www.youtube.com/watch?v=-FnK36ZXdNw>

Technology delivers a taste of future internet communication (6:00) [Dr. Adrian Cheok of City University London, Ring-U; Smell-U; Scen-T]
<https://www.youtube.com/watch?v=fzhmFJ-1GCw>

2015. Night vision lenses, U. of Michigan (2:14)
<https://www.youtube.com/watch?v=Ty367Vqj80Q>

2015. Augmented Reality with Mobile Phones: Google Translate App Works Like Magic (2:58)
<https://www.youtube.com/watch?v=Ro-HfETpzhc>

2016. Google Translate Word Lens with Mandarin Chinese (Live Demo) [Chinese on mobile camera; translates to English on screen] (:39)
<https://www.youtube.com/watch?v=IXkiBnjNKIU>

2016. The 2016 Samsung Mirror & Transparent OLED Displays (3:42)
<https://www.youtube.com/watch?v=SYQUCpLlc8U>

CES 2016 - Aryballe Smell Technology (1:26) [Aryballe Technologies, Tristan ROUSSELLE, about the NeOse scent/taste sensor.]
<https://www.youtube.com/watch?v=-WchPFMhhEk>

2016. Earpiece Language Translator - Behold The Future (2:21) Waverly Labs: PILOT earbuds
<https://www.youtube.com/watch?v=Pk9xfPWdp-k>

2016. How Breathtec's Na-Nose Sniffs Out Diseases (2:56)
https://www.youtube.com/watch?v=q_n-dsRRTj0

2016. This Breathalyzer May Detect Cancer
<https://www.youtube.com/watch?v=9UYFGynLVCU> (:49)
<http://vitalupdates.com/breathalyzer-used-detect-diseases-cancer/> [Breathtec's Na-Nose]

New York Post. 2017. New device can smell cancer before doctors can detect it (1:03) [Breathtec's Na-Nose]
<https://www.youtube.com/watch?v=ZChMI90dr2w>

Jan 1, 2017 Breath Test To Detect 17 Diseases (3:31) [Breathtec's Na-Nose]
<https://www.youtube.com/watch?v=tqCCyd4HweU>

This Breathalyzer Claims To Detect Lung Cancer And 17 Different Diseases [Breathtec's Na-Nose] [sounds like 'nano']
<http://www.ibtimes.com/breathalyzer-claims-detect-lung-cancer-17-different-diseases-2467178>

2016. Samsung smart contact lenses: with built-in camera is at this point the new Samsung patent. (1:32)
<https://www.youtube.com/watch?v=N15PczCiNO4>

2017. Sony's Futuristic Contact Lenses Will Let You Click Photos, March 2017 (patent)
<https://www.youtube.com/watch?v=HW1AqIR2kzE> (1:11)
<https://www.youtube.com/watch?v=Y4KOGdIBTm8> (:45)

2016. What is Stopping Flexible Displays From Taking Over? (2:34)
<https://www.youtube.com/watch?v=mo6nF-T58PA>

2016/2017. Waverley Lab's Earbuds [PILOT], Live Translation: Testing earbuds that translate in real-time (2:18)
<https://www.youtube.com/watch?v=ZAHfevDUMK4>

2017. The Pilot Translation Earpiece bridges the language barrier (1:17) [a funded IndyGogo campaign, shipping summer 2017; then priced at \$299.00]

<https://www.youtube.com/watch?v=jq5ylpsKrH0>

2017. Mymanu Clik voice translation truly wireless earbuds live on kickstarter [translation buds and mobile phone in one]

<https://www.youtube.com/watch?v=dN3WvBohZDA> [I think it's funded now? says shipping March 2017] (2:20)

Top 5 Futuristic Wireless Earbuds [translator earbuds; earbuds charged from mobile phone; sound cancellation earbuds; microphone based earbuds for noisy areas/mobile phone use, etc. (10:03)

<https://www.youtube.com/watch?v=WE0kH-f7ZEc>

2017. 10 Portable Smart Projectors (15:55)

<https://www.youtube.com/watch?v=NXZmrOmbfWY>

Mobile Phone Based "Science"

10 environmental sensors that go along with you

<https://www.treehugger.com/clean-technology/environmental-sensors.html>

2012. Sensordrone Turns Your Phone Into an Environmental Sensor for Gases, Temperatures, More

<https://www.treehugger.com/gadgets/sensordrone-turns-phone-envirnomental-sensor.html>

2012. Small, Portable Sensors Allow Users to Monitor Exposure to Pollution on Their Smart Phones

http://ucsdnews.ucsd.edu/pressrelease/small_portable_sensors_allow_users_to_monitor_exposure_to_pollution_on_their_smart_phones

2013. MoboSens: A water pollution sensor for your smartphone

<https://www.indiegogo.com/projects/mobosens-a-water-pollution-sensor-for-your-smartphone#/>

With Wearable Devices That Monitor Air Quality, Scientists Can Crowdfund Pollution Maps

<http://www.smithsonianmag.com/innovation/with-wearable-devices-that-monitor-air-quality-scientists-can-crowdfund-pollution-maps-180954556/#15tRVsk2yrZf7vfZ.99>

Mobile Sensor for Air Pollution

<http://bigthink.com/design-for-good/a-mobile-sensor-for-air-pollution>

Lord Drayson launches pollution sensor powered by radio waves

Businessman and Labour party donor's FreeVolt project uses ambient wireless and mobile network waves to power CleanSpace tag for app designed for cyclists and pedestrians

<https://www.theguardian.com/science/2015/sep/30/lord-drayson-launches-pollution-sensor-powered-by-radio-waves>

Atmotube is a device currently being manufactured for consumers.

<https://techcrunch.com/2015/11/16/atmotube-is-a-tiny-pollution-sensor-that-clears-up-whats-in-the-air-you-breathe/>

Survey of Wireless Sensor Network Based Air Pollution Monitoring Systems
<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4721779/>

Measure and Map Noise Pollution With Your Mobile Phone
<http://www.instructables.com/id/Measure-and-map-noise-pollution-with-your-mobile-p/>

Communication between Sensors and Mobile Phone
<http://www2.ee.unsw.edu.au/~vijay/research/pollution/reports/JJReport.pdf>

Coming, Ready or Not: Cell Phones as Sensors | The Network
<https://newsroom.cisco.com/feature-content?articleId=1167305>

Darwin Phones: the Evolution of Sensing and Inference on Mobile...
<http://www.cs.dartmouth.edu/~campbell/papers/darwin.pdf>

"Participatory noise pollution monitoring using mobile phones" Information Polity 15 (2010) 51-71
DOI 10.3233/IP-2010-0200, IOS Press
ftp://progftp.vub.ac.be/tech_report/2010/vub-tr-soft-10-14.pdf

Imperial College pollution app OpenSense uses phone sticker to measure London's toxic air
<http://www.standard.co.uk/news/london/imperial-college-pollution-app-opensense-uses-phone-sticker-to-measure-londons-toxic-air-a3488116.html>

Turning smartphones into personal, real-time pollution monitors
<https://www.acs.org/content/acs/en/pressroom/presspacs/2015/acs-presspac-february-18-2015/turning-smartphones-into-personal-real-time-pollution-monitors.html>

2018. See through walls like Superman with this Android accessory
<https://mashable.com/2018/03/28/walobot-see-through-walls/#F85DYoVm4Zqm>

Other alternatives to social media, browsers, search engines:

The Social Media Exodus Has Begun. Here's Where Everybody's Going. (7:40)
<https://www.youtube.com/watch?v=XhactAB37YI> "alternatives to these social media dinosaurs are already here, and they're blockchain-based, torrent friendly, decentralized and censorship resistant."

Kialo App: Meet the start-up that wants to sell you civilised debate
<https://www.ft.com/content/4c19005c-ff5f-11e7-9e12-af73e8db3c71>

"Kialo does not compete with other websites, because a "collaborative reasoning tool" is a new category of online product. 'It's idealistic. The mission is to empower reason and to make the world more thoughtful.'" Built on sending/sharing 'claims' instead of mere 'tweets'

The Weaponization of Social Media
<https://d.tube/#!/v/corbettreport/kqn54tmc>

"Just Be Evil" - The History Google Doesn't Want You To Know (12 min)
<https://www.youtube.com/watch?v=uLF1cJ-qLU8>

Other alternatives to Google search engine:
So You've Decided To Boycott Google... (15 min)

	<p>https://www.youtube.com/watch?v=qE_DyB7uS8E</p> <p>LoCascio, Rob. 2018. "The sudden death of the website," https://techcrunch.com/2018/02/13/the-sudden-death-of-the-website/ [2-14-2018; power of Google; e-commerce]</p> <p>Optional: Google/NSA Don't Be Evil; Facebook [separate clips in one] (53 min) https://www.youtube.com/watch?v=5WNkDfxTPbI</p> <p>An Introduction to The Interplanetary File System [IPFS an extension of HTTP] (10 min) https://www.youtube.com/watch?v=BA2rHlB5i0</p> <p>Redesigning HTTP into IPFS for a distributed protocol more durable and resilient; Stanford Seminar - IPFS and the Permanent Web, inventor/designer Juan Benet (69 min; 2015) https://youtu.be/HUVmypo9HGI</p> <p>Distributed Apps with IPFS (Juan Benet) - Full Stack Fest 2016 (51 min) https://www.youtube.com/watch?v=jONZtXMu03w</p> <p>The next Internet Revolution Juan Benet TEDxSanFrancisco (24 min) https://youtu.be/2RCwZDRwk48</p>
<p>Week 10 – Class 1, T, Oct. 29</p>	<p>Two Part Lecture on How Different Mobile ICT Networks are as a Media Regime:</p> <p>[1] 7 Media Regimes in History; Comparing current "Regime 7" of Mobile ICT Networks with All Past 6 Media Regimes for How Unique and even Revolutionary Regime 7 Is Now</p> <p>[2] 20 Comparative Characteristics or Attributes of Any Media; Comparing and Judging Current "Regime 7" of Mobile ICT Networks on 20 points of its capacities compared to the previous regime (Regime 6) of 1-way mass media.</p>
<p>Week 10 – Class 2 Th, Oct. 31</p>	<p>Flipped Classroom Reports on Section 2; Day 1, Discussion</p> <p>Catch-up for MR2 topics</p>
<p>Week 11 – Class 1 T, Nov. 5</p>	<p>MR2 papers due in class or under my door (inside my office) or by 5 p.m.</p> <p>MR3: Section 3 of 4: Mobile Revolution in Consumption: Material, Consumer, Labor, Services, or Economic Changes of Mobility and Sustainability (the exchange, transport, creation, and purchase/use of <u>material</u> items is changing)</p> <p>(Topics covered and converging: the sharing economy, labor relations, 3D printing, changed urban forms/'smart cities', recycling apps, telemedicine; distributed electricity applications; Home Generation and Monitoring of</p>

