Manifesto for an Open Future

“The door is open to the open source way to bring success to non technology companies, schools, universities, governments — to the world.” Jim Whitehurst, The Open Organization

Introduction

In his important book, *The Open Organization*, Jim Whitehurst, CEO of multi-billion dollar open-source software company, Red Hat, suggests a movement toward a future where the open-source philosophy[1] transcends the software development world and touches the core of human knowledge and collective thought power. It’s a future with immense possibilities, and today the world is taking its first teetering steps in the direction of this future.

At a frantic pace, the lines are blurring between consumer and producer, manager and employee, decision-maker and constituent. Companies like Uber and AirBnB have defined “latent supply” models that give everyday people access to opportunities once only accessible to businesses and employees. The 3D printer, Etsy and Kickstarter have rocketed to the fore the real possibility of the stay-at-home manufacturer and the overnight entrepreneur. Wikipedia has open-sourced knowledge, and Twitter and Facebook have provided information super-highways, putting power in the hands of hundreds of millions who would never have known it just 2 decades prior.

Yes, the new millennium has been a point of inflection in almost every facet. Our culture is changing, and our horizons and opportunities are expanding exponentially[2].

Perhaps most significant among these changes has been the emergence of large-scale collaboration as the single most effective driver of innovation, efficiency and success in the 21st century. As the physical walls come down inside offices and homes, the virtual walls – “silos” – that contain organizations are dissolving into a now-quaint past when industry secrets ruled the world and a company's advantage was defined by the degree to which it could keep its customers ignorant.

That world is no longer. Gone, too, are the traditional distinctions between nonprofits and for-profits. As these two sectors, once exercising a tenuous relationship of mutual need, move slowly toward the center, society as a whole stands to gain enormously. Now, a new world emerges – one in which societal benefit is as fundamental to success as the financial bottom line, and one in which collaboration and information sharing is the infrastructure on which organizations are built.

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1 If you're unfamiliar with “open source”, try starting with this Medium post. I like it because it's a gateway to a relatively non-dogmatic, unstructured discussion about open philosophies, but also points to a formal and official definition of “open source”.

2 This, in spite of equally dramatic shifts in global challenges like climate change, terrorism, war: see this PRI story and this Slate story for a tour of the numbers

With this writing, I hope to provide an idea of the possibilities of this new “open” world. In so doing, I do not intend to *change* the future. Rather, I hope to put forth a clear and cogent *vision* of a future that's already beginning to emerge, such that as we move toward that future together, we will step more deftly, confidently, and purposefully into it.

Where We Are

To fully understand the significance of the shift toward an open future, we need to share a clear understanding of where we are today and the biological, societal and economic movements that have brought us here. While a history of human existence is well outside the scope of this writing, I do think it would be beneficial to recognize some important trends.

Biology

First, and perhaps most interesting, is a brief look at evolution, and the idea that, from the dawn of time, collaboration has been a defining factor in the “watershed” moments of life on Earth. Evolutionary biologists have identified only a handful of so-called “major transitions” in natural history – shifts from one model of life to a radically new model. Nearly all of these occurred through new collaborations forged among individuals[3].

The first shift happened around 2 billion years ago as prokaryotic cells combined to form eukaryotic cells. Subsequent shifts followed, leading to increasingly complex organisms, and eventually to groups of organisms and human societies. Complex human societies congealed into governments, corporations, congregations, organizations, unions and more, and we're already witnessing the emergence of yet another level of collaboration, the consortium[4], which exists in business, government and the social sector alike.

Among these major shifts, there was one commonality: collaboration. With each increase in the level of collaboration among individuals, a new context was created which further aligned members toward a common goal and allowed members to become better at their specific task. With each shift, members became *ever more dependent on other members for their survival*. Interdependence – not independence – increases competitive advantage.

With that in mind, the arc of humanity from nomadic to agrarian to industrial to post-industrial – and in parallel, from individual to tribe to city-state to nation – makes more sense. Similarly, the role of the organization becomes obvious. Biologically, all organizations, whether corporation, union, government or nonprofit, are the same type of organism: a collaborative entity with highly specialized, interdependent components and a common, external goal. And they themselves form an interdependent ecosystem at a level above the individual. In other words, the new driving forces of evolution are acting at the group level, and our individual pertinence in the world is increasingly defined by how well we collaborate. Soon, this will include how well we create and foster *groups* that collaborate.

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[3] See Jonathan Haidt, The Righteous Mind, Ch 9 “Why Are We So Groupish?”, Section 4 “Exhibit A: Major Transitions in Evolution”

[4] In the business world, I believe the “consortium” is most commonly represented by the multinational corporation.

Society

On discussions of society and post-industrialism, I could never hope for better clarity or vision than that offered by Peter Drucker in his 1994 Atlantic Monthly article, The Age of Social Transformation. Thus, I will encourage you to read that, and attempt only to paraphrase Mr. Drucker where necessary and to build on his arguments here.

In his article, Drucker follows the evolution of society and the relationship between the traditional "worker" and "owner" from the industrial revolution to modern times. Perhaps one of the most subtle and important points that he makes is this: today, for the first time in history, capital is necessarily and consistently transferred from owner to worker. In a knowledge society, the productivity of an organization is defined by the quantity and quality of specialized knowledge that its workers possess. Thus, for a business to invest in its own success means that it must invest in the knowledge of its workers, and that knowledge is *inherently portable* – it can move freely from person to person, business to business, sector to sector, country to country.

