Chapter One: You are what you share

If you are not perplexed you should be. As the web becomes ever more ubiquitous, it infiltrates our lives and shapes what we think is possible, we are increasingly unnerved about what we might have unleashed. Will the web promote democratic collaboration and creativity? Or will it be a malign influence, rendering us collectively stupid by our reliance on what Google and Wikipedia tells us it true, or worse promoting bigotry, thoughtlessness, criminality and terror? How will it change the way we think and behave and what will its growing domination of the world of information and ideas do to us? Clearly there is enormous potential.

Thanks to the web more people than ever can exercise their right to free speech, reviving democracy where it is tired and inspiring its emergence in authoritarian societies from Burma, to Vietnam and China. In theory the web should be good for democracy. Yet often this extension of free speech seems to produce little more than a babble of raucous argument that rarely turns into the structured and considered debate essential for democracy. Bloggers cannot overthrow authoritarian rulers on their own.

Our freedoms have exploded as a consequence, not just to shop for cheap, last minute deals, but to be creative with tools that help us to express ourselves through writing, making videos, composing music. More people than ever have basic tools which allow them a degree of creativity. On YouTube for example you can see videos made by performance artists which have attracted millions of viewers. Ideally the web should be spread the freedom to do express ourselves creatively. Yet the web also expands the scope for surveillance, not just by the state and corporations, but also by our peers and friends. Every move we make on the web leaves a little wake that can be tracked. Any indiscretion of youth could come back to haunt us thanks to a user-generated surveillance system of social networking in which everyone is keeping an eye on everyone else. Lewis Hamilton almost lost the 2007 Formula One title thanks to footage posted on YouTube. Young British tennis stars were stripped on their status after ill advised revelations on their Facebook sites. Nothing seems to be private anymore and that surely cannot be good for freedom.

The also web promises to be good for equality. Barriers to information and knowledge are falling fast. Information and knowledge are vital inputs into everything that matters, from education to creating new drugs or devising clean energy systems. Thanks to the web, more people than ever should have access to knowledge, and that should help education and innovation among the poorest people in the world, those who can least afford schools, libraries, universities, laboratories. The web, in theory, should be good for equality.

Yet the web most rewards those who are already well connected by allowing them

to network together, reinforcing their privilege. Economically the web seems to destroy as much as it creates and many wonder whether on balance whether this leaves us better off. As more of us turn to the web for news, information, entertainment and conversation, for example, we turn away from newspapers, television, film, libraries, bookshops. That may liberate us from the control of a cultural elite, editors and publishers, critics and commentators who used to oversee what we read and thought. Yet the orgy of user created content the web has attracted might also rob us of high quality journalism and literature, film and music, as the institutions that train and employ professionals find their economic foundations eaten away. In the US, the spread of social networking sites like Craigslist is destroying the market for local newspapers: who is to say what the long term impact of that will be on communities that will no longer have such a focal point. We may come to rue the YouTube Cultural Revolution if it banishes the gatekeepers of quality and culture to the digital wastelands. No amount of amateur blogging will make up for well trained and funded investigative journalism that makes politicians quake, this is quipped to probe the depths of scandals the powerful want to keep quiet.

Many people are deeply uncertain about whether the world the web is creating will leave us feeling more in control of our lives or less. On the one hand the web is the source of our most ambitious hopes for spreading democracy, knowledge and creativity. It ought in principle give us untold capacity for solving shared problems by allowing us combine the knowledge and insights of millions of people, creating a collective intelligence on scale never before possible.

But the web is also the source of some of our most lurid fears: it has already become a tool for stalkers, paedophiles, terrorists and criminals to organise shadow networks for shadowy purposes beyond our control. The web's extreme openness, its capacity to allow anyone to connect to virtually anyone one else, generates untold possibilities for collaboration. It also leaves us vulnerable to worms, viruses and a mass of petty intrusions. The more connected we are the richer we should be because we should be able to connect with people far and wide, to combine their ideas, talents and resources in ways that should expand everyone's prosperity. But the more connected, we are the easier it is for small groups to cause enormous disruptions, by spreading viruses, real or virtual. The web enables small, dispersed groups to collaborate in ways that were previously impossible. That might be great for the small community that trades car parts for old Citroens or for those who want to play poker against one another. It could be dreadful if it empowers a small group of fanatics to explode a dirty bomb in a major city. The more connected we are the more opportunities for collaboration there should be, but the more vulnerable we also become.