Electricity to the Grid; Wearables; IOT; human health monitoring applications; 3D scanning apps, etc.: so many areas of development now yield to quite a 'modular' Mobile Development creating social communities, markets, and potentially sustainability by utilizing distributed technologies; there are large private empires of m-commerce and e-commerce; there are others that want to recycle and swap material items and services for free in a particular region (old clothes, furniture, books, old computer equipment, repair services, food, etc.); both use ICT.; issues of the 'last mile' of communication to make it faster, safer, and more secure like LiFi instead of choosing microwaves at such close human distance; dangers of untested high frequency "5G" in even closer proximity to everything human; '5G is not just 'faster WiFi' it is a completely different frequency band with completely different properties requiring ever closer towers and boxes since it fails to go through walls and is thus a bad wireless solution to only work at such close distance instead of have a longer range.

Assignment:

Picot and Lorenz, eds. 2010. *ICT for the Next Five Billion People: Information and Communication for Sustainable Development*. Excerpts.

Chapter 7: "Labor in the Network Society: Lessons from Silicon Valley," by Chris Benner, in *The Network Society: A Cross-cultural Perspective*, ed. Manuel Castells (2004)

Standing, Guy. 2010. *The Precariat: The New Dangerous Class*. Bloomsbury Academic.

Chapter 1 The Precariat 1

Chapter 2 Why the Precariat Is Growing 26

Chapter 3 Who Enters the Precariat? 59

Chapter 4 A Politics of Paradise 155

Chapter 13: "E-Health Networks and Social Transformations: Expectations of Centralization, Experiences of Decentralization," by James E. Katz, Ronald E. Rice, and Sophia K. Acord

James Larson and Myung Oh, "Chapter 6: Intelligent Buildings, Sentient Cities and the Ubiquitous Network Society, in Digital Development [Section on "Songdo" as part of the U-Korea Master Plan ["U" for Ubiquitous]]

"To Wifi, or not to Wifi?" On Lifi vs Wifi vs 5G:

1 of 3. LiFi, or "Light Fidelity" as contrasted to WiFi, which is microwave "wireless fidelity." As we enter a world where 'last mile' connectivity and edge computing will be overloaded with human users, as well as potential human health problems of microwave radiation in such close proximity, that now combines with the prospect of parallel and separate bandwidth problems of IoT with 50 billion devices in a few years. Therefore other technical solutions for the mobile economy in the 'last mile' are being tendered in the past several years. One of these is "LiFi," a technical solution that is faster, safer, and more secure communication in this 'last mile' that is required. I'm interested in this LiFi

development for 'last mile' issues and for the issues of bandwidth for edge computing. What do you think?

Wireless data from every light bulb | Harald Haas (2011) (12 min)

<https://www.youtube.com/watch?v=NaoSp4NpkGg>

Forget Wi-Fi. Meet the new Li-Fi Internet | Harald Haas (2015) (7 min)

<https://www.youtube.com/watch?v=iHWIZsIBj3Q>

LiFi to unlock the Third Industrial Revolution | Harald Haas | TEDxWHU (2016)

<https://www.youtube.com/watch?v=UuleFh8yhCg>

Prof. Harald Haas - My Li-Fi Revolution (2014) (1:15:00)

<https://www.youtube.com/watch?v=WRG9iXZbuAc>

Jurczak, Christophe. 2018 "What is LiFi?" at *Medium.com*: "LiFi, a technology that allows to communicate wirelessly indoor through LED lighting modulation, reached maturity with **the first LiFi luminaires and downlights commercialized in 2016 by Lucibel and PureLiFi**, and many customers are now experiencing LiFi every day in their environment. Many use cases are being explored for the IoT and LiFi is poised to be a wireless communication solution for edge gateways and fog computing... While the internet runs mostly on optical fibers and last-mile fibers are more and more common, LiFi extends the optical communication revolution closer to the final customer, to the last meter, transforming indoor lighting into a backbone for information."

<https://medium.com/@christophe.jurczak/better-edge-connectivity-with-lifi-77d1f5bc0916>

2 of 3. WiFi difficulties in choosing microwaves for the 'last mile' discussed

Read/Skim/Optional of Interest:

Firstenberg, Arthur. 2004. "Killing Fields [Electromagnetic Radiation]," *The Ecologist* (June): 22-27:

<https://web.archive.org/web/20100411223348/http://www.mindfully.org/Technology/2004/Electromagnetic-Fields-EMF1jun04.htm> "Recent Research [Microwaves]," pp. 27-28

Firstenburg, Arthur. 2011. "Microwaves: Summary of a Problem"

http://www.cellphonetaskforce.org/wp-content/uploads/2011/06/microwaves_2011.pdf [9 pages];

"The Largest Biological Experiment Ever" (2006)

http://www.cellphonetaskforce.org/wp-content/uploads/2011/06/largest_exp.pdf ;

"Electrical Sensitivity" (2002) http://www.cellphonetaskforce.org/wp-content/uploads/2011/06/Electrical_Sensitivity.pdf [7 pages];

others accessible from: http://www.cellphonetaskforce.org/?page_id=32

Firstenburg, Arthur. 1998/9. 'Mortality Statistics [DEATH] in USA's Cities Repeatedly Rise with First Microwave Cell Phone Service Introductions, 1996-1998" http://www.cellphonetaskforce.org/wp-content/uploads/2011/06/Mortality_Part_1.pdf ; http://www.cellphonetaskforce.org/wp-content/uploads/2011/06/mortality_statistics.pdf

"Dangers of the Wireless Cell Phone, Wi-Fi and EMF Age, Part 1" [total time, 4 parts, 40 minutes], Dr. George Carlo, founder of the Safe Wireless Initiative [hired then fired by the cell phone industry when his health/environmental impact assessment gave bad news to the already established risky industry (created without any TA/EIA at all, by law unable to oppose towers, in the USA, as it was introduced), Dr. Carlo refused to be quiet or refused to be bribed to be quiet; this will be uploaded to the cloud drive; it is summarized in this audio: interview: "Wi-Fi in Schools: Dr. George Carlo" <https://www.youtube.com/watch?v=IgL09yR1JIQ> 27 min

3 of 3. 5G as a humanly untested option with bad portents of health problems if installed

Colbeck, Patrick, Senator. 2018. "[Senator] Colbeck cites health as reason to slow 5G rush" "Senator Patrick Colbeck (R-Canton, Michigan State Senator), warns about the dangers some new technologies pose." <https://www.youtube.com/watch?v=hkDDQgDVsbk> (6:40)

Blumenthal, US Senator Blumenthal Raises Concerns on 5G Wireless Technology Health Risks at Senate Hearing since WITHOUT RESEARCH ON SAFETY OF 5G AT ALL, ZERO STUDIES EVER DONE, ZERO STUDIES EVER FUNDED <https://www.youtube.com/watch?v=ekNC0J3xx1w> (4:51) 5G industry openly refuses to fund 5G health research, in an exchange with Senator Blumenthal (D-CT)

At Senate Commerce Hearing, Blumenthal Raises Concerns on 5G Wireless Technology's Potential Health Risks (Feb. 7, 2019) <https://www.blumenthal.senate.gov/newsroom/press/release/at-senate-commerce-hearing-blumenthal-raises-concerns-on-5g-wireless-technologys-potential-health-risks> "raised concerns with the lack of any scientific research and data on the technology's potential health risks."

Broze, Derrick. 2019. "California Mayor [of Danville, California] Admits Local Government Has "Lost Control" of 5G Rollout," (Mar 14, 2019) *The Mind Unleashed*, <https://themindunleashed.com/2019/03/california-mayor-lost-control-5g-rollout.html> article and video (7:47 min) [local government voted it down, federal government vetoed the local opposition] "According to the FCC's regulations, local governing bodies are not allowed to even consider health risks when making their decisions. This is because the federal law known as the Wireless

Communications Act of 1996 prohibits local jurisdictions from considering perceived health effects when taking an action on a proposed facility. Instead, cities and towns can only regulate cell sites based on the aesthetics and placement of the devices. This problem was only made worse in September 2018, when the FCC passed a new rule which put the federal government in complete control of the 5G rollout."

Note: This is what I would call 'ecological tyranny,' that there is "unrepresentative decisions to introduce degradative choices and unrepresentative repression to keep curtailed choices intact." Saying this another way, corrupt repression pushes undesired and unhealthy products onto people from an unrepresentative state, while the same unrepresentative pressures attempt to demote safer alternatives at the same time. This is thus hardly a 'market' or 'consumer' choice explaining why we have degradative choices in our lives. It's highly crony, repressive and political for why we have such degradative choices—and only political changes instead of simply product changes (since we have always had safer/cleaner products that are ignored and repressed it is hardly the lack of options per se that creates this) will change this whole larger dynamic of ecological tyranny.