Another important point that Drucker makes – and this is much more obvious now than it may have been then – is that it is now impossible to consider ourselves separate from the rest of the world. While his argument centers on what this means to our comparative advantage in the marketplace, I see another conclusion to be drawn: Since the emergence of societies, we've moved from smaller to larger units of collaboration, and this is just another shift along the same spectrum.

It follows, then, that as life on earth increases in complexity, our level of collaboration must advance. While Drucker recognizes that we are a member of a whole world and must learn to compete effectively at that level, I argue that we must instead learn to collaborate effectively at that level, adopting new structures and techniques to capture the value of such large-scale collaboration. These structures and techniques are encapsulated by the idea of the open future.

Economy

There are clear economic trends, too, that have prepared us for this transition. In the last 200 years we've witnessed a wholesale transformation from a subsistence economy focused entirely on the individual, to producer-focused industrialism[5], all the way to consumer-focused models and what I'll call the emerging "benefit" economy, comprising the on-demand economy, the sharing economy, and a greatly expanded social sector. Each subsequent economic model focuses ever more on the production of goods and services for us, by us.

Consider how this mirrors both the biological thrust and the societal thrust mentioned earlier: In the beginning, there were individuals. Increasing specialization of labor and interdependence resulted in a diversified economy, allowing for the existence of garment makers, cobblers, healers, educators, and a variety of other non-subsistence fields. All of these new fields enabled improvements at the community level (after all, a community with specialized educators and healers is on average more educated and in better health than a community without). As super-

[5] As I'll argue later, since the bottom line in this economic model is producer profit, the apparent focus of producers on the needs of consumers is illusory, representing only a means to benefit the producer, and not actually a legitimate attempt to benefit the consumer.

diverse national industrial economies emerged, the economy itself actually became a measure for the health of the nation with reference to other nations (a testament to the power of the new economic model to achieve group (i.e. “national”) success through individual success).

Now, with the emergence of the sharing economy, the B-Corp and L3C, the growth of the social sector, and certain elements of the on-demand economy, we've born witness to yet another important transition along the same spectrum: the “benefit economy”. This new economy is characterized by activities that focus on systemic benefit as the end, rather than the means, of the activity.

This difference between end and means is crucially important. The traditional industrial economy is “producer-focused”: all actions taken within the context of this economy are focused on the producer's wealth as the end, and the consumer's benefit (and by extension, community benefit) as the means. Products are brought to market only if a producer can gain substantially from them; prices are set not based on how much a product costs to make, but on how much a consumer is willing to pay; copyrights and patents are registered to protect producer profitability, not promote consumer benefit. This is what I'll call “internal” or “individual” focus for the rest of this writing.

The opposite is “external” or “community” focus: activities whose end is the benefit of the community or system as a whole. In such a model, money is still very necessary, and competitive pressures still drive innovation. However, these elements are the *means* by which the end (that is, community benefit) is achieved.

Consider this: Since evolution in modern human societies is working at the group level, evolutionary pressure is to eliminate free-loaders and promote group cohesion[6]. An economy based on transferring benefit from many members of the group to few is actually *selected against*, while a model based on efficiently delivering benefit to the group as a whole is selected for. In other words, the traditional industrial economy will sooner or later be phased out entirely, and in its place will exist an economy that functions very similarly – still responding to competitive pressure both internally and externally – but where systemic benefit is the end and transfer of money between individuals is the *means*.

One obvious example of this is the software industry. Traditionally, a company would identify a need in the market, create a proprietary solution (a computer program, like Word or Excel), and sell the solution to consumers, often on a recurring basis and under strict usage contracts. If the company could keep its solution secret, it could control the price of the solution and virtually guarantee the transfer of wealth from consumers to the producer in quantities far beyond what was necessary to produce the solution.

But for the past 20 years, there's been another model acting in parallel. Software is also produced at a remarkable scale without any expectation of economic gain. This is the open-source movement[7]. Open-source software is (with a few notable exceptions[8]) built first with the

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6 Again, see Jonathan Haidt, *The Righteous Mind*

intention of benefiting society. It is funded *secondly,* and only as a means to continue its development and its benefit to society[9].

The growth of the social sector, comprising both nonprofits and socially-positive for-profits, like B-Corps and L3Cs, is a particularly strong example of the emerging benefit economy.

The social sector represents a tangible example of an economic model with an external (i.e., community-oriented) rather than internal (producer-oriented) goal. Decades ago, this appears to have been very confusing to people. A bold line was drawn between business – characterized by efficiency, strict management policies, sound governance, metrics, investment, etc. – and the social sector, then considered “charity”, or in simpler terms, “not the main goal”; something extra.

Now, though, we can recognize that nonprofits and for-profits are, in biological terms, the same type of being: complex organizations that try to produce their declared results efficiently. The difference is simply the nature of their output. This is why we've now come to recognize that the essential set of elements required for running a successful nonprofit is nearly equivalent to that required by for-profits: strict management, sound governance, efficiency, metrics, investment.

The takeaway here is not simply that nonprofits should be run like businesses, since this should now be self-evident. The more important point is that the social sector is a real player in the economy, and is a member of the economic avant-guard. Social-sector organizations should be run “like a business”, but are uniquely characterized by external, or “systemic”, goals and increasingly selected for by evolutionary pressures. Traditional businesses, on the other hand, represent an old and passing form of economy characterized by internal, or “individual”, goals. One will create a new future, and the other will fade into the past.