The web's critics argue that it will corrode much of what is valuable in our culture, which rests on learning and expertise, professionalism and specialism. All too easily, social networking could license an obtuse group think. It will be harder

for dissenters to part from the party line of their peers. That is likely to amplify errors and prejudices rather than correct them, to aggravate bias and sustain falsehoods that should be challenged. As the Internet encourages more people to disappear down their cultural bolt holes, seeking out people who share their views, what little is left of our common culture could fracture and split as people pursue their own, separate conversations. In music and film industries companies complain the web is destroying established business models vital to allow investment in talent. The optimists describe the web as a conversation. Yet much of the web seems raucous and unruly, more like a bar room brawl than a moderated discussion.

Every interaction we have with the web is laced with uncertainty. How can we be sure what is true when a free form encyclopaedia compiled by anonymous volunteers - Wikipedia - gets more traffic than the expert Encyclopaedia Britannica or the BBC? What is to be counted as real in a world in which some people spend the equivalent of a day week in virtual worlds like Second Life and World of Warcraft being awks or avatars? Or take the apparently simple question of what it means to be someone's "friend." In the world before social networking became the new religion "friend" was a term reserved for a small band of people you were close to and on whom you could depend in a crisis. With social networking the idea of "friend" encompasses passing acquaintances, fans and even people you do not actually know. How can the web be good if it so aggressively degrades such a idea as vital as friendship?

We are reaching a critical phase in the web's development, when we will see more clearly how it will influence society, not just in the rich developed world where it got started, but even more importantly in fast developing economies in Asia and South America, where in the next decade close on a 1bn people will access it through cheap mobile phones and laptops. What began a few decades ago as an intriguing experiment among academics to share files is reshaping culture around the world, changing how we will think and relate to one another. We will look back on this decade to come as a period of unparalleled social creativity a time when we sought to devise new ways to work together to be more democratic, creative and innovative, potentially on a vast scale. The web could amplify our combined intelligence if only we can find ways to use it to work creatively together. If not, it could lead to anarchy, an anything goes culture increasingly beyond central control, in which potentially lethal ideas and technologies, flow out of the institutions where they were once under control of professionals and into the hands of people who cannot be trusted to use them wisely. We may rue the day we let the genie out of the bottle.

This book is about how we can make the most of the web's potential to spread democracy, promote freedom, alleviate inequality and allow us to be creative together, en mass. The web's potential for good stems from the open, collaborative and even communal culture it inherited where it started in academia

and the counter culture of the 1960s, combined with pre-industrial ingredients it has resurrected, folk culture and the commons as a shared basis for productive endeavour. The web allows for a massive expansion in individual participation in culture and the economy. More people than ever will be able to take part, adding their voice, their piece of information, their idea to the throng. Greater individual participation will not, on its own, add up to much unless it is matched by a capacity to share and then combine our ideas. In the last thirty years the spread of the market, the collapse of communism, the travails of the public sector have elevated private ownership as the best way to organise virtually everything. The spread of the web invites us to look at the future from a different vantage point, to see that what we share is at least as important as what we own; what we hold in common is as important as what we keep for ourselves; what we choose to give away may matter more than what we charge for. In the economy of things you are identified by what you own: your land, house, car. In the economy of ideas that the web is creating, you are what you share: who you are linked to, who you network with and which ideas, pictures, videos, links, comments you share. The biggest change the web will have on us is to allow us to share with one another in new ways and particularly to share ideas. That matters because the more ideas are shared the more they breed, mutate and multiply, and that process is the ultimate source of our creativity, innovation and well being. This book is a defence of sharing, particularly the sharing of ideas.