Other topical issues:

VIDEO: Jon Gosier. 2015. "The problem with 'trickle-down techonomics'" (6:04) https://www.ted.com/talks/jon_gosier_the_problem_with_trickle_down_techonomics

LoCascio, Rob. 2018. "The sudden death of the website," <https://techcrunch.com/2018/02/13/the-sudden-death-of-the-website/> [2-14-2018; power of Google; e-commerce]

Empires versus Community Development:

1 of 2. Empires:

The Cloud 100: Cloud "Unicorns" (start-ups that grow to \$1 billion+ US quickly, term of 2013 invented by venture capitalist Aileen Lee to talk about the statistical rarity of companies growing fast—a common context of the global market capacities of information technology however)

<https://www.forbes.com/cloud100/#624484d5f941>

<https://www.forbes.com/sites/forbespr/2016/09/07/forbes-releases-inaugural-cloud-100-list-of-the-best-private-cloud-companies-in-the-world/#2b6675e91a59>

<https://www.forbes.com/sites/alexkonrad/2016/09/07/the-cloud-100-the-next-leaders-in-cloud-computing/#3a91e89b66ef>

Empires: China Money Network Launches Its China Unicorn Ranking With 102

Firms Worth \$435B

<https://www.chinamoneynetwork.com/2017/05/08/china-money-network-launches-its-china-unicorn-ranking-with-102-firms-worth-435b>

Pandolph, Stephanie. 2017. "Amazon dominates [USA's] Thanksgiving and Black Friday online sales," *Business Insider* (Nov. 29, 2017)

<https://www.businessinsider.com/amazon-dominates-thanksgiving-and-black-friday-online-sales-2017-11> "Amazon pulled in 45% of all [USA's] online transactions — or purchases — on Thanksgiving Day, and 54.9% on Black Friday, according to Hitwise data cited in Dealerscope."

Lieber, Chavie. 2018. "The human costs of Black Friday, explained by a former Amazon warehouse manager," *Vox* (Updated Nov 21, 2018)

<https://www.vox.com/the-goods/2018/11/20/18103516/black-friday-cyber-monday-amazon-fulfillment-center>

Ehrenkranz, Melanie. 2018. "Amazon and Tesla Facilities Named Among the Most Dangerous Workplaces in America [Updated]," *Gizmodo*,

<https://gizmodo.com/amazon-and-tesla-facilities-named-among-the-most-danger-1825537409>

Menegus, Bryan. 2018. "Amazon's Aggressive Anti-Union Tactics Revealed in Leaked 45-Minute Video," *Gizmodo* <https://gizmodo.com/amazons-aggressive-anti-union-tactics-revealed-in-leake-1829305201>

Lecher, Colin. 2019 "How Amazon automatically tracks and fires warehouse workers for 'productivity'", *Verge*, ["Documents show how the company tracks and terminates workers."]

<https://www.theverge.com/2019/4/25/18516004/amazon-warehouse-fulfillment-centers-productivity-firing-terminations>

Robots Kiva: Amazon [Fulfillment Center for Packaging/Shipping]

<https://www.youtube.com/watch?v=ULswQgd73Tc> (2:23)

Menegus, Bryan. 2018. "A Worrying Number of Amazon's Warehouse Workers Are Reportedly Living Off Food Stamps," *Gizmodo*, <https://gizmodo.com/a-worrying-number-of-amazon-s-warehouse-workers-are-rep-1825387691> "[F]ive states listing Bezos's empire as a top beneficiary of Supplemental Nutrition Assistance dollars...The issue of Amazon workers relying on food stamps may be more widespread, as this news only represents the data that's been furnished publicly so far. But in Kansas, Pennsylvania, Washington, Ohio, and Arizona, Amazon is among the top 20 beneficiaries of SNAP—and in Arizona things are particularly dire, with one out of every three Amazon employees needing food stamps to eat."

Turton, William. 2017. "Reminder: Amazon Treats Its Employees Like Sh*t," *Gizmodo*, <https://gizmodo.com/reminder-amazon-treats-its-employees-like-shit-1792642652>

"If you ask the average person what they think of Amazon, the response will most likely be positive. After all, it is a convenient service to quickly purchase whatever your heart desires. But few will consider the human

cost associated with fast shipping times and low, low prices. Amazon, like most tech companies, is skilled at getting stories about whatever bullsh*t it decides to feed the press. Amazon would very much prefer to have reporters writing some drivel about a discount code than reminding people that its tens of thousands of engineers and warehouse workers are f*cking miserable. How do I know they're miserable? Because (as the testimony below demonstrates) they've told every writer who's bothered to ask for years."

Inside A Warehouse Where Thousands Of Robots Pack Groceries

https://www.youtube.com/watch?v=4DKrcpa8Z_E (3:20) "[In the UK, the food supermarket] Ocado's new warehouse has thousands of robots zooming around a grid system to pack groceries. The thousands of robots can process 65,000 orders every week. They communicate on a 4G network to avoid bumping into each other. Is this the future of retail?"

Ehrenkranz, Melanie. 2018. "Tesla Whistleblowers Say Carmaker Failed to Report Serious Injuries at Its Factory," *Gizmodo*, <https://gizmodo.com/tesla-whistleblowers-say-electric-carmaker-failed-to-re-1825292358>

Lekach, Sasha. 2019. "No one noticed, but Uber and Lyft stopped accepting new NYC drivers." *Mashable* <https://mashable.com/article/lyft-uber-tlc-nyc-driver-waitlist-ride-hailing/> "The New York City Taxi and Limousine Commission, or TLC, put in place a livable wage regulation for ride-share drivers in February after it was approved last year. Independent contractor drivers are required to earn at least \$17.22 per hour after expenses. The amount companies like Uber have to pay is based on utilization rates as part of an effort to clear up street congestion and make sure for-hire cars are filled and not causing traffic with empty backseats. Last year a year-long cap on new Uber and Lyft vehicles also went into effect."

Lekach, Sasha. 2019. "Lyft finally catches up with Uber's continuous driver background checks," *Mashable* <https://mashable.com/article/lyft-driver-safety-background-checks-id-verification/> "Lyft eventually put out a statement about the harassment allegations and then a full week later, Lyft launched new features as part of its "commitment to safety." Two new safety features revolve around drivers and are very similar to systems competitor Uber has offered for years to monitor drivers... First up is continuous background checks on drivers. Lyft said it was moving from its annual re-checks after an initial criminal background check to a continuous monitoring system. A driver who gets in trouble with the law is immediately flagged and could be banned from the platform then — not in a few months. A new third-party service different from the one Lyft already uses for its annual checks will oversee the continuous process. Uber introduced continuous background checks last year."

Lekach, Sasha. 2019. "Uber could be worth \$90 billion. Most drivers won't see much of it." *Mashable* <https://mashable.com/article/uber-ipo-drivers/> Uber's upcoming IPO in May 2019: \$90 billion [perhaps one of the largest IPOs in history: Alibaba was only \$25 billion in 2014]. Average Uber driver hourly pay: Less than \$19 per hour. Based on an updated SEC filing, the company is worth

up to \$90 billion. And drivers are realizing they won't see much of it unless they've driven a lot for the ride-hailing company. The official Uber IPO is expected by the second week of May and will trade on the New York Stock Exchange with the ticker symbol "UBER." While Uber outlined a \$300 million payout plan for 1.1 million Uber drivers, some of the contract workers that literally drive the company's core service also want more transparency, better wages, and more benefits like health care and higher earning potential. The drivers who do choose to take advantage of the stock purchase plan won't be able to afford very much of it. A driver with 2,500 rides under their belt would get [only] \$100, which they could use to buy two shares at the expected IPO price of "between \$44 and \$50," and it would take them more than two hours of driving just to buy a single share of Uber. In the updated filing on Friday, Uber included more payout rewards for drivers who have driven 30,000 and even 40,000 trips during their time as an Uber driver. The reward previously maxed out at \$10,000 for 20,000 or more trips; now it's \$20,000 and \$40,000, respectively for those higher levels. A Gig Workers Rising protest is scheduled at Uber headquarters the week of the expected IPO. Other demonstrations will be held in different cities. Last week driver earnings app Gridwise released hourly ride-hailing driver wage data from the first part of this year. It found that the average hourly driver rate is \$18.65 based on 30,000 drivers taking 810,000 trips throughout the U.S. Uber's IPO valuation is smaller than expected, but still shadows over smaller rival Lyft. Lyft went public last month at \$72 per share and a \$24 billion valuation. Uber was expected to hit a market cap as high as \$120 billion at one point, according to Bloomberg and other outlets. ... Uber still dominates around the globe. Despite concerns, Uber's IPO filing listed CEO Dara Khosrowshahi's total compensation last year around \$45 million. COO Barney Harford's total pay was even higher at roughly \$47 million. Drivers are decidedly not cool with how the company is divvying up the pie."

Lekach, Sasha. 2019. "To improve Uber's driver app, he hits the road as an Uber driver" *Mashable* <https://mashable.com/article/uber-driver-app/> "Uber's head of driver product [Daniel Danker] is proud of his 96 rides (and no tickets ... so far). Last week I rode along with Danker for over an hour. We picked up four different passengers on UberX trips and made [only] \$24 (not including tips and before expenses like gas, insurance, and maintenance). The take-home average hourly wage for UberX drivers is about \$13, according to driver resource site Ridester, which considers data from lower-earning states like North Carolina and Texas. Another thing to keep in mind: Because Uber drivers are independent contractors, they don't get benefits, like health insurance or sick pay... I saw for every ride that comes in, drivers are bombarded with information including the rider name, rating, pick-up location, and type of ride (it could be an UberX or Uber Pool), and are forced to make a quick decision on whether to accept or decline the ride. If you're in a city with Uber's driver reward program, you could also get more info like where the rider is headed.... Then you need to get the rider to the destination as efficiently as possible, choosing between Uber's map, Google Maps, or Waze — all while following traffic laws and keeping your eyes on the road.... The driver app also has a heat map showing where you can earn more or are more likely to get a

ride request. It also has a profile that shows your driver and Uber Eats ratings, as well as your acceptance and cancellation rates. Last year after Uber CEO Dara Khosrowshahi came onboard (and hilariously sucked at driving), Uber overhauled its driver app. So now it more clearly shows your earnings breakdown, including how much you earned, what the rider paid, and Uber's cut. Despite all the information, some drivers want to know even more. In the UK, a group of drivers is demanding all the data Uber has on them and their rides. Here in the U.S., it gets pretty detailed. For one of the rides during my ridealong, Uber showed it lost 32 cents. Drivers here may be earning money, but Uber is still working out how to make a profit. Last year, it lost \$1.8 billion. In its IPO filing earlier this month, Uber competitor Lyft listed nearly \$1 billion in losses... "I care a lot about my rating," he said about his 4.98 rating. And it goes both ways — he won't pick up riders with low ratings since he knows that's a major red flag and could come back to hurt him."