Rethinking the Roles

With the preceding concepts in mind, we can now rethink the system in which we live. When the motives for producing a product are external, rather than internal, the rules change regarding *who is a competitor and who is a collaborator*. Society as a whole is realigned, and everyone who is a member of it is a collaborator, at least on a basic level. In this context, just as today a large corporation might share its R&D among departments, an open society of organizations tomorrow will share findings, data, results, lessons, progress and resources among themselves.

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[7] The actual definition of “open source” – and related terms like “Free” and “Libre” – seems to be a fairly contentious issue these days. I'm taking a lazy approach to the term in favor of simplicity. To me (and within the context of this writing), open source symbolizes the production of anything in a way that makes it freely available to and modifiable by users as well as producers, and whose production is primarily driven by a desire to benefit the system, rather than the producer.

[8] While one could argue that Google's open-source projects (like Android) benefit society, it's questionable whether the *motives* by which they're produced are purely benevolent and “system oriented”.

[9] This isn't ideal, as I'll argue later, but it does demonstrate an important cultural trend.

At first glance, you might be tempted to draw a parallel between this idea and the role of government. After all, government today facilitates the transfer of wealth and resources among individuals in society through public services, social programs and infrastructure. However, when you consider that government is yet another member of the same essential class of being as business and nonprofit, it should become obvious that we have greatly overburdened it.

To illustrate this point, imagine a society of 200 individuals. Now imagine that 180 of those individuals worked exclusively for their own gain, while 20 of them were responsible for providing all of the services and infrastructure that the 200 needed to live and work well[10]. In this scenario, two things are obvious: 1) the 20 who are working for the good of the society (i.e., the government) have far more work than they can handle[11]; and 2) the society will display highly individualistic, every-man-for-himself characteristics – an image that might seem disappointingly familiar in the fractious world in which we live today. Fortunately, we've already established that this individualistic existence is being biologically selected against – perhaps one of the reasons that we appear to be reaching a point of crisis.

The answer to these problems is manifest in the open future, and it is neither legislation nor an inflated government. To the contrary, it is a smaller and more narrowly focused government, coupled with a society more focused on external, rather than internal, goals. It is a government whose only job is to provide the *foundations* for such a society.

Take our society from above, but now consider that it is a “tribe” composed of organizations, rather than individuals. In this tribe, health organizations like hospitals, clinics, pharmacies, etc., take on the role of healers; educational institutions are the educators; construction companies are the infrastructure builders; churches and other social sector organizations are the welfare system. Government, then,would take on the role of the “elder chief”, who is narrowly focused on facilitating dialog among members and making decisions that reflect the common will of the tribe. This “elder chief” *does not* concern him or herself with building the infrastructure, healing the sick, helping the poor, etc.

The dynamic in this tribe – one in which all organizations, regardless of sector, are “externally focused”, rather than “internally focused” – is entirely different and much more inspiring.

Summary

We can now zoom out and view our current state of being in a larger context. Biological evolutionary pressures have begun selecting for high-functioning *groups*, rather than individuals. Our **success** now depends not on how well we *compete* with each other, but on **how well we**

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[10] Statistics from the Bureau of Labor Statistics suggest that local, state and federal government employs roughly 10% of the US labor force.

[11] You might be tempted to say, “well, that's why the government should contract work to private business.” However, when you analyze the pressures that govern this dynamic, failure is the only plausible result: Government gets its money from businesses and individuals; businesses are charted to earn profits for themselves; thus the only logical decision for a business to make is to charge the government enough for its services that it recoups as much of its tax contribution as possible – to the detriment of the other taxpayer in the system, the individual.

collaborate. Furthermore, society is no longer trapped in immutable “owner” and “worker” classes. **Businesses necessarily transfer capital to workers** on a continual basis through specialized education. New, **highly democratic and efficient economic models** are beginning to emerge that still respond to the competitive pressures that drive innovation, but also accommodate **highly distributed and accessible means of production**. Finally, the emergence of the social sector and the benefit economy demonstrates **a shift away from focus on individual goals and toward focus on systemic goals.** This allows for the opportunity to rethink how our “ecosystem of organizations” – that is, the collection of governments, businesses, nonprofits, unions, etc. that interact with each other on a level above the individual – functions.

The Open Future

And so finally, I believe I can propose a definition.

An “open” world is one in which uninhibited collaboration and access to data, information, products and services is seen as inherently valuable.

This definition may seem deceptively simple. To really understand what this would mean to the world, though, imagine how we treat other things that we consider inherently valuable. Human life is, perhaps, the most universal. In most societies, life is *protected and facilitated* legally, culturally and infrastructurally. There are both legal and often serious cultural consequences to taking a person's life[12]. Many public services like libraries and community centers, as well as public infrastructure like highways, sidewalks and parks, make it easier to live a good life. And don't forget that there's an entire emergency response system in place that works to preserve your life if it's in danger, before anyone ever talks about how much money you have in your bank account.

These are concrete structures that we've created in our society because we believe that life is inherently valuable.

Similarly, in an open future, it's reasonable to assume that legal, cultural, physical and virtual infrastructure will exist to both protect and facilitate unlimited collaboration and access to data, information, products and services. Let's take a closer look at these.

Law

Legal infrastructure[13] for an open world is necessary in the same way that it's necessary for today's world: to protect the rights and desires of the authors of products and materials. The difference – and it's an enormous difference – is in the desire of the author.