The web matters because it allows more people to share ideas with more people in more ways.

That web's underlying culture of sharing, decentralisation and democracy, makes the it an ideal platform for groups to self organise, combining their ideas and know how, to create together games, encyclopaedias, software, social networks, video sharing sites or entire parallel universes. That culture of sharing also makes the web difficult for governments to control and hard for corporations to make money from.

In reality creativity has always been a highly collaborative, cumulative and social activity in which people with different skills, points of view and insights, share and develop ideas together. At root most creativity is collaborative. It is not usually the product of a flash of insight from a lone individual. The web gives us a new way to organise and expand this collaborative activity.

The factory made possible mass production, mass consumption and with that industrial working class. The web could make innovation and creativity a mass activity that engages millions of people. The developed world in the 20th was preoccupied by organising and reorganising the mass production system, its factories, industrial relations systems, working practices, supply chains. Our preoccupation in the century to come will be how to create and sustain a mass innovation economy in which the central issues will be how more people can

collaborate more effectively in creating new ideas.

As the web shapes and colours many more aspects of our lives, it will provide us with a new way of thinking, a set of reflexes for how we should organise ourselves. For the generations growing up with social networking sites, multiplayer computer games, free software and virtual worlds, the reflexes learnt on the web will shape the rest of their lives: they will look for information themselves and expect and welcome opportunities to participate, collaborate, share and work with their peers. The web will slowly reframe how we see the more material aspects of our lives fitting together. The factory encouraged us to see everything through the prism of the orderly production line delivering products to waiting consumers. The web will encourage us to see everyone as potential participants in creating collaborative solutions through largely self-organising networks. But that will only come to pass however if we can organise our shared intelligence ourselves. How we do that is the challenge this book addresses. A couple of examples of what could be possible might help explain.

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In late July 2004, in the closing frames of cinema advertisements for *Halo 2*, the science fiction computer game, a website address – www.ilovebees.com - flickered across the screen. Over the following few days, thousands of Halo fans, and others intrigued by the address visited the site, which appeared to belong to an amateur beekeeper called Margaret who had disappeared. Her honey-based recipes had been replaced by 210 global positioning system coordinates. Attached to each set of coordinates was a time of day, spaced out at four-minute intervals over 12 hours. A message warned that "the system was in peril" and a clock was counting down to a date that proved to August 24th. At the bottom of Margaret's homepage was the question – "what happened to this page?" – and a link to a blog written by Margaret's niece Dana, who exchanged about a hundred emails with visitors before herself disappearing without explanation.

That was it: no instructions, no rules, just a puzzle to solve, a seemingly complex set of numbers and a ticking clock. Over the next four months, 600,000 people – mainly US college and high school students – set out to solve the mystery of Margaret's web page by finding out what the coordinates meant. What unfolded was a striking display of mass collaborative creativity and intelligence. The participants in *I Love Bees* started to throw around ideas and share information about what the coordinates meant. They set up blogs and bulletin boards, websites, and instant message groups. But they did not simply gather, publish and share information. Beneath the blizzard of emails and blogs there was a discernible order in what they did. They started to sift, sort and analyse the information together. They debated theories about what the coordinates stood for, formed plans, and split into teams to pursue different avenues of inquiry. Eventually after many failed attempts to work out what the coordinates meant,

they created a theory that all the players shared and in the final stages, they decided, en mass, how thousands of people should take coordinated action. They achieved this without knowing one another and without having anyone in charge. There were no bonuses on offer or any of the other incentives we assume are needed to get people to work. The participants were highly organised without having much by way of an organisation.

The *I Love Bees* game, designed by 42 Entertainment, a Californian company, had its roots in flash mobbing, a form of public performance art, which started in New York and San Francisco in 2003. In flash mobs, anything from a handful of people to several thousand, who have organised themselves by word of mouth, over mobile phones and via the Internet, gather in a public place, such as a railway station or a street crossing, to undertake an apparently bizarre activity. Jane McGonigal, one of 42 Entertainment's lead designers and a pioneer of flash mobbing, designed *I Love Bees* to see if a mob could become a creative force.