2 of 2. Community Development: More Resilient Community-Based National Development instead of Corporate-Based or State-based?

Govindarajan, Vijay. 2012. "Reverse Innovation," TEDxBigApple Talks, https://www.youtube.com/watch?v=ztna1lt_LZE (18:57 min) "Vijay Govindarajan delivers a thought provoking talk on 'Reverse Innovation,' a term he co-defined referring to innovation emerging from developing nations. / Vijay Govindarajan is the Earl C. Daum 1924 Professor of International Business and the Founding Director of Tuck's Center for Global Leadership. Cited by BusinessWeek, The Economist, Forbes, and The London Times as the top thought leader in strategy, Vijay is well known for espousing Reverse Innovation -- innovation likely to be adopted first in the developing world before spreading to industrialized nations.

Buckland, Matthew. 2019. "How South African startups are solving informal sector problems," (18 March, 2019) <http://ventureburn.com/2019/03/south-african-startups-solving-informal-sector-problems-opinion/> [mentions several 'reverse innovation' apps that began in South Africa instead of were copies of ideas of Silicon Valley]

How Africa can lead the way in the Fourth Industrial Revolution
<https://www.weforum.org/agenda/2016/05/how-africa-can-lead-the-way-in-the-fourth-industrial-revolution/>

Africa's digital revolution: a look at the technologies, trends & people driving it
<https://www.weforum.org/agenda/2016/05/africa-s-digital-revolution-a-look-at-the-technologies-trends-and-people-driving-it>

4 Reasons Why Exponential Technologies Are Taking Off: Bitcoin and 3-D printing aren't just successful commercial innovations, but signals of a larger societal reset.
<http://www.fastcoexist.com/3034200/4-reasons-why-exponential-technologies-are-taking-off>

The Fourth Industrial Revolution: what it means, how to respond
<https://www.weforum.org/agenda/2016/01/the-fourth-industrial-revolution-what-it-means-and-how-to-respond/>

The limits of leapfrogging: The spread of new technologies often depends on the

	<p>availability of older ones http://www.economist.com/node/10650775</p> <p>Agenda in Focus: Africa https://www.weforum.org/focus/agenda-in-focus-africa</p> <p>Ben Onuoha. 2018. "Why Africa's Emerging Blockchain Movement is Growing So Rapidly" https://media.consensys.net/blockchain-month-in-africa-920945771100</p> <p>LinkedIn's Latest Survey Shows Why Social Selling Is Becoming King http://www.forbes.com/sites/louiscolumbus/2016/05/06/linkedins-latest-survey-shows-why-social-selling-is-becoming-king/#25f5ef9b48c1</p> <p>Schermer, Marcello. 2016. "I got to witness the African startup revolution, TEDxVienna (2016) https://www.youtube.com/watch?v=TgqZONIbt8k</p> <p>Oswald, Alexander. 2009. "Why Kenyans do it better," TEDxVienna https://www.youtube.com/watch?v=D9_6G8J6VJg</p> <p>Grosskurth, Jasper. 2014. "Futures of technology in Africa, TEDxJohannesburg (2014) https://www.youtube.com/watch?v=5RFZDHMfUU8</p> <p>Nana-Sinkam, Sam. 2016. "How Mobile Phones Are Shaping the Next Wave of African Innovation," TEDxNashville https://www.youtube.com/watch?v=PCUJXpVbRDk</p> <p>Shridharan, Anu. 2012. "Using cellphones and crowdsourcing to get water to the thirsty," TEDxGateway https://www.youtube.com/watch?v=e-LOBerPngA</p> <p>Besiga, Raymond. 2015. "Technology and the sharing economy. An African perspective," TEDxKampala https://www.youtube.com/watch?v=hUmFRwvnosc</p> <p>Pistone, Julian Pistone & David Steinacker. 2015. "The Power of Mobile in Africa," TEDxLugano https://www.youtube.com/watch?v=XWPFsSab10A</p>
<p>Week 11 – Class 2 Th, Nov. 7</p>	<p>Continued, 2 of 2. Community Development: More Resilient Community-Based National Development instead of Corporate-Based or State-based?, Lecture: Understanding the Precariat, and Three Policies for the Precariat?, Day 1:</p> <p>[1] <u>common features of the transforming relations of work and employment mentioned in Castells and Standing readings;</u> [2] <u>Were they pushed or did they jump?</u> into the flexible economy? There are both the people who are 'pushed' (negative) and the people who 'jump' (positive) into these same flexible options simultaneously instead of the idea of flexible work being entirely positive or negative (once more, ambivalent issues here like the 'evil monopolistic surveillance minded platform and multiple blooming good SMEs on it', a point mentioned earlier); policy options for stability and sustainability of the</p>

externalities in the digital economy? [3] Will we create more of the **sharing economy**? or [4] will we create other policies like **universal basic income** trials? Will anything stabilize our social relations as mega rich and massive flexible poor without steady jobs polarize the global economy's leading sector of digital technologies, with a shrinking middle class stability squeezed out in jobs going out? Or: [5] are the middle class jobs of stability just being transformed to ancillary networking tasks of the ongoing unstable/flexing arrangements of work and employment? [6] or will we create more **regional commons/P2P economies as a whole as an option** for ever more regionalized and networked forms of politics, economics, finance, education as our 'regional safety nets', etc.?.; Bauwens's ideas of the P2P Foundation

Day 1 related: 3 readings (Castells reading; Standing book excerpts and essay); and 1 video: Besiga's TEDxKampala video on African sharing economy as policy?; Standing essay showing other policies (1 of 3. More **corporate-based platforms of sharing economy**? 2 of 3. More **state-based universal income policy**, trial balloons?; 3 of 3. More **regional-based P2P civilization** of many, many different simultaneous regional commons issues worldwide, etc.)?

1 of 3. More **corporate-based platforms of sharing economy**? many examples, particularly the

Besiga, Raymond. 2015. "Technology and the sharing economy. An African perspective," TEDxKampala <https://www.youtube.com/watch?v=hUmFRwvnosc>

Continued, 2 of 2. Community Development: More Resilient Community-Based National Development instead of Corporate-Based or State-based?, Day 2; Lecture: Continuing, Three Policies for the Precariat? (see above description)

2 of 3. More **state-based universal income policy**, trial balloons?

Colson, Thomas. 2017. "The economist behind Universal Basic Income: Give all citizens UBI to help combat a 'neofascist wave of populism'," Business Insider (Jan. 5, 2017) <http://uk.businessinsider.com/free-money-universal-basic-income-guy-standing-economist-neofascism-populism-brexite-2017-1> [I disagree with his analysis that it is a 'neofascist wave of populism'; it is more neo-nationalistic wave of populism against the neo-fascist wave of corporate globalization, and the globalizers want to install universal basic income to save their crony corporate globalization projects and ongoing leadership of states more than they care about people in those states.]

Standing, Guy. 2016. "Universal Basic Income: Protecting the Precariat" <https://www.youtube.com/watch?v=Q2HXwTamdhk> (10:07) [many pilot tests of universal basic income worldwide from 2016 onward, discussed here; I dislike where he says he was invited and is attending a "secret meeting" on this with many international elites.]

Standing, Guy. 2017. "Editorial: Universal basic income is becoming an urgent

necessity," The Guardian/UK

<https://www.theguardian.com/commentisfree/2017/jan/12/universal-basic-income-finland-uk>

3 of 3. More **regional-based P2P civilization** of many, many different simultaneous regional commons issues worldwide?

Bauwens and the P2P Foundation ideas of policy/civilizational transformation to a more stable commons economy in the midst of the breakdown of work and employment regularities of the past?

Background: Bauwens has written 3 recent books, amongst which (with Vasilis Kostakis), *Network Society and Future Scenarios for a Collaborative Economy* have been published in English, Dutch and French. Michel currently lives in Chiang Mai, Thailand and is currently finalizing a Commons Transition Plan for the city of Ghent in Belgium."..."Michel Bauwens (born 21 March 1958) is a Belgian Peer-to-Peer theorist and an active writer, researcher and conference speaker on the subject of technology, culture and business innovation. Michel Bauwens is a theorist in the emerging field of P2P theory and director and founder of the P2P Foundation, a global organization of researchers working in collaboration in the exploration of peer production, governance, and property. He has authored a number of essays, including his seminal thesis *The Political Economy of Peer Production*. ... In the first semester of 2014 Bauwens was research director with the FLOK (Free Libre Open Knowledge) Society at IAEN, the National Institute of Advanced Studies of Ecuador. The FLOK Society developed a first of its kind Commons Transition Plan for the Ecuadorian government. Over fifteen policy papers the plan outlines policy proposals for transitioning Ecuador to what is described as a social knowledge economy based on the creation and support of open knowledge commons. One version of the plan is available online. [https://en.wikipedia.org/wiki/Michel_Bauwens]

More details here: <https://p2pfoundation.net/the-p2p-foundation/who-we-are> :

(P2P Foundation. Thailand/Belgium) Michel Bauwens is the founder and Vision Coordinator of the P2P Foundation and works in collaboration with a global group of researchers in the exploration of peer production, governance, and property. Bauwens travels extensively giving workshops and lectures on P2P and the Commons as emergent paradigms and the opportunities they present....Michel is also the director of research of CommonsTransition.org, a platform for policy development aimed toward a society of the Commons and a founding member of the Commons Strategies Group, with Silke Helfrich and David Bollier, who have organised major global conferences on the commons and economics.