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[12] Think of the difficulties that ex-convicts have reintegrating into society.

[13] For the purposes of this writing, “legal infrastructure” comprises primarily licenses, but also the legal system by which licenses are upheld, among other things.

Traditional licenses work to maintain the rights of the owner to control his or her work. They are as restrictive as possible, allowing the owner to leverage the work to extract value from licensees – a clear representation of internal, or individual-oriented, goals. These licenses perpetuate the traditional economy and society.

In contrast, open licenses protect the *desire of the owner for the work to be and remain public*. In other words, they ensure that, as the work changes hands and undergoes public modification, the fundamental right of the *public* to access the work – a right bestowed by the original owner of the work – remains unchanged. This represents an external, or community-oriented, goal, and encourages a shift to a more open future.

There are already several important future-oriented legal licenses available for open products. Unsurprisingly, they have emerged as a result of the open-source software movement, but that doesn't completely limit their utility to software. The most lax among them (arguably the Creative Commons Attribution License) allows for the free use of materials in any context, provided that the author is given credit[14].

More complex is the GNU General Public License. This license is designed to fully protect the open nature of the work, and it goes to great lengths to do so. The full selection of open licenses is rather diverse, and includes the BSD license, the Apache license, the MIT license, the Common Development and Distribution license, and a variety of open data and multimedia product licenses, among others.

Culture

Culturally, too, we're already making the shift, and I believe that we're much further along in this transition than we may realize. Imagine the worldwide uproar that would result if Wikipedia began charging monthly fees for its services. Yet many Wikipedia users (myself included) pay monthly or yearly donations anyway. We call these “donations”, but without them, Wikipedia could not exist. Similarly, without a fee, most products and services wouldn't exist, yet we don't call our phone bill a “donation”.

Again, the difference is goal orientation. Wikipedia was built to benefit the community first, and a growing portion of the community – arguably the early adopters of the open future -- understands the need to take care of it. This fact will become more important (and much more evident) as we progress into the future. In fact, the first infrastructural services to promote this new model are already being built (see BountySource)[15].

There will be more drastic shifts, too. Our business-to-business relationships, for example, must change. In practical terms, unlimited collaboration and access to data, information, products and services means that when a business or organization makes an investment, the results of that

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[14] There are, admittedly, a few more details than this. Read about them here.

[15] I call these services “infrastructural” because I believe they're a fundamental part of how the open future works. In the same way that roads are required for the traditional economy to work, I believe services like BountySource and others that I'll mention later are required for the *new* economy to work.

investment are available to anyone – including would-be competitors. At first glance, this might seem like it would damage the incentive structures that result in better products.

However, recall that we're now operating in the Benefit economy and that intense collaboration results in advanced specialization. Within this context, it's easy to imagine an ecosystem consisting of much smaller, highly specialized organizations that work interdepedently to fulfill each other's needs and the needs of society. Among these are organizations whose sole role is innovation[16].

Take materials science, for instance. Today, an enormous company like 3M might fund research to develop materials for a new product. That research remains carefully guarded, and is leveraged only for the gain of 3M.

In the future, 3M might be an active participant in a new independent institution of materials science innovation – something comparable to the Linux Foundation, which supports development of the fundamental system that drives much of the internet. 3M might even assemble a small team to work at the institution on its behalf (just as Microsoft and Google support work at the Linux Foundation), ensuring that research is conducted in directions that serve its consumer base.

Importantly, though, 3M becomes a member of a larger collaborative system, and investments that 3M makes in materials science innovations go on to benefit the rest of the system immediately. And 3M wouldn't be alone. Other businesses that are interested in materials science innovations would also invest either modest sums of money or small contributions of staff time in the collective effort. The result is innovation that is on par with or better than results from the past, while eliminating the collective overhead of each company having it's own R&D department.

A more subtle, though far more important, benefit of this is that everyday individuals can also immediately access these innovations, *multiplying by many times the number of possible products that result from an investment*. What once was a closed process with private and finite results is now an open process with infinite possibilities.

It's important to recognize that these changes don't imply any mandate or legislation or compliance. In other words, no one would *make* 3M open up their R&D to the public. I argue that a company in the open future would do this in the same way that a company today maintains a useful blog or a freemium service. Sure, there's a residual benefit to it (in the form of inbound marketing), but more importantly, it's a practice that's simply culturally accepted and encouraged, and so no strict justification is necessary.

Infrastructure

I've already mentioned infrastructure a number of times in this writing, and indeed I believe there's much to say about it. Collaboration is often a burden, both emotionally and technically.

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[16] This already exists to a limited degree in the form of research universities.

It's often faster to do things alone. Results are more immediate, and gratification more pure when a product is yours and yours alone.

This is why it's so crucial that we create and maintain effective infrastructure to support the open future.

Imagine the difficulties of bringing a product to market before paved roads were widespread or machining tools invented. It would have been easier to just keep being a subsistence farmer. Imagine trying to be an ice cream producer before electrical infrastructure allowed for widespread and reliable freezers. It would be easier to remain a dairy farmer. Imagine running an internet business without high-speed communications infrastructure or easy-to-use e-commerce services. It would be easier to stick to brick and mortar.

Infrastructural developments have fueled a substantial portion of the progress we've made as a society, and I believe we're at the cusp of another infrastructural revolution. This time, though, – and perhaps unsurprisingly – the infrastructure is virtual. Rather than roads or towers or copper, we need software, protocols, best-practices and new organizations that allow us to overcome the substantial burdens imposed by collaboration. This new virtual infrastructure – much of which will take a position “below the surface”, as infrastructure often does, in the form of basic systems, services and invisible communications and storage protocols – will allow us to truly function at a level beyond today's most powerful organizations.