In the four weeks after the advertisements were shown the game designers fed clues to the players through hundreds of websites, blogs, thousands of emails and more than 40,000 MP3 transmissions. These clues were released to players all over the globe, so a player anywhere could find themselves with an important role. The players had to share their evidence to make sense of it. One new clue on Dana's blog, for example, attracted 2,041 comments in just a few days. A popular message board clocked 50 posts every thirty seconds in the first few weeks. In the first ten weeks of the game, players made more than 1m message board postings. One group of about 4,000 players, known as the Beekeepers, became the core of the community, producing scores of hypotheses about what the coordinates might mean. It was the Beekeepers who discovered that at each of the 210 locations spread around the world there was a payphone.

The game began to come to a head from August 24th, as thousands of players turned up at the payphones armed with every conceivable piece of digital communications equipment, including databases of players' mobile phone numbers, camcorders, GPS systems, scanners and satellite phones. As the day unfolded, at the time specified by the list of coordinates, the pay phone in question would ring and the player answering was asked a question. If they got the answer correct, which all did, they were played a snippet from a drama about Margaret. The group's task was to put the snippets in the right order by the end of the day and to post the completed work on the web. They succeeded.

That was the first of several tasks set by the puppet masters. Over the next 12 weeks, the number of coordinates and payphones went from 210 to 1,000, all around the world. The game reached its climax one Tuesday in late Autumn. Shortly after sunrise, the puppet masters started calling payphones on the US east coast. Whoever answered had to provide a piece of intimate information five words long. The caller then revealed she would call another of the 1,000

payphones and expect to be told the same five words. The players had an hour to get the five words to everyone else playing the game, all across the world, at all of the 1,000 phones. The puppet masters staged a dozen of these information relay races. In the last of these races the players had 15 seconds to get the five words from the person who answered the first call to the person taking the second call. They never once failed.

The 600,000 players in *I Love Bees* showed that a mass of independent people, with different information, skills and outlooks, working together in the right way, can discover, analyse, coordinate, create and innovate together at scale without much by way of a traditional organisation. Their collaboration was not an anarchic free for all; it was organised but without a division of labour imposed from on high. So if some ingenious west coast games designers can create the conditions in which thousands of people around the world collaborate to solve a trivial puzzle, could we do something similar to defeat bird flu, tackle global warming, keep a communities safe, providing provide support for disaster victims, lend and borrow money, conduct political and policy debates, teach and learn, design and even make physical products?

Whether this hope turns out to be reasonable or hopelessly idealistic may depend on the eventual fate of a global experiment in sharing that is still in progress: Wikipedia. The free, volunteer created encyclopaedia, which is revered and denounced in equal measures: worshipped with fervour by its admirers as a wonder of collaborative creativity and pilloried by critics as a license for anarchy, a platform for half-truths and a free ticket for ill informed amateurs to gain credence they do not deserve at the expense of knowledgeable professionals.

Wikipedia was the offspring of an ultimately ill fated collaboration. In 2000, Jimmy Wales, a former options trader, employed Larry Sanger to create a free online encyclopaedia, Nupedia, which would allow anyone to submit an article to be reviewed by expert editors before being published. The seven stage editorial review Sanger designed proved cumbersome and, as a result, Nupedia grew slowly. The first article – on atonality – was published in the summer of 2000 – and Nupedia peaked in the Winter of 2001 with 25 published articles. Over dinner on January 2, 2001 Ben Kravitz, a software programmer, introduced Sanger to the "wiki" a web page that could be directly edited by anyone with access to it.

Sanger saw how a wiki could help build an open encyclopaedia by allowing writers and editors to work on a shared document. In a memoir of the project's early days Sanger identified the benefits:

"Wiki software does encourage, but does not strictly require, extreme openness and decentralisation: openness since page changes are logged and publicly viewable and pages may be further changed by anyone; and decentralisation, because for work to be done, there is no need for a person or body to assign work,

but rather, work can progress as and when people want to do it. Wiki software also discourages the exercise of authority, since work proceeds at will on any page and on any large, active wiki, it would be too much work for any single overseer or limited group of overseers to keep up."