Suggested videos of Michel Bauwens, many more on YouTube:

[1] Bauwens, Michel. Network forms emerging now & changing the world, "Community and the Commons" <https://www.youtube.com/watch?v=iCp2Vt-RqEE>

	<p>[2] Bauwens on sustainable ICT solutions: "my talk today...enormous explosion [& development opportunity] of digital commons" https://www.youtube.com/watch?v=XW-U7YvPk58</p> <p>[3] Bottom up: May, Timothy. 1992. "The Crypto Anarchist Manifesto" https://activism.net/cypherpunk/crypto-anarchy.html</p> <p>Torpey, Kyle. 2014. "Institute of Cryptoanarchy Wants to Build the Decentralized Economy," https://insidebitcoins.com/news/institute-of-cryptoanarchy-wants-to-build-the-decentralized-economy/25681</p> <p>Anon. 2017. "The parallel city of cryptoanarchy: Prague-based Paralelni Polis is a decentralized, cryptoanarchist community and organization with a unique story. It is a physical manifestation of an ideology that works towards a vision of the future - creating a system parallel to the existing one" [by using ICT only] https://cryptoinsider.21mil.com/the-parallel-city-of-cryptoanarchy/</p> <p>Redman, Jamie. 2017. "Cryptoanarchy Institute To Refuse Following EET Law – Interview with Martin Šíp" https://news.bitcoin.com/interview-cryptoanarchy-institute-to-refuse-following-eet-law/</p>
<p>Week 12 – Class 1 T, Nov. 12</p>	<p>Potential Flipped Classroom Reports on Section 3; Day 1, Discussion</p> <p>Catch – Up for MR3 section; Discussion of Reverse Innovation</p>
<p>Week 12 – Class 2 Th, Nov 14</p>	<p>MR3 papers due in class or under my door (inside my office) or by 5 p.m.</p> <p>MR4: Section 4 of 4: Mobile Revolution in Finance: Finance, Digital Currencies; Global Financial Flows vs. Regional Currencies (the exchange and transmission of money is changing)</p> <p>Digital currencies (Lecture): <u>Placeless</u> BitCoins, or <u>Highly Placed</u> Regional Complementary Currencies? It is All In Your Design, Yet Both May Lead to Community and Sustainability Facilitation; e-currencies run by major global private e-retailers; e-currencies run by states; e-currencies run by regional communities; the 'unbanked' and how they may access mobile banking more.</p> <p>Blockchains mined, raw text data https://blockchain.info/blocks</p> <p>Visualizations: Realtime Bitcoin Globe https://blocks.wizb.it/</p> <p>Visualizations: Realtime Bitcoin World Maps, Transactions and Mining Nodes https://bitnodes.earn.com/nodes/live-map/ https://bitnodes.earn.com/nodes/network-map/ http://bitforce5.com/</p>

<https://dailyblockchain.github.io/>
<http://bitcoin.interaqt.nl/>
<http://learnmeabitcoin.com/> <http://learnmeabitcoin.com/browser/node/>

Visualizations: BitBonkers - A bitcoin blockchain transaction visualization
<https://bitbonkers.com/>

Visualizations: Based on Cars on Highways, or People Waiting for Buses
<https://txhighway.cash/>
<https://txstreet.com/>

Visualizations: BitListen - Bitcoin Transaction Visualizer
<https://www.bitlisten.com/>

Visualization: Ethereum Blockchain
<http://www.ethviewer.live/>

Digging Deeper Into Cryptoassets: Data And Visualization Resources
<https://hackernoon.com/digging-deeper-into-cryptoassets-data-and-visualization-resources-8a922b62d51c>

Curated List of Other Visualizations and Information on Bitcoin
<https://github.com/xpfio/awesome-blockchain-visualisation>

Top 100 Cryptocurrencies by Market Capitalization
<https://coinmarketcap.com/>

Top Transactions of Cryptocurrencies, past 24 hours
https://coinlib.io/global-crypto-charts?theme=dark#global_money_flow

OnchainFX (www.onchainfx.com): The favorite among the cryptoasset ranking resources. Within 6 months of launch, OnchainFX has partnered with Bloomberg and Galaxy Digital Capital Management to provide their data on a new cryptoasset index. Unlike other cryptoasset ranking websites, OnchainFX offers an extensive amount of data points that can be added to the default view. Furthermore, coins are categorized and tagged by market cap size, sector, indexes, daily movers, potential scams and more. Visitors also have the ability to "publish view" and share it via a simple URL.

<https://hackernoon.com/digging-deeper-into-cryptoassets-data-and-visualization-resources-8a922b62d51c>

<http://www.onchainfx.com>
<https://www.blockchain.com/charts>
<https://bitcoinwisdom.com/>

Assignment:

Chapter 8: "Time, space, and technology in financial networks," by Caitlin Zaloom in *The Network Society: A Cross-cultural Perspective*, ed. Manuel

Castells (2004) [The software-'platformization' and consolidation of international financial trades]

International Business Times. 2013. "How Electronic Trading Is Changing Tomorrow's Trading Floor" [Chicago Mercantile Exchange (CME) acquired New York Mercantile Exchange (NYMEX) in 2006. In 2007, the Chicago Board of Trade (CBOT) merged with the Chicago Mercantile Exchange (CME) to form the CME Group. Now CBOT and 3 other exchanges (CME, NYMEX, and COMEX) operate as designated contract markets (DCM) of a single CME Group
<https://www.youtube.com/watch?v=dvyOPFzxFig> (5:47)

CME Open Outcry [video recorded in 2000, much open outcry has ceased to exist by 2018]
<https://www.youtube.com/watch?v=a27J3vWAIWM> (2:30)

Chicago Board of Trade (CBOT) CBOT, Soybean market pit trading, 2006
<https://www.youtube.com/watch?v=XZEBz01t5vg> (4:06)

A guide to open outcry arbitrage hand signals [many open outcry trading pits closed in Chicago in 2015]
<https://www.youtube.com/watch?v=yd31eEEWOoc> (3:37)

Chicago Mercantile Exchange (CME) to shutter [physical human] trading pits after 167 years [as more and more goes digital]
<https://www.youtube.com/watch?v=NqZqcqo1SLA> (3:15)

Chicago Merc hand signals: Dying art
<https://www.youtube.com/watch?v=M6mWd3EjtsQ> (2:01)

Open Outcry Futures Trading in NYC Ends, 2015: End of Era: Trading Pits Close
<https://www.youtube.com/watch?v=aluuekJIhWI> (1:55)

[Now It Looks Like This:] Watch high-speed trading in action [from 2013; 21M shares trade in first 3 minutes, with trading by computer decisions]
<https://www.youtube.com/watch?v=2u007Msq1qo> (2:50)

Franco, Pedro. 2015. *Understanding Bitcoin: Cryptography, Engineering, and Economics*, Prologue and Preface, Chapter 1; Chapter 2: Technology (Introduction); Chapter 3: Economics; Chapter 10, 11: History and Other Digital Currencies.

Maloney, Conor. 2018. "Bulletproof Bitcoin – Will Private Bitcoin Transactions be a Game Changer?" [December 8, 2018]
<https://cryptoiscoming.com/bulletproof-bitcoin-will-private-bitcoin-transactions-be-a-game-changer/> "Earlier this year [2018] a team of researchers published a paper called: "Bulletproofs: Short Proofs for Confidential Transactions and More." The paper essentially outlines a method of allowing Bitcoin to adopt privacy features like Monero or Zcash, something that could make major waves in the cryptocurrency community. At the moment Bitcoin is pseudonymous —

while it's not necessary to provide your name or personal information in order to send and receive Bitcoin, the blockchain keeps a record of all transactions and accounts, meaning that once an account is proven to be operated by an individual, their entire transaction history is viewable by anyone. Confidential transactions have been explored by other projects and researchers but proved to be prohibitively expensive in terms of fees – before Bulletproofs. Combining Bulletproofs with a technology called Schnorr signatures, project Dandelion could give Bitcoin unprecedented privacy capabilities."

Russo, Camila and Samuel Gebre. 2017. "Diary of an African Cryptocurrency Miner: A young Kenyan goes from doing odd jobs on the farm to growing virtual coins, as cryptocurrencies spread across the continent"
<https://www.bloomberg.com/news/articles/2017-11-03/diary-of-an-african-cryptocurrency-miner>

Korea shifting to cashless society

http://www.koreatimes.co.kr/www/news/biz/2016/03/488_199146.html ;
comments: http://www.electronicproducts.com/Mobile/Devices/South_Korea_plans_to_become_a_cashless_society_by_2020.aspx

Anand, Nupur. 2019. "This digital payments system from India is becoming a role model for many countries" *Quartz*,
<https://qz.com/india/1607647/payments-on-indias-upi-app-far-exceeds-paytm-mobikwik/> "A cashless India may still be a distant dream, but if it does come true, one entity would have spearheaded the mission: the National Payments Corporation of India (NPCI). This umbrella organisation processes around half of all digital payment requests in India. Its wildly popular Unified Payments Interface (UPI), launched in 2016, has simplified digital transactions to the level of a text message. It allows users to transfer money via an app without the need for any bank account details. Not surprisingly, UPI has left other modes of online payments far behind."