Some of this infrastructure already exists in a sort of primordial form. Much, however, has yet to be created, and all must be improved. Regardless, it must be oriented toward addressing a central problem: *How do we effectively collaborate?* More specifically,

- How do we manage data? That is, how do we capture it, structure it, classify it, standardize it, publish it and make it visible enough to be useful to our peers? How do we deduplicate it? How do we add to existing data? How do we search through it? How do we contextualize and isolate it while still maintaining its integrity in the system as a whole[17]?
- How do we communicate and coordinate with each other in a variety of complex contexts? For example, how do we contribute to a movement with no central leadership? How do we manage idea development and coordinate action in such a context?
- How do we build on one another's work, and how do we produce and share work that is easy to build upon?
- How do we support an economy built on open ideas and sharing?

A New System

These questions are difficult, and the answer is not to shoehorn new solutions into an old world. We need to transition to a new system where the rules of the game create the context for an open world.

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[17] Think of what happens when you put a statistic in a PDF that quickly goes out of date.

We need “centralized decentralization”[18] – a sort of controlled chaos or “societal operating system” (a metaphor that, incidentally, is surprisingly effective for addressing the aforementioned questions[19]).

To address the intricacies of managing data, we need protocols for data storage and publication, including standardized APIs and discovery systems that allow for distributed data indexing. We need a standard system for categorization that's highly structured, yet still flexible enough to reflect different perspectives and easy enough that end users will actually use it. We need a common language to speak when storing and retrieving data, and we need a way to integrate many small data sources into a complete and public data ecosystem[20]. This requires not only the technical capabilities to store and manipulate the data, but standardized methods for data handling and integrated curricula to ensure that users use them.

To address communication and coordination among organizations, we need a set of best-practices that are taught as standard curriculum in organizational management (whether public, private or social sector). These must include processes for merging and “franchising” out organizations, leaning heavily on the latter as a particularly elegant solution to solving problems common to a sector. We need better software for communication – self-hostable solutions that combine the benefits of email lists, IRCs, Slack and other forms of communication[21].

We need a new institution – the so-called “backbone” organization – whose sole purpose is to facilitate collaboration and communication among stakeholders in a defined field. This new type of organization has a central role in the “societal operating system” and must be responsible for driving innovation in the art and science of inter-organizational collaboration. It must serve as a vessel for collaborative research and development of common resources (example: The Linux Foundation). It must also serve as a neutral, third-party mediator when negotiating the resolution of mission overlap among organizations.

To address the challenges of creating bodies of work that can easily be shared and built upon, we need a total overhaul of the traditional idea of file storage and the cloud. Specifically, we need systems that can handle much more complex file meta-data (including ownership,

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[18] As discussed in the context of education (https://internationalednews.com/2014/03/25/centralized-decentralization-emerging-in-singapore/): the centralized coordination and management of decentralized and independent units.

[19] See Appendix A: The Operating System Metaphor

[20] Excitingly, there's already some real progress being made in this realm. See the Open Data Institute, CKAN, and Open Knowledge International among others.

[21] Slack is simply a glorified IRC, something that's been around since the beginning of digital time. It provides a few important benefits over IRC in terms of ease of use and entry, but sadly, it's goals are purely internal. We need a solution that provides these benefits without the caveats. Innovation in this field is low-hanging fruit that has been surprisingly ignored, probably because the open-source community is perfectly happy using traditional IRC.

permissions, sourcing, licensing, etc.) and that can manage and synchronize file sharing in a decentralized and often offline environment[22][23].

We also need a reliable identity and reputation solution that can be integrated into the management of our digital world. A user can no longer exist as a collection of disparate, unrelated “accounts”; rather, each account must be seen as one of many contexts in which a given individual operates and must be able to integrate with and relate to the rest of the individual's life.

Interestingly, Google Apps is an excellent proof of concept for many of these ideas, though its highly proprietary nature makes it unsuitable as a viable infrastructural implementation.

Finally, to address the challenges of creating a viable economy around open ideas and sharing, we need a platform for funding and encouraging innovation and progress, both digital and physical. This must include an interface whereby end users can specify and bid on features and products that they need, and producers can bid on contracts to implement solutions[24]. This platform must be highly visible and highly accessible to create a viable marketplace where innovation is justly rewarded and the community is quickly served.

To illustrate the power of such an economy, consider the following: Quickbooks online has over 1 million paid subscribers[25], each paying $30 per month to use the service. That's $30,000,000 per month for software that, frankly, doesn't work that well. If we were to redirect even 5% of one month of Quickbooks' revenues to support the development of GNUCash – an already fully-featured open-source financial software that has been around for years – we could create a truly remarkable piece of software in 6 months or less that not only directly reflects our needs and specifications, but also represents an investment in our community, rather than a sunk cost that's gone to feed a company that doesn't need to exist.

If you'd like to see how that works at a larger scale, check out Canonical, the official maintainer of the Ubuntu Linux distribution, or again, the Linux Foundation, which supports development of the core system that drives much of our digital economy today[26].

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[22] Federated cloud storage is a vehicle for this, though it is only in its infancy. Also, more broadly, object-based storage architecture.