Sanger wanted to revitalise Nupedia, but Wales saw a more radical possibility: to create an entirely open, highly collaborative approach to knowledge. Wikipedia's domain name was purchased on January 15th 2001. By the end of January 2001, there were already 31 articles; 1,300 by March; 3,900 by May. Sanger left the project as an employee in 2002 and has since become one of Wikipedia's sternest critics. In 2007 Sanger launched Citizendium, a competitor online encyclopaedia, which aims to bring together experts and amateurs.

Wikipedia's advocates believe wiki culture encourages shared creativity and responsible self-governance. Critics say it licenses an anything goes approach to knowledge. Students, they allege, assume everything on Wikipedia is true. Rather than think, question and explore for answers themselves, they cut and paste the answer from Wikipedia. The critics argue this licenses intellectual laziness on a grand scale as we devolve to Wikipedia the responsibility for telling us what is true and false. A few people involved in Wikipedia might think for themselves more; the result is that people think for themselves less.

Adjudicating these claims is tricky because Wikipedia is still developing. What is beyond doubt is that it has sustained remarkable growth. From 31 articles in English in January 2001, Wikipedia had amassed 17,307 a year later, to almost a million by January 2006, and 1.5m in 2007, when the number of articles in all languages topped 6m. The rate of growth in articles in English between 2001 and 2007 was five million per cent and for articles in all languages nineteen million per cent. By mid 2007, Wikipedia had more than 450,000 articles in German and more than 1,000 articles in more than 100 languages. Wales says his aim is to create the Red Cross of information: to put the knowledge contained in a large encyclopaedia in the hands of everyone on the planet, for free. As of March 2007, Wikipedia was used by 5.87% of Internet users, compared to 0.03% for the Encylopedia Britannica, 1.73% for the BBC news website, 1.36% for CNN and 0.62% for the New York Times. Wikipedia was ranked as the 11th most visited website in the world, while Encyclopedia Britannica languished at 4,449.

For a long time, Wikipedia had one employee. By 2007 it had five. Wales has invested perhaps $500,000 in the project. Public donations to the Wikimedia Foundation, which runs the site, have become much more significant: in 2006 they were $1.5m. Still, these are very low costs to create something on this scale. Most of the articles have come from people who want to contribute to a shared resource. Their contributions are not edited by experts but by open debate among peers. Behind each entry in Wikipedia lies an extensive talk page which documents all the debate between participants over what to include, change or

exclude. The average article has been subject to about 11 edits. By January 2006, about 154,885 people had made more than 10 edits, 78,308 of them in English.

Yet Wikipedia only works because this mass of contributors organises itself in a very particular way. Most of the editing is done by a relatively small group. In January 2006, for example, 47,297 people contributed more than 5 times to all language editions of Wikipedia, but only 7,460 made more than 100 edits. This sliding-scale of contribution is crucial to the project's success, which has come to depend heavily on a core of highly active participants who look after a set of pages, eliminating vandalism and deciding on corrections. The core group in Wikipedia, which resembles the Beekeepers in *I Love Bees*, works on the many millions of contributions made by tens of thousands of people.

One early lesson from *I Love Bees* and Wikipedia is that creative communities are not egalitarian. Wales describes the community's self governance this way:

"In part Wikipedia is anarchy. Really, no one is in control of the content, its up to people to sort it out for themselves. That also means it is a meritocracy: the best ideas should win out. In part, it is democracy because some things do get voted on. There is also an element of aristocracy: people who have been involved in the community longer, who have acquired a reputation have a higher standing in the community. And then there is monarchy - that's me – but I try to get involved as little as possible."