Desai, Falguni. 2016. "Why FinTech is Different in Asia," *Forbes Magazine* [April 29] http://www.forbes.com/sites/falgunidesai/2016/04/29/asias-fintech-potential/?utm_source=dlvr.it&utm_medium=twitter#244039da72a3

Think about Norway's cashless society nearing full circle; Norway citizens and even elites even start to worry about tyrannical implications:
<https://www.rt.com/business/173564-norway-cash-free-country/>

Could Sweden become the first cashless society? [Mentions Finland as well.]
<http://www.computerweekly.com/news/4500271520/Could-Sweden-become-the-first-cashless-society> ; Sweden's central bank puts brake on cash-free society <http://www.computerweekly.com/news/450280077/Swedens-central-bank-puts-break-on-cash-free-society>

2014 Government Plan Would Transform Israel Into The World's First Cashless Society http://www.blacklistednews.com/Government_Plan_Would_Transform_Israel_Into_The_World%E2%80%99s_First_Cashless_Society/35500/0/38/38/Y/M.html

Baby Goose Steps to Cashless Grid: European Union Set to Ban Cash

Transactions Over 500 Euros [in 2013] <http://activist-post-forum.947009.n3.nabble.com/European-Union-Set-to-Ban-Cash-Transactions-Over-500-Euros-td4025705.html>

Cashless Society = Monopoly, Surveillance & Huge Reduction of Liberty, Freedom, and Choice: States 'Eradicating Cash' are...
<http://theeconomiccollapseblog.com/archives/the-cashless-society-cometh-european-nations-such-as-sweden-and-denmark-are-eradicating-cash> (and nearly 500 comments)

Frisby, Dominic. 2016. "In proof we trust: Blockchain technology will revolutionise far more than money: it will change your life. Here's how it actually works", Aeon Magazine <https://aeon.co/essays/how-blockchain-will-revolutionise-far-more-than-money>

Amanda B. Johnson. 2016. 'Bitcoin is "the Slowest, Most Expensive, Least-Developed Currency"' (she is "un-banked": runs her life and business with it exclusively), in Finance Magnates,
<http://www.financemagnates.com/cryptocurrency/education-center-2/bitcoin-is-the-slowest-most-expensive-least-developed-currency/> [interview and video]

[Note: discuss/add something about videos of Iceland mining and Chinese bitcoin mining; video of Swedish e-church donation and signs refusing cash in stores; Bajpaj 2014 "five most virtual currencies beyond Bitcoin"]

The secret "James Bond" world of Bitcoin "mining," (processing the transactions of Bitcoin for the world), secret empires you never heard about running the bitcoin mines of the world:

Mining Bitcoins in Iceland | Focus on Europe
<https://www.youtube.com/watch?v=zKXWiYNmMkU>

Mining Bitcoins in Iceland | Tour of Genesis Bitcoin Mining farm (1:45)
<https://www.youtube.com/watch?v=kGIfe2Eiycc>

Life Inside a Secret Chinese Bitcoin Mine
<https://youtu.be/K8kua5B5K3I>

"BILL GATES - NOBODY CAN STOP BITCOIN" | Bitcoin Is Unstoppable (an assortment of various people talking about bitcoin and its implications from major media; start at 1 minute into it)
<https://youtu.be/k0HmrSfJwhU?t=1m1s>

Bajpai, Prableen. 2014. "The 5 Most Important Virtual Currencies Other Than Bitcoin," <http://www.investopedia.com/articles/investing/121014/5-most-important-virtual-currencies-other-bitcoin.asp>

Fintechnews Singapore. 2016. "27 Most Valued World Fintech Unicorns, 8 From

China," <http://fintechnews.sg/4915/fintech-ipo/world-fintech-unicorns/>

Opinion: Digital banking, by Francisco González, CEO of BBVA (a major Spanish bank with many fintech investments) "Fintech threatens to eclipse banks that do not adapt digitally" <https://www.ft.com/content/731bc8c8-6810-11e8-ae1-39f3459514fd>

Schwab, Katharine. 2017. "This App Mines Cryptocurrency On Your Computer—And Then Donates It". 'Bail Bloc uses your excess computing power to help low-income people meet bail.' <https://www.fastcodesign.com/90151068/this-app-mines-cryptocurrency-on-your-computer-and-then-donates-it>

Rapoza, Kenneth. 2018. "More People Opening Crypto Trading Accounts In Brazil Than Traditional Securities," *Forbes* <https://www.forbes.com/sites/kenrapoza/2018/05/30/more-people-opening-crypto-trading-accounts-in-brazil-than-traditional-securities/#537f081d7e21>

Buck, Jon. 2017. "Dubai Will Issue First Ever State Cryptocurrency," <https://cointelegraph.com/news/dubai-will-issue-first-ever-state-cryptocurrency>

Anon. 2018. "Social Media Comments on the Launch of Venezuela's Cryptocurrency," <https://www.telesurtv.net/english/news/Social-Media-Comments-on-Launch-of-Venezuelas-Cryptocurrency-20180221-0032.html>

Anon. 2018. "Bitcoin Has Zero Correlation With Dow Jones, Nikkei 225, Gold or Oil Finds New Study" <https://cryptonewsmonitor.com/2018/02/24/bitcoin-has-zero-correlation-with-dow-jones-nikkei-225-gold-or-oil-finds-new-study/>
"[B]itcoin has the lowest level of correlation with any of the other stock markets, oil or gold and it effectively amounts to zero. The highest found positive correlation is between oil and Dow Jones, while gold's negative correlation with stocks makes it a suitable hedging tool. Bitcoin's lack of such correlation makes it unsuitable for hedging according to the study authors because it does not respond to the price movements of other assets either positively or negatively. This lack of response makes it suitable towards diversifying risk, with the study finding that portfolios which include bitcoin have higher returns than those that don't... [S]tudy period was between November 2013 to February 2017. Thus includes the stupendous bull run in 2013, the crash that then followed, the lengthy bear market, and the beginning of the bull market in 2016, but not the stupendous gains that it saw in the later part of 2017. Results therefore may have changed as correlations do not necessarily stay static, but from observations even though bitcoin does for some short periods seem to correlate with stocks or gold, it is usually only temporary. In longer period, the study now seems to confirm, there is no correlation with the specified assets. But whether these findings extend to fiat pairs remains unclear. **Specifically, interest in bitcoin and cryptocurrencies more widely tends to increase in currencies that experience devaluation from observation, but we are not aware of any study that has fully analyzed the data to conclude whether that is indeed the case.**"

	<p>VIDEO/AUTHOR Bernard Lietaer: Money diversity; Monoculture of Money Creates Economic Instability - Bernard Lietaer Lecture, 23:33 https://www.youtube.com/watch?v=T9EI2PrDpmw (Lietaer was on the team that "invented the Euro" though came to regret its creation as too monopolistic, undemocratic, and with an inbuilt financial instability from both the former).</p> <p>INTERVIEW Bernard Lietaer on Complementary Currency https://www.youtube.com/watch?v=gyLfvKD2080</p> <p>Prof. Bernard Lietaer On Bitcoin (3 min.) https://www.youtube.com/watch?v=5IQiBADQzXo</p> <p>News story: "Icelanders can now each claim \$400 worth of Auroracoin, the country's new digital currency" (same in Scotland, Greece, Lakota Tribes (USA)) http://www.theverge.com/2014/3/25/5546192/icelanders-can-now-each-claim-400-worth-of-auroracoin-cryptocurrency</p> <p>Complementary Currency Bangla-Pesa in Kenya offers a glimpse of true sustainable development https://www.youtube.com/watch?v=CFIolsjwdWY</p> <p>Next Videos are Bitcoin and Blockchain technology related; Blockchain as a technology may be more revolutionary than the internet itself: it has wider potentials to revolutionize all four areas of life instead of just digital currencies)</p> <p>CuriousInventor. 2014. "The Essence of How Bitcoin Works (Non-Technical)," [5:24] https://www.youtube.com/watch?v=t5JGQXCTe3c</p> <p>CuriousInventor. 2014. "How Bitcoin Works Under the Hood," [22:24] https://www.youtube.com/watch?v=Lx9zgZCMqXE</p> <p>Tested. 2014. "Tested: We Buy a Bitcoin!" [from an American BitCoin ATM] [15:18] https://www.youtube.com/watch?v=vnm4xFC2xNo [caution: strong language]</p>
<p>Week 13 – Class 1 T, Nov. 19</p>	<p>Flipped Classroom Reports on Section 4; Day 1 (only 1 day), Discussion And lecture and/or MR4 questions or group project questions answered. Flipped Learning Day of Finalizing Project Teams</p>
<p>Week 13 – Class 2 Th, Nov. 21</p>	<p>MR4 short papers, due Flipped Learning Day of Finalizing Project Teams https://forms.gle/eLKZg6q4jocBhGSQ9</p>
<p>Week 14 – Class 1 T, Nov. 26</p>	<p>Summary of Course: Truly a Mobile Revolution in Development (overview lecture of all four areas)</p>

Week 14 – Class 2 Th, Nov. 28	Final Group Presentations and Discussion, Day 1 [*for those <i>who want more time</i> to integrate feedback to make their final projects better <i>before the deadline</i> : talk earlier, integrate improvements, turn in on deadline.] Your final group research presentation is about some kind of mobile and/or sustainable development issue or application in a country that is not the students’ own. See above description of the project under “course requirements.”
Week 15 – Class 1 T, Dec. 3	Final Group Presentations and Discussion, Day 2 [*for those <i>who want more time</i> to integrate feedback to make their final projects better <i>before the deadline</i> : talk earlier, integrate improvements, turn in on deadline.] Earlier presenters come to this session as well for attendance, listen to the remaining talks.
Week 15 - Class 2 Th, Dec. 5	Final Group Presentations and Discussion, Day 3 ; last class if still there are groups to present Earlier presenters come to this session as well for attendance, listen to the remaining talks.
Wed, Dec. 11 Group Project Due	All groups’ official deadline for final group projects is 5:00 p.m. on this day. <ul style="list-style-type: none"> • I want a printed copy of the group project <u>and</u> • I want an emailed digital copy on this date. • Note final group project will be accepted beyond Friday, Dec. 13th with a reduction of points for each day until Dec. 13th.
Friday, Dec. 13 Late Deadline	Group Project Points off Every Day for Being Late Until This Day, Nothing Accepted After This Day The final group project will be accepted until today, with a reduction of points for each day after the deadline of Dec. 12.
Monday, Dec. 17 th	We have no final exam--and no class/exam on this day which is our final exam day. Thus our last day of class on Dec. 5 th .