[23] This is a painfully abstract topic, but for anyone in the software world, what I'm addressing is the need for effective “source code management” for knowledge products. In other words, we need the ability to freely comment, suggest edits, and manage derivatives of knowledge products (i.e. “fork” them) in the same way we do for source code using git, for example.

[24] Surprisingly, this aspect may be the easiest of the new necessities to address. As mentioned earlier, BountySource is a good start.

[25] http://investors.intuit.com/press-releases/press-release-details/2015/QuickBooks-Online-Passes-1-Million-Paid-Subscribers/default.aspx

[26] There are certainly some important shortcomings to address at a larger scale. Because cash is so often directed straight to feature development, there are rarely structures for traditional customer

Summary

I hope that the vision and viability of an open future is now both clear and convincing. It's a future in which **uninhibited collaboration and access to data, information, products and services is seen as inherently valuable.** It's a future **characterized and driven by external, rather than internal, goals.** It is supported by **innovative legal licenses that protect public access** to materials produced for public good. It is reflected in **emerging cultural norms, institutions and economic sectors that emphasize community benefit**, rather than individual benefit, and it is encouraged biologically by natural selection. It must be enabled by a **framework of virtual and intellectual infrastructure** purposefully designed to overcome the considerable challenges posed by aggressive, large-scale collaboration.

And it is happening. We are emerging from the rapidly-diminishing penumbra of the old world – a quiet transitional space that precedes a dawn whose light we can already feel. We already have the technological building blocks to solve the problems that the open future presents – we have only to put them together. We already have the culture that will bear the future on its wings – we have only to embrace it.

What You Can Do

So the question remains: “What does this mean to me?”

I believe it means you have a choice. You can either do business as usual in a past that will shrink around you and eventually disappear, or you can invest now in identifying how you'll fit into the new world. You can either wait around and let other people lead the charge, or you can cross over now with purpose and conviction. You can either continue to throw cash at costs that are sunk from day one, or you can invest in a future that will pay dividends. Here are a few real ideas:

Fund It

Perhaps the most concrete and important thing you can do is take stock of your current expenses and redirect that money into companies that represent the future. Again, Quickbooks is a good example. If you're one of the million-plus users paying for Quickbooks, get in touch with 20 other users and combine your yearly quickbooks budgets to fund features that will allow you to make the switch to GNUCash. Shoot for making the transition a year from now.

If your creative team uses the Adobe Suite, offer incentives for them to switch to free and open-source solutions like Scribus instead of InDesign, Inkscape instead of Illustrator, Gimp instead of Photoshop, and Darktable instead of Lightroom.

If you're using Microsoft Office, try LibreOffice instead (and use OwnCloud or Google Drive when you need to collaborate on documents).

Most importantly, take the cash you save by making the switch to free and open source software and pour it into developing improvements for these products (your own on-staff development

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service in place. However, this is an easy problem to overcome, given that one could simply buy customer service through third-party orgnaizations.

team can even lead these improvements). Every time you touch a piece of software, ask yourself, “does this support the open future?” If you're not sure of the answer, check alternativeto.net for options. If a given open solution isn't good enough yet, consider funding it directly or through BountySource.

And every time you touch a non-software part of your business, ask your self the same, and find ways to rebuild your business or project with future-oriented solutions.

Importantly, though, please, don't expect open source products today to be comparable in any way to their proprietary “competition”. The comparison would be David and Goliath times 10. Most of these products have had absolutely Zero investment, so the fact that they exist at all is a miracle. Our job going forward is to fund them feverishly – to redirect the hundreds of millions of dollars that we pay as a society every year for office suites, creative suites, operating systems, CAD software, CRM, intranet, inventory management, accounting and other softwares to open-source projects, so that in 10 years, we'll have solutions that are 10 times better and that cost 10 times less. That's ROI.

(It's important to note that of course it's not just technology companies that represent the future. Your choice of suppliers, for example, may include businesses that are more or less future-oriented – more or less financially transparent, more or less collaborative, more or less agile – and you can make future-friendly choices there, too.)

Model It

Another thing you can do as a company is open up. The open future means open books, open strategy, open execution, open products, open data. Right now – in this very moment – someone somewhere is investing resources in solving a financial, strategy, execution, design, or statistical problem that has already been solved. These solutions need to be easily available so we can stop wasting resources on them and start building cool new products and services.

You can contribute by simply open-sourcing yourself. Invest in a platform that allows you to publish your data, and work to comply with Open Data standards[27] as you collect data about your operation. Publish your strategy and the details about the decision-making process that led to it on your blog. Publish your tips and tricks on execution.

If there's an author that has a planning or execution system that you've found particularly effective[28], link to it. When you invest in R&D, reach out to other players in your industry to explore collaborations. Importantly, talk to them about the Benefit economy and external, rather than internal, goals. Make sure to publish your process and findings.

But make sure to be careful, too. If you're still reading by now, you may be an early adopter. Sadly, early adopters front much of the investments that allow new futures to emerge. These investments are concretely monetary, in the form of competitors who take your ideas, customers who decide they don't need your services after all, since you've given them the tools they need

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[27] Again, check out the Open Data Institute, among others.

[28] Verne Harnish, for example

to do it on their own, and up-front cash investments in new companies and solutions that others don't yet believe in.

These investments do sting sometimes, and it's important that you truly believe in them before making them. It's equally important that you make them at a time that's really right for you.

