Promises Questions NUMERIQUES 2013/2014

Image de couverture : Isabelle Jovanovic
INTRODUCTION

At the intersection of technical innovation, economic mutations and social transformations, what «digital disruptions» will become central in the next few years? What are the issues and challenges that we can no longer ignore? We all ask ourselves similar questions but lack the time to address them. In this session, we will attempt to collectively come up with meaningful answers.

The basic material we’ll work from is Promises : the desirable futures that we all tend to describe when we project our digital inventions, endeavors, or intentions. It’s an engaging and ambivalent material: some promises are clearly utopian, others have been disproved by reality, some can be frightening as well as exciting; There can be disagreements on whether some promises have been fulfilled or betrayed, whether the glass is half full or half empty.

Yet promises express hope and dreams, lies and beliefs, intuitions as well as illusions. They are the engine as well as the produce of will and creativity. They are drivers. They inspire concrete choices, technical, business or political decisions. They are one of the ways we tell the story of our future.

During this session, we will each work on some of the past and present promises that digital technology has made to society. We’ll spend some time reviving their story. Starting from that, we will try to come up with the promises that we, knowing what we now know, intend to make towards the future. Promises to which we’re ready to make a commitment.

The booklet that you have in hands describes 20 past and present promises. Read them in whatever order, pick the ones that motivate you. Get ready to make choices, for the 1st thing we’ll do together is choose the 4-6 promises that we, as a group, will work on.

WE HOPE YOU ARE AS EXCITED ABOUT THIS WORKSHOP AS WE ARE!
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Thanks to ICTs, the sum of human knowledge is available everywhere, all the time, to anyone. This satisfies the demands of an economy where knowledge is becoming a major factor of competitiveness, and of a rapidly changing world where we will need to learn all our life. Digital technologies are radically transforming the ways we learn and teach.

“We can utterly transform teaching conditions by almost entirely replacing books with television. (...) Do you realise that this means children can have fun instead of being bored? (...) The point is not to eliminate teachers, the point is to restore their noblest function: being there to help those who need help.”

ANDRÉ MALRAUX, 1974

ACCESS TO KNOWLEDGE

“The future school will facilitate teacher student interaction for every learner to utilize services of the best teachers to get quality education from anywhere at affordable cost while encouraging a competitive environment for teachers to innovate new techniques in teaching.”

HP «FUTURE SCHOOL», 2011

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UNESCO, 2005

TRANSFORM TEACHING...AND TEACHERS

“When every child has a connected laptop, they have in their hands the key to full development and participation. Limits are erased as they can learn to work with others around the world, to access high-quality, modern materials, to engage their passions and develop their expertise.”

ONE LAPTOP PER CHILD, 2012

“School is a place where students learn largely by working on projects that come from their own interests - their own visions of a place where they want to be, a thing they want to make or a subject they want to explore. The contribution of technology is that it makes possible projects that are both very difficult and very engaging. It is a place where teachers do not provide information. The teacher helps the student find information and learn skills. (...) Most importantly, students and teachers are learning the art and skill and discipline of pursuing a vision through the frustrating and hard times of struggle and the rewarding times of getting closer to the goal.”

SEYMOUR PAPERT & GASTON CAPERTON, 1999

LEARNING TO LEARN, FOR THE REST OF OUR LIVES
The Shadow of a Doubt...

“To many education experts, something is not adding up — here and across the country. In a nutshell: schools are spending billions on technology, even as they cut budgets and lay off teachers, with little proof that this approach is improving basic learning.”

Matt Richtel, 2011

“Will educational ICTs make educational reform possible? Will they be limited to better illustrating traditional lessons or designed, to increase the already excessive number of tests, and hence succeed in fundamentally changing nothing at all?

Beyond the equipment, beyond enforced bureaucratization and «technicalisation», beyond the stupidity of result-driven management, it will take time, resources, and intelligence to develop high-level teacher training; otherwise, despite the best intentions, school will not be able to fly into the future.”

Pierre Frackowiak, 2010

Let’s Really Change Education!

“Until the computer, the technology for teaching was limited to television, which simply amplified the activity of teachers and the passivity of children. The computer changed this balance radically. All of a sudden, learning by doing became the rule rather than the exception.”

Nicholas Negroponte, Being Digital, 1995

“Universities know that what they offer should extend beyond content. They need to enhance the creativity of their students, communicate passion for every discipline, and learn to think systemically. That’s the challenge! The MOOC (Massive Open Online Classroom) allows this. It forces us to rethink courses, class time, and value.”

Daphne Koller, 2009

“Quest2Learn is a school that uses the underlying design principles of games to create highly immersive, game-like learning experiences. Games and other forms of digital media serve another useful purpose at Quest: they serve to model the complexity and promise of «systems». Understanding and accounting for this complexity is a fundamental literacy of the 21st century.”