***NOTE:**

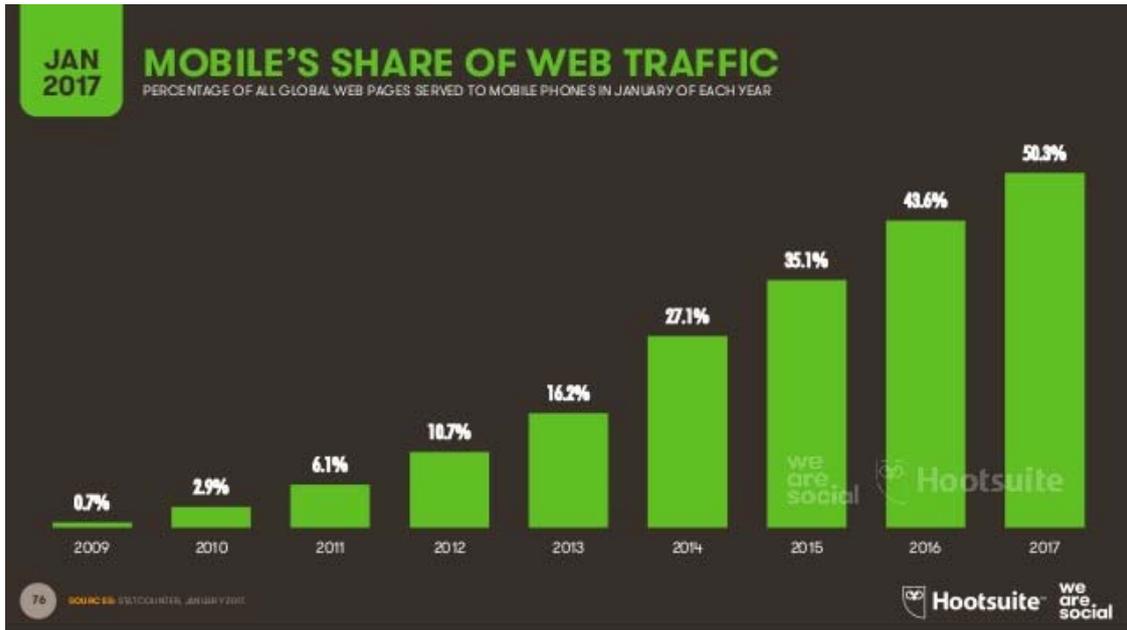
- Due to variable class discussion times, topics may shift to later dates, but I will make every effort to maintain the sequence outlined here.
- Some of the class schedule may change. The instructor will inform the students in advance.

- The instructor reserves the right to change the syllabus or some topics of the class within as he sees fit.

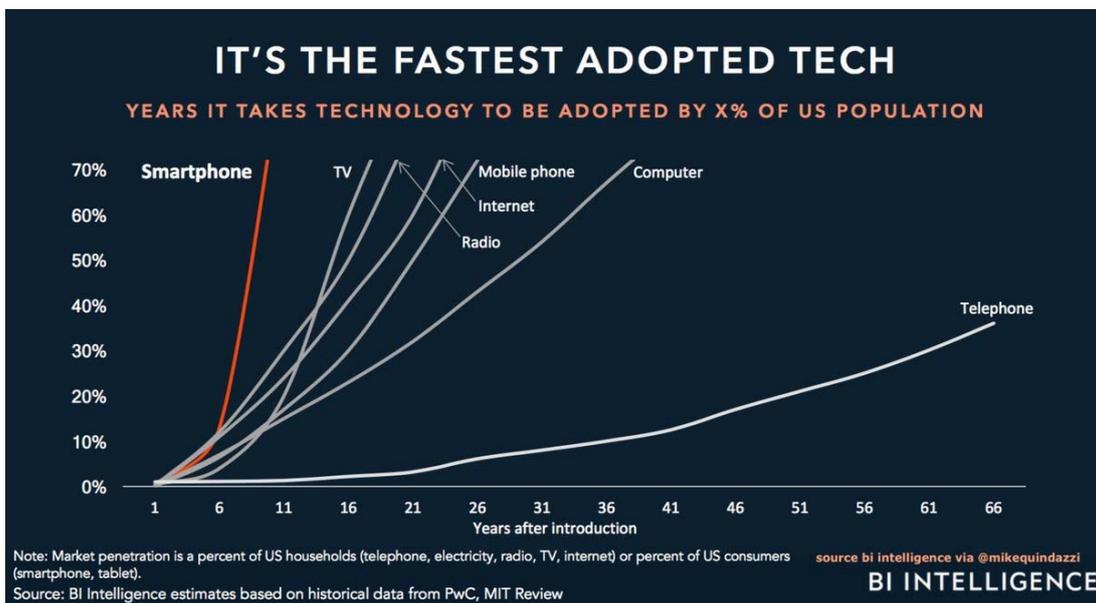
Longer Essay with Important Terms of the Course: Part One: Speed of Mobile Phone Adoption, and South Korea as Harbinger of the World to Come?

By early 2015, 50% of the whole world owned a mobile phone. By early 2017, it had grown to 66% of the whole world that owned a mobile phone and 50% a *smartphone* in 2017. (Akamai, 2017). Plus, last year, for the first time ever, mobile phone ownership jumped ahead of internet access: ‘only’ 50% of the world in 2017 had dedicated internet while 66% of the world had a mobile phone. Thus, mobile is becoming the central medium of our global and national cultures, and this is becoming far more prominent a phenomena in less developed countries than in developed countries.





On the surface, this is extraordinary. This has happened in less than a decade. The *smartphone* has been one of the most rapidly diffusing technologies in modern history, even faster than the *mobile phone*:



During this decade, beyond the United States (where the first ‘clusters’ of such technologies developed), other countries are cresting over 50% smartphone saturation—creating vast hegemonic influences and adjustments on the way daily life is lived for everyone involved, even the excluded. For instance, two years after the chart below, Kenya is 44%. Kenya has grown from 26% smartphones in 2015 to 44% smartphones in 2017—all this with only 50% of the population with electricity.

Smartphones are more common in Europe, U.S., less so in developing countries

Percent of adults who report owning a smartphone



Note: Percentages based on total sample.

Source: Spring 2015 Global Attitudes survey, Q71 & Q72.

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In fact, in many sub-Saharan countries mobile phone networks are coming first, and then this seeds the greater desire for electrical stability and even secure cryptocurrency networks—all delivered via the mobile phone network as well. It is a different model of development from the expectations of that Europeans will continue leading (seen in the ideas of modernization theory, dependency theory or Sassen’s theory of global cities.)

If ‘hegemony’ around the networks of smartphones or mobile phones will be defined as 50% or above, some countries are already reaching what I will call ‘saturation.’ This is a subjective term, though I take it to mean something near 90% or more of a country’s population involved in some aspects of networks of mobile phones and smartphones. However instead of the United States or European countries leading on early saturation, on the crest of this mobile revolution is South Korea. **By 2017, South Korea became the world’s “triple first”: the first completely saturated (youth and working age adult) mobile phone culture, the first fully saturated national internet access, and with the fastest bandwidth globally.**

Let’s disaggregate these “triple firsts.” By 2013, South Korea became the world’s first smartphone-saturated youth culture with 97.7% ownership for ages 18-24. (Emarketer, 2013). (For a comparison, in 2012, U.S. teenagers were at 50% smartphone saturation). By two years later in South Korea, in 2015, there was a 100% smartphone penetration extending from this already saturated youth culture into young working adults, another world first in saturation (PEW, 2015). By 2017, another saturation plateau was reached when nearly 100% of households in South Korea had internet access, another world first, breaking its own previous world record of 94% in 2015 (PEW, 2015; Ramirez, 2017).

Third, South Korea as well has the world's fastest internet bandwidth for ten years running (2007 to 2017). Presently it is at 28.6 MB/s, while the U.S. average is only 18.7 MB/s (Akamai, 2017).

This Korean mobile/internet speed **is far above** the currently small handful of second-place countries with comparably high speeds like (in order) Norway, Sweden, Hong Kong, Singapore, Japan, Denmark, USA, UK, and Taiwan (Akamai, 2017). [Hong Kong may have jumped ahead in mobile bandwidth speeds in 2018, though Hong Kong is a mere global city state. South Korea has 5 times more people than it, and has 50 million people living in this saturated way.] Plus, to foreshadow more is to come, South Korea introduces the entire world to the first test zone of "5G" mobile internet speed around Pyongchang when it hosts the 2018 Winter Olympics—reputedly close to 'a movie download in a second.' By 2017, over 50% of the South Korean population already had access to subscriber services of what is called "4.5G" (which is comparable to 5G in speed, and yet using pre-existing network arrangements.)

It is the contention of this course that Korea's saturated "triple firsts" are a harbinger of the direction many other countries are going, and maybe the whole world in a 'mobile revolution in development.'

Part Two: Themes of Mobile Revolution

Let me paint a big picture of **several themes interacting** unpredictably into our future. Read this to understand the big picture of the course. **Read the boldface** to understand the important terms and concepts of the course. There are ten points below. Read this before the class, and then near the end of the course, re-read it. You will see how much you have learned.