Live It

Don't forget that, no matter how complex our organizations, they are still composed of individuals – ourselves and our collaborators. Because of this, it's important to consider how you'll fit into the open future personally. Are you thinking about where the world is going? Is what you're doing contributing in a positive way, however small or large it may be? Is there knowledge in your head or in your hands that could benefit others? How will you unlock it? How will you make it available to the world? These are conversations that we can all have with friends, family, coworkers.

Our world is facing some truly unprecedented challenges today, and those challenges can only be met by unprecedented collaboration. Let it start with you.

Questions

Finally, I'd like to address a few of the questions about the open future that have yet to be answered. Inevitably, we'll run into these and more as we move forward, and I think they'll often be uncomfortable to face.

Branding

Brands and brand identity will certainly be a hurdle for movement toward the open future. Many brands are defined by their products. This is fine for now, but it presents real challenges in an open future. In today's world of enormous, hierarchical and closed organizations, it makes sense: an organization invests in private R&D, develops a product that's better than the competition by carefully guarding its investment, pours money into convincing consumers that the product will make their lives better, and sells millions of units. An obvious example is Apple and the iPhone.

What would happen to Apple, though, if the iPhone were the result of a massive collaboration among individuals and organizations? Who would they be if not the producer of the iPhone? Well, if we decouple Apple from the products they create, a new identity emerges: Apple is a highly closed, self-focused, traditional enterprise that's neither good for society nor for the environment. In short, not a very attractive brand.

Interestingly, this leaves room for the product to create a brand and a life of its own. To use the same example, if the iPhone were the result of a massive collaborative effort (like Linux, for example), it would represent interface cleanliness, aesthetic beauty, and attention to detail. It would appeal to a specific group of people who would use it and love it. Importantly, though, because of the collaborative nature of its birth and development, it would be easily interchangeable with other similar products, like Android phones, Windows phones or Ubuntu phones: it would become a commodity.

Commoditization

Traditionally, commoditization is the much-feared transition of a uniquely identifiable and desirable product into one that can easily be exchanged for a different one. This is feared because it implies the redirection of funds from one corporation to a different one and thus a loss from the point of view of the original corporation.

The ability to easily exchange products, though, is a gain for society, and future-oriented companies are already beginning to embrace that.

In an open future, though, this isn't the case.

Why do the people behind the product matter, though? This may not be immediately apparent, but it's actually fairly simple: Your purchase of a product transfers wealth and power (even if in minuscule amounts) from you to others. You care about who these people are because you're endowing them with the power to affect your world – positively or negatively. The brand serves as a guarantee that you know to whom you're giving your money.

So what happens when a product is the result of a collaboration of dozens of companies and thousands of individuals? It seems to me that in this circumstance, the product would become a commodity (i.e., easily exchanged with another similar product of a different brand), and its brand would serve simply to identify it among other commodities, implying nothing regarding the culture and values with which it was produced.

On the other hand, a company's brand would be decoupled from its products, instead coming to serve as a more pure representation of its values and culture. The company's brand would be defined by *which projects it contributes to*.

Workforce

How will businesses handle fluidity of workflow? The only way to guarantee gains is to standardize investments across the sector. Thus, all businesses in a given sector can be expected to contribute equally to the education of their employees, such that employees can freely move among the businesses with little concrete loss by the collective group of businesses.

Pay Imbalance

How can we explain employees wanting higher wages? Higher wages simply represent a person wanting more control over *how* they benefit society. A person who asks low wages might be someone who agrees strongly with the role of the company in society and doesn't feel a need to contribute further. Someone who asks high wages might appreciate the role of the company in society, but feel that other areas of society need more benefit and may then apply his or her disposable income to that area.

Appendix A: The Operating System Metaphor

To me, the tech world is the “California” of enterprise: What happens in tech eventually happens everywhere else. Agile development, with a history reaching all the way back to the 50's, is a cornerstone of the tech development process. It's also now the buzz of the business world. Distributed development, another cornerstone in tech, is now being touted as the future of business via the “team of teams” model formalized in Stanley McChrystal's book of the same name. Latent supply economics, a given for open-source software development, is now a primary disruptor in the business world.

This is actually somewhat easy to explain. Effectively, technology is the only real-world application of pure systems thinking. Thus, as humans evolve culturally to accept and embrace systems and the logic on which they're built, it seems obvious that the real world would simply fall into line behind the latest developments in technology, mirroring with increasing accuracy the way that tech systems are built and maintained.

This is why I believe the computer operating system is such an effective metaphor for how the open future might work. An operating system manages to create an environment that is at once structured and unlimited. Crucially, it provides a well-designed and consciously maintained framework on which to build tools and implement best-practices *without forcing components to comply*. In other words, it creates the context for success without actually limiting the freedom of individual components to do what they want. (If your computer has ever crashed, you've witnessed the fact that a program actually has the freedom to completely destabilize the system if it wants to. We simply *trust* that programs won't do that.)

The operating system also maintains an overall view of the system as a whole. It knows what's plugged in and what's not. It knows how many resources are available in total, and how many are currently being used and for what. It can both receive updates from individual components in the system and distribute updates about the state of the system as a whole, encouraging components to utilize this information in ways that optimize solutions within the context of the whole system, rather than just their part[29]. It provides infrastructure that facilitates efficient and effective communication between individual components. It also facilitates the capture and storage of data over time in a way that's useful to components and the system as a whole.

Perhaps most importantly, an operating system is only a “venue”. The true power of the system emerges when programmers agree on *how to use* the system – that is, when they define best practices and protocols on which to build.