The most contentious question about Wikipedia is the one that really matters: how good an encyclopedia it is. Sanger argues its quality is questionable because it experts do not vet amateur contributions. In an influential online essay cultural critic Jaron Lanier branded it a form of digital Maoism on the grounds that it promotes an anonymous collective account of knowledge that favours the often inaccurate, lowest common denominator on any subject. Others allege that Wikipedia licenses gossip and falsehoods to masquerade as truth, because contributions are often not checked fully. The answer is that we do not yet know how good Wikipedia is and will become. Much will depend on how the community organises itself and that may well evolve, giving a larger role to the core, to ensure quality and limit vandalism.

Wikipedia is unquestionable more populist in its coverage than Encyclopaedia Britannica. If you look up Barbie in the Encyclopaedia Britannica you will find an article on the Nazi war criminal whose first name was Klaus. On Wikipedia you will find a lengthy, thoughtful and entertaining account of the children's doll. Wikipedia is often good at explaining current and unfolding events: senior BBC executives acknowledge that Wikipedia's account of the July 7th 2005 terrorist bombings in London was as good as the corproations. And Wikipedia operates on a vast scale: the Britannica has 44m words of content, Wikipedia 250m.

It would be foolish not to acknowledge that Wikipedia is not perfect. Like all publishers it can make mistakes. On the other hand it difficult to establish just how serious these mistakes are. A survey by Nature magazine asked expert reviewers to compare 42 articles in Wikipedia with corresponding entries in the Britannica. Eight serious errors were detected, four from each encyclopaedia. Reviewers found 162 factual errors, omissions or misleading statements in the Wikipedia and 123 in the Britannica. Nature concluded its survey showed Wikipedia came close to Britannica in terms of accuracy. Britannica retorted that it was 30% more accurate, not a insignificant difference.

Yet if Wikipedia is prone to more errors, it also seems to heal itself remarkably quickly and openly. Robert McHenry, the Britannica's former editor in chief, derided Wikipedia as a Faith Based Encyclopedia by pointing to flaws in an article on Alexander Hamilton one of the founding fathers of the US constitution. Hamilton's biographers cannot agree on whether he was born in 1755 or 1757. Wikipedia seemed to have ignored this controversy and plumped for 1755. (Although McHenry did not note this, commercial online encyclopaedias produced by professionals also failed to reflect the controversy.) Within a week of McHenry's attack, however, Wikipedia's self-healing mechanism had produced a reasonably clean version of Hamilton's biography. One academic study found that almost all acts of vandalism in May 2003 were repaired within minutes. As Wikipedia has grown so more articles – for example those on President George W Bush, Israel and the Iraq war - have been subject to such repeated abuse and vicious dispute that they have been withheld from public editing. Yet although abuse, self promotion and vandalism are a growing problem – what would one expect with some that is entirely open and has 6m articles – these are present in less than 1% of the total. Invariably, Wikipedia is a good place to start researching a topic, but rarely the final word. Its weaknesses would be a threat to the way we establish what we know only if it became a monopoly supplier of knowledge, displacing other sources. That seems extremely unlikely.

The most important point about Wikipedia, however, which is often overlooked by its parochial, US centric critics, is this: most people in the world cannot afford to compare Wikipedia to the Brittanica. They will not be able to afford an encylopaedia in any form for many years to come. Wikipedia is creating a global, public platform of useful knowledge that will be freely available to any school college or family in the world, in their own language. In Africa, even where communities do not have access to the internet, teachers are using copies of Wikipedia downloaded onto CDs. Wikipedia may get the odd thing wrong, but that misses the bigger picture. Jimmy Wales and his community have created a new way for us to share knowledge and ideas at scale, en mass, across the world. Wikipedia's message is : the more we share, the richer we are.

As Wikipedia spreads around the world not only does it carry knowledge, it teaches habits of participation, responsibility and sharing. Wikipedia is not based

on a naïve faith in collectivism but on the collaborative exercise of individual responsibility. Wikipedia is one of the most amazing cultural creations of modern times: a global resource of 6m, volunteer created articles in five years, with virtually no staff and little funding. Wikipedia is like a vast birds nest of knowledge, each piece of information carefully resting on another. Yet this is a bird's nest with no bird in charge of where to put each piece. It has almost constructed itself.