Quest2Learn, 2010

“The proliferation of digital technologies has accentuated the need for creative thinking in all aspects of our lives, and has also provided tools that can help us improve and reinvent ourselves. The importance of a well-educated, creative citizenry is greater than ever before. (...)

We must help children learn how to extend and refine their creative abilities, so that the creativity of childhood persists and grows throughout life.

To achieve these goals will require new approaches to education and learning, and new types of technologies to support those new approaches. The ultimate goal is a society of creative individuals who are constantly inventing new possibilities for themselves and their communities.”

Mitchell Resnick, 2002
Playing is no longer a simple pastime... Games have become «serious» fun. They are the media of the future. They transform learning and working environments. Games will not only enable us to better understand our world, they will make us more adept at handling the challenges it presents.

**GAMES HELP US LEARN, AND DEVELOP OUR SKILLS**

“One study of 33 laparoscopic surgeons found that those who played video games were 27% faster at advanced surgical procedures and made 37% fewer errors than those who didn’t.”

*BETH ISRAEL CENTER, 2008*

“Playing can be part of the learning process because the subject to be learnt is, at least in some respects, essentially playful. The use of serious games in the learning process therefore illuminates the fundamental nature of the subject being taught.”

*HECTOR RODRIGUEZ, 2006*

**WHAT IF EVERYTHING WERE A GAME ?**

“Everything in the future online is going to look like a multiplayer game. If I were 15 years old, that’s what I would be doing right now.”

*ERIC SCHMIDT, 2010*

“You’ll get up in the morning to brush your teeth and the toothbrush can sense that you’re brushing your teeth. So hey, good job for you, 10 points for brushing your teeth. And it can measure how long, and you’re supposed to brush your teeth for 3 minutes. You did! Good job! You brushed your teeth for 3 minutes. So you get a bonus for that.”

*JESSE SCHELL, 2010*

“We believe that some people will soon do their jobs inside a game...”

*BYRON REEVES ET LEIGHTON READ, TOTAL ENGAGEMENT, 2009*

**SOLVING HUMANITY’S BIGGEST CHALLENGES THROUGH GAMES ?**

“I’m here to tell you that fun is not only not frivolous but fundamental to human nature and required for survival. Therefore what we do is saving the human race from extinction.”

*RAPH KOSTER, 2005*

“Right now we spend three billion hours a week playing online games. Some of you might be thinking, «That’s a lot of time to spend playing games. Maybe too much time, considering how many urgent problems we have to solve in the real world.» (...) In fact, I believe that if we want to survive the next century on this planet, we need at least 21 billion hours of game play every week.”

*JANE MC GONIGAL, 2010*

“Games are the cartoon version of real world sophisticated problems. Snakes and ladders ? It’s Euclidian geometry ! It’s a Cartesian space. It has wormholes, for pete’s sake. Who here teaches physics ? Superstring theory ? Play a game ! Games are distillation of cognitive schemata. That’s. What. They. Are.”

*RAPH KOSTER, 2005*
SKEPTICS, ALTERNATE PERSPECTIVES

OLD HAT!

“The chessboard is the world, the pieces are the phenomena of the Universe, the rules of the game are what we call the laws of Nature and the player on the other side is hidden from us.”

THOMAS HUXLEY, 1868

“In 1969, Dr. R Buckminster Fuller developed a World Game simulation to explore global resources and trends. It posed the critical question, «how do we make the world work for 100% of humanity in the shortest possible time through spontaneous cooperation without ecological damage or disadvantage of anyone?»”

BUCKMINSTER FULLER INSTITUTE 1969

A GAMIFIED “BRAVE NEW WORLD”?

“An application, based on the Unreal Tournament game engine, and featuring military training exercise and combat mission simulations, was commissioned by the US Army and distributed freely online. (...) The US Army discovered that this was the most effective tool they had to recruit 16 to 24 year olds.”

IDATE, 2008

“I’ve suggested the term «exploitationware» as a more accurate name for «gamification’s» true purpose, for those of us still interested in truth. Exploitationware captures gamifiers’ real intentions: a grifter’s game, pursued to capitalize on a cultural moment, through services about which they have questionable expertise, to bring about results meant to last only long enough to pad their bank accounts before the next bullshit trend comes along.”

IAN BOGOST, 2011

“What we’re currently terming gamification is in fact the process of taking the thing that is least essential to games and representing it as the core of the experience.”

MARGARET ROBERTSON, 2010

GOING ALL THE WAY: CONNECTING GAMES TO THE REAL WORLD!

“So the really big idea isn’t figuring out how to USE online gamers for real world purposes (as in the dirty word: crowdsourcing -- the act of other people to do work for you for FREE -- blech !). Instead, it’s about finding a way to use online games to make real life better for the gamers. In short, turn games into economic darknets that work in parallel and better than the broken status quo systems. As in: economic games that