Thus, the elements that the system provides combined with the way that programmers agree to use the system result in better alignment, coordination and interdependence among components, and better and more complete data management, visibility and availability – a better world for all.

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[29] This concept is central to systems thinking, and is well explained in David Peter Stroh's *Systems Thinking for Social Change*.

Appendix B: Concrete Solutions

The following is a detailed catalog of concrete ideas for creating the infrastructure of the open future. As mentioned previously, many of these components already exist in some form or another. I'll try to reference them directly when I know about them, but I'd also like to remain abstract to a certain degree, to allow for the specification of solutions that I consider to be more purely “ideal” and not simply “good enough”.

Directory

It has become obvious in recent years that we waste enormous resources creating things that have already been created. This happens frequently in the social sector, but also in the software world (even, or perhaps *especially*, in the open-source world), in government and in business.

The solution seems simple – create a directory of all ideas that are currently being implemented – but of course the technical challenges involved are considerable. For one thing, how do we categorize ideas, such that we can know that even if someone isn't doing exactly what you want to do, they're doing something that's close enough to be applicable? How do we even come up with a useful definition of what it is that you want to do, when ideas are often defined and developed significantly after they're originally conceived?

One possible solution could be a web service – call it openideas.org – where people go to search and register ideas. Imagine you go to openideas.org -- a site similar to kickstarter -- and

you go into your account and buy $40 worth of votes. You search for gnucash, find a list of suggested improvements for it, find a suggestion to implement a feature you really want (maybe a new reporting interface) and throw $20 of votes on it. One hundred more people do the same, and a developer comes along -- any developer -- and bids to take the $2000 to implement the feature (since gnucash is an active project that already has an owner, the owner has to approve the bid before it's made available). Just as with ideas, users can up-vote (or down-vote) certain bids, or defer their votes (which are proportional to the amount they've promised to the idea) to another user or to the project owner.

That developer gets approved by a certain majority of voters and he delivers the product. The product is approved by the project lead, and at that point, your $20 -- along with everyone else's promised investment -- is transferred to the programmer.

Optionally, the project lead of gnucash can specify a percentage up front that goes to the project pot from every completed job (this, of course, is clear in the terms for the bid).

What's really fun about this is what happens when popular new ideas emerge that don't have owners.

Say I want the Symio platform to exist, but I don't want to build it myself. I put it up on openideas.org as an unclaimed project and throw $100 of votes behind it. I run around for a year talking it up and get all kinds of other people to throw votes behind it, as well as ideas for how to improve certain aspects of the idea or how to implement other aspects of it, etc. It's up at

$10,000, but still unclaimed! Now a bid comes in, but not great. No one who invested in the idea approves and the bid is rejected.

As the investment grows -- unclaimed -- the idea becomes more and more attractive to people who can implement it -- and more and more robustly specified by its would-be investors and the community --, and eventually you start getting some really great bids in. The price is now surpassing $60,000 and you get a real quality programmer in there with a great reputation who gets approved. He or she assumes ownership of the project and the rest is as above.

Now enter in a reputation system and some subtle control structures and regulations regarding when cash is transferred and to whom and you've got a new way to encourage the creation of great products – both physical, service-based or virtual --, combining crowdsourcing, crowdfunding, and open-source! And even better, you can take a reasonable cut to stay self-sustaining, even charging a nominal overhead for the purchase of votes (though I wouldn't necessarily want to discourage people from buying and applying votes).

Pool of Collaborators

Currently, it seems that most collaborations are forged by University students, and sometimes by tech incubators. We need to formalize institutions that facilitate the search for collaborators. It should be made available online, but also it should be optimized to match people of a certain level with others of a similar level. Universities and tech incubators already do this, but it seems that they are unnecessarily exclusionary. Each institution is a silo inside of which members can freely collaborate, but whose walls are difficult to penetrate. We need to provide a common space these institutions can use, but that regular people can also use. Something like Couch Surfing but for collaboration.

Git for Knowledge Works

While programmatic interpretation of knowledge concepts is still prohibitively difficult (if not completely impossible), it's not unreasonable to address the problem of collaborative knowledge works with a simple markup system.

For example, Git breaks source code up by new lines. A similar system for knowledge works might catalog human-labeled concepts, and break each concept up by sentences instead of lines.

In such a system, I would produce a work, and then go back and label each key concept. Some clear examples of concepts would be “sections”, but even within sections are various “points”, and within “points” are various “examples”. These are all elements that comprise the hierarchical “concept catalog” of a knowledge work, and they can be tracked as they evolve. (Certain points may be reordered within a section, for example, or sections reordered within a document.)

Hierarchical IRC

This would be a self-hostable service with end-to-end encryption that allows users to communicate in cascading subject hierarchies. For example, The Black Lives Matter movement might have a global conversation which is parent to national conversations, which each are parents to state or regional conversations, etc. Someone who wants to see what's going on at a global level can analyze all of the conversations together, while someone who wants to focus only on their city can tune the rest out. Furthermore, there can be two-way communication between more- and less-specific levels of hierarchy. Chicago's BLM movement can communicate with the Illinois-wide movement and the National movement.

Another context would be international aid. When an earth quake hits in Ecuador, there might be a conversation added under “global disasters > earthquakes > Ecuador”. The Red Cross, then can tag its conversations with “Red Cross” so that people who are interested in helping with the Red Cross's efforts can tune into that “station”, while the Red Cross itself could continue to participate in the overall conversation.