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I Love Bees and Wikipedia are both examples of We Think – my term to comprehend how think, play, work and create, together, en mass, thanks to the web. Contrary to popular misconceptions, creativity has always been a highly collaborative and cumulative activity and rarely the product of a flash of individual brilliance. In most fields – science, culture, business, academia – creativity emerges when people with different vantage points, skills and know how combine their ideas to create new combinations. The web provides a platform we have never had before for us to be creative together at a scale previously. It is changing how we share ideas and so how we think.

The phrase *cogito ergo sum*, "I think, therefore I am" was inscribed onto our culture in 1637 by the French soldier cum philosopher Rene Descartes, announcing a dramatic inward turn in the way we think about ourselves. In search of certainty about his own existence, Descartes declared that the act of doubting was proof that we exist. Descartes elevated our ability to think for ourselves and on our own to the highest possible status, providing us with certainty of our existence. "I think therefore I am" is however, increasingly at odds with the world being created by the web. Descartes urged us to look inwards, the web urges to turn outwards in the search for ideas. Descartes argued thinking was a largely individualistic activity, the web makes it increasingly social. In this we Think world creativity is invariably a collaborative activity that thrives when people share and mix ideas, allowing them to cross pollinate. For Descartes thinking ordered ideas inside our heads. When We Think take hold what matters is social organisation: how we publish, debate, test, refine and reject ideas to think together. In the 20th century we grew accustomed to the idea that ideas came from specially gifted people, working in special places, often wearing special clothes: the writer in their garret, the artist in their studio, the boffin in the lab. Yet in *I Love Bees* and Wikipedia, ideas are emerging from a mass of creative interaction between a wide range of people who combine different but potentially complementary insights. Our capacity for collaborative creativity will become evermore powerful because the opportunities to engage with others in creative interaction are expanding. The generations that grow up with these ways of thinking will have as their motto: "We think, therefore we are."

Importantly though just as *I Love Bees* and Wikipedia alert us to the possibilities

of We Think they also warn us that it flourishes only under very delicate circumstances. People gathering on a social networking sites, downloading user generated videos, or spouting off into the blogsphere do not on create anything resembling collective intelligence. More often than not they produce a deafening babble or deadening consensus, vicious disagreement or resounding reinforcement of already entrenched positions. On the web people seem to either argue or agree with one another; it is much rarer for them to really think together. When they do a delicate mix of ingredients is required, as Wikipedia suggests. These seemingly allow people to be organised without having an organisation, by which I mean an clear hierarchy, job titles, an HR department.

We Think's organisational recipe rests of a balance of three ingredients between participation, recognition and collaboration.

All successful efforts at We Think – this book will introduce several more - depend on making it easy for capable participants to make a contribution to a joint project, whether that be making an edit to an encyclopedia entry, providing the answer to a clue in a puzzle, spotting a bug in a programme, or tagging a piece of information. We Think depends on motivating a mass of able contributors to get involved in a joint undertaking. As we shall see the currency that draws people to these communities from mine engineers in Cornwall, to kids playing computer games and the world's leading geneticists – is recognition. We Think communities provide their participations with what they most value: recognition for the worth of their contribution, the value of their ideas, the skills of their trade.

The mass of individuals contributions, however, needs to be organised so they connect, combine and grow, to create something robust and reliable, like a software programme, a shared virtual world or a scientific theory. This calls for a mechanism that permits collaboration, for sifting good ideas from bad, better theories from worse. Without effective self-governance idealistic web communities, like so many communes and cooperatives before them, will collapse into an avalanche of diverse perspectives, rants, lies, gossip, falsehoods, truths and hearsay.

It is also critical that the contributors do not immerse themselves so fully into the collective that they stop thinking individually. Wikipedia is not a cult. People do not have to read the collected works of Jimmy Wales and attend local cells to be educated in the Wikipedia way. We Think emerges when diverse groups of independent individuals collaborate effectively. It is not group think: submersion in a homogenous, unthinking mass. Crowds and mobs are stupid as often as they are wise. It all depends on how they combine participation and collaboration, diversity and shared values, independence of thought and community. When the mix is right – as it seems to be in Wikipedia – the outcome is a powerful shared intelligence. When the mix is wrong it leads to cacophony or conformity.