First, I include history lectures and readings about **the huge changes of development strategies that undeveloped countries attempted** to use from the 1950s to the 1970s. There were uneven national successes, open failures, and huge setbacks—and generally by the 1980s a lack of other ideas for development except neoliberal ideas of development. Therefore, for 20 years a strange pair existed. For people in general, second, only **a regional community development by default** arose within many underdeveloped and weak-capacity countries from the 1970s to the 1990s. On the other side, third, **a neoliberal corporatist development got stronger, increasingly undermining democratic nations** in between with corruptions. Our global development increasingly was (and is) run more from private boardrooms in the commercial 'global cities' instead of from elected or representative national capitals. Our current real capital cities are these interlinked elitist and low-wage 'global cities' that expanded only in the past 40 years. **The 'global city' was only possible because of applications of computerized telecommunication technology**, as we will see.

On the one hand, as global corporatism went around the world, many nations were being 'developed' by lessening their regional representative governments. Many escaped poverty in the past 20 years in this globally economic way. On the other hand, fourth, many lost representative development and accountable governments in the process (if ever having it),

instead of gained them. Other countries were without globalized development and without national development either. They were offered nothing beneficial whether economic or political in improvement in this global economic regime. This is **the ‘bottom billion’** we will discuss. About 4 billion people have slowly been pulled out of poverty by globalized development, while 1 billion people are in ‘triage’ and have remained in stasis or destabilizing booms and busts for 40 years. Collier will argue they are stuck in **‘four traps’** and poverty is not one of these traps.

Fifth, Sandbrook and his team argue that we can have economic globalization *and* strong national welfare states together, with already several examples of this hybrid mix of **‘social democracy in the global periphery.’** Sandbrook talks about many factors that led to these contexts politically, **yet he ignores that economically almost every example he has (Mauritius, South Korea, Kerala in India, etc.) are based on the mobile revolution in development or Larson’s “digital development.” Costa Rica and Ireland are other countries that quickly developed only once choosing ICT-based developmentalism.**

However, the ‘bottom billion’ were placed in a non-developmental purgatory—until (sixth) **the increasing use of a software-led ‘mobile revolution’ as a development paradigm itself from the early 21st century onward to the present merged with the ongoing community development tradition by default.** This centrality of this software-led development for the world’s poor countries is a result of the network effects of aggregated smartphones. Smartphones became a novel hardware and social infrastructure, equally among political citizens and economic consumers alike, in scales inconceivable only a decade earlier. Developing a ‘killer app’ now can develop a country and remove the marginalization and alienation of an underdeveloped region—politically, educationally, economically, or financially.

Seventh, paralleling the ongoing challenges of how to catalyze human and economic development, there was **the steady and ongoing miniaturization of computer hardware.** This computer miniaturization was occurring *quietly* in the background from the 1950s into the 1970s, in the same period of such *loud* socio-economic, developmental, and political ferment worldwide. The 1970s to the 1990s miniaturized computer hardware so much more that it made later mobile revolution possible within another decade after that. By default, ‘mobile revolution in development for the people’ links with past ‘community development for the people’ in any ongoing contexts of weak, failed, corrupt, or non-developmental states. Eighth, by the 1960s, this involves **ever-faster computing linked by ever-faster telecommunications** for the first time in world history. This makes a novel communications regime of **“CDEM” or computerized digital electronic media—with huge implications for networking, culture, and even mentalities.**

Ninth, for the hardware, we discuss who, where, and under what political economic and cultural contexts did these first **technology clusters** of ‘computer telecommunications’ like Silicon Valley develop. Truth is stranger than fiction when it comes to computerized telecommunications and the ‘cluster culture’ it made. No one could have imagined a revolving door synergy could link un-inventive university bureaucracies and their expensive policed closed-door computers, secretive US military ‘Cold War’ cash subsidies, profitable public market startups and spinoffs, a libertarian love of individual freedom without community rules, its opposite of a community-loving hippie culture, and awkward shy nerdy teens and even pre-teens growing up in the cracks of this odd context. It was a context in

which tele-connected computers, for a variety of different uses and users, was the only common cultural thread. Teens and pre-teens were fixated on computer knowledge as ‘**hacking culture**,’ allowing for a dream world of idealistic godlike powers as much as bureaucratic adults were dreaming of it. They were developing a more playful ‘hacker ethic of joy’ in learning and sharing their hardware knowledge and software programming *as their teen culture*—and thus increasingly as their youth adult culture as the only culture they had ever known. They were constantly trying to best their peers at a hack. This first youth culture growing up in the shadow of hulking computers and the adults that ran them loved to break the rules (and break the law) around such machines and thus kept remaking and re-testing the rules of hardware and software possibilities versus their dreams of what it could do. Hackers asked ‘were there any rules at all if technological dreams of invention were reality?’ Or were their dreams the only rules? Were there any technological limitations? Was the only limitation imagination itself? How did 10-year old boys (and sometimes girls or even older housewives) achieve computer stardom by doing the unpredictable or what ‘normal youthful’ graduate students said was ‘too hard’ or ‘impossible’ to do with computers? Such scrambled status hierarchies of mostly *youthful skill and knowledge upended trained adults on a regular basis* by the second generation into the 1960s and early 1970s.

It happened *even faster once computers in the 1980s got smaller, got cheaper, got privately owned, and then of course got linked by private telephones (instead of only being central university mainframes).*

Thus the scale of this hacking culture was wider and more decentralized than ever. Next, young adults worldwide were initiating themselves into a shared cyberspatial computing and online culture club as their main culture—and the World Wide Web of HTML hadn’t been invented yet.

By 1991 it was, and a GUI interface (graphical user interface) made computing for the non-programming masses by the millions for the first time, and millions of private computers joined the existing internet backbones.

As existing hardware and software standards got old within a year or so, any generation of *adults were outmoded and outclassed even if they were hackers of the previous generation. Twentysomethings could never master and re-master* what was going on the unpredictable synergies of the cutting edge of technological change. An (ever) fresh youth culture regularly did, and then just as rapidly was replaced as well by another one. Yet hacking went on. This created an odd culture totally different than any on the planet before, where a group of seemingly immortal and ever-youthful teen replacements were in charge of a durable hacking culture of their always aging adult peers, and youth never got old.

So a strong utopian-minded culture developed around virtual communities and telecommunications computer technology. It really did develop a novel kind of ‘culture (cyber)space’ for all those disparate groups that would have seldom met regularly except that they shared a technological medium. Thus they shared regular crossing of any external boundaries. They shared transgressions. Their ongoing transgressions gelled a novel basis for culture without respect for many kinds of social boundaries or age hierarchies where skill was all at any age. What was respected were voluntary communities created around the technology. There was an equally novel way now to organize business and economic culture without joining more staid, static bureaucratic schools, businesses, and militaries. The irony

is decentralized telecomputing created a world of ongoing voluntary software-based communities that made up their own rules and yet were always dependent on deeply rule-bound bureaucratic hierarchies that mass manufactured and maintained the technology. Soon, after growing up in this cyberculture, these young adults wanted it to continue. Soon more decentralized corporate organizations were possible and culturally desired as well, with the same odd hours of work and poor 'life/work' balances as the hacking culture itself. Work became life. Such jobs were desired and paid lucratively despite having little of what would create stable jobs per se. The 'hacker' labor and worker ethic failed to care about that. Obsession and creativity fails to respect schedules or stable family-based jobs, or a 'good life/work balance.' Creative work in either hardware or software was done enthusiastically in voluntarily communities and of course in voluntary self-imposed isolation without breaks until exhaustion, sleep, and then the attempt to do it once more.

This was a cyberculture that financially rewarded creativity, dreams, and innovation in this technology. However, it was and remains at the expense of job stability and security for some, though for others it unleashed a hopeful development for marginalized people around the world in novel and unexpected networked ways—politically, educationally, economically, and financially.

Virtual communities became the main communities of our 21st century. Many software-based virtual communities have populations larger than most countries. Apps are the new nations, the new schools, the new markets, and the new currencies rolled into one.

To conclude, on the one hand, tenth, there have been **very limited cultural locations of hardware technology clusters** while software-based development is more evenly developmental and distributed worldwide.

To elaborate this point, only a small numbers of countries have ever successfully created the cultural 'chain reaction' conditions in ongoing hardware creation and cheap raw materials access expansions that matched the original 'Silicon Valley' experience. Even countries that are successful at the attempt to make and to remake their own versions of the 'cluster' experience of Silicon Valley and have the cash and contacts to access **rare earth minerals** may find themselves quickly outclassed and peripheralized in this 'fourth industrial revolution.'

Hardware changes so fast, and rare earth supply lines and prices change so fast, that even pioneer locations where it all comes together may get left behind quickly like hardware in Finland and Japan.

However, *software* is a different matter (no pun intended). Others like Sweden or Mauritius (or Japan in software instead of in hardware) seem to be succeeding in this software mobile revolution. Even some locations of sub-Saharan Africa seem to be succeeding as well. So, while hardware in this ongoing '**fourth industrial revolution**' has created novel inequalities in world development, only a handful of pre-existing wealthy countries and corporations are capable of competing as producer zones on a global scale in this frenetic and financially risky combination of attempting to deliver global scales of standardized technology yet amongst ongoing scientific innovation, quick planned obsolescence, and ever rarer and pricier 'rare earth' elements. Only a few countries or global corporations have the financial capacity to develop the hardware with these ongoing conditions—and have the wherewithal to keep

redeveloping the hardware to try to stay on top. Many countries, corporations, and consumers are failing to be anything except passive consumers of others' hardware as a result.

On the other hand, this huge global inequality and consolidation in the production of the *hardware* of information technology has been altered slightly in the 21st century due to greater equality and 'evenness' of world development possible in the *software* side of this mobile revolution. It is in *the software side and in the smaller peripherals* to standardized hardware (like IoT, linked wearables, or small hardware attachments to smartphones) that we see a truly more distributed worldwide mobile revolution in development—moderating the inequalities of its own hardware development. We live in a world where a 'killer app' will either develop a country or even invent a new country. It is normal now that virtual communities and increasing mobility creates flexible hundreds of millions of people larger than many geographic countries. And where there are this many people, there are economies, there is development.

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