Getting that mix right is a puzzle more organisations will have to address as the web's influence spreads. How do all these contributions, often made by strangers, fit together to create a single working computer programme, a game or an encyclopaedia? Why do masses of people work for free first to create these things and then to give away the fruits of their work? In We Think innovators share their ideas quite freely and welcome others borrowing their work and improving on it. They put a lot of unpaid effort into their innovations and then do not seek to profit from them. This is behaviour we have learned to regard as bizarre and yet on the web it seems to be part of the new normal. Can We Think sustain itself, if its collectives do not earn any money to reinvest in their activities let alone to pay the mortgages of their workers? And can traditional, top down, organisations, find a way – given these constraints – to mobilise the power of We Think?

It is sensible to be sceptical. There are many ways We Think could go wrong. We Think may well prosper for a while in some limited niches – computer games, social networking, marginal online communities – which will in time be devoured by traditional corporations. Or these collectives may turn themselves into commercial outfits or perhaps collapse in on themselves, like so many failed utopian communes in the past. The early experiments in We Think we have seen so far could be no more than shooting stars, briefly lighting up the sky and distracting our attention before dying away, leaving everything much as it was. Certainly a great deal of the economy – chemical plants, railways, electricity generation, food production, banking, holidays – is not susceptible to this collaborative, open ethos.

My hunch, and the argument of this book, is that we are witnessing the birth of a different way of approaching how we organise ourselves, one that offers significant opportunities to improve how we work, consume and innovate. The logic of managerial capitalism is being scrambled up. To be organised we no longer always need an organisation, certainly not one with a formal hierarchy. Henry Ford's first mass production factory emerged from an protracted period of experimentation at the start of the 20th century, when thousands of entrepreneurs were experimenting with small scale ways to make cars. That may be where we are now. We may look back on the next 10 years as a period of immense opportunity to put in place a new way to organise ourselves, one that might have as much reach and impact as Ford's approach to mass production. We Think could provide a different organisational base for society, one that encourages us to share more, to be more collaborative and participative and in the process extends democracy, equality and freedom.

Ironically, as I argue in the next chapter, the success of We Think will not depend on its being all new but on parts of it being quite old. The web is appealing in part because it offers to bring back to life more communal and collaborative ways of working which were sidelined by industrial organisations in the 20th century. The web's power comes from allowing us to be social in new ways. It speaks to a

deeper, old fashioned yearning people have to be connected and to share. Yet that serves a modern purpose to generate new ideas and knowledge. The oldest habits of sharing will be central to how we innovate together using new technologies. As innovation becomes more central to create less resource intensive, environmentally damaging forms of economic activity, so will this ethic of sharing. As we will see, time and again, communities that share and develop ideas usually start around by someone who donates their knowledge.

In 1672 Isaac Newton sent a long letter to Henry Oldenburg at London's Royal Society outlining his theory of light and colour. Oldenburg printed the letter immediately in the society's *Philosophical Transactions* which he had created to provide for the fast and orderly dissemination of scientific discoveries. Newton's gift in making his ideas available for publication created a scientific community through which knowledge flowed for centuries to come. It was not a gift to a community that already existed. The gift created a community around it.

All the purest efforts at We Think profiled in this book start with a gift of knowledge, whether that is software, tools, ideas or information, which then provide the basis for the growth of a community and the generation of yet more knowledge. These communities allow commerce to thrive. But it is the communities that come first. Markets trade products; communities breed knowledge. Ideas do not live in the minds of individuals but through a constant circulation as gifts. In the century to come well being will come to depend less on what we own and consume and more on what we can share with others and create together, especially as consumption becomes increasingly constrained by environmental concerns that mean we have to live more within collectively binding limits. In the 20th century you were identified by what you owned: your car, your house. In the 21st century we will also be defined by how we share and what we give away. That is why the web matters so much. It will allow us to share and so to be creative in new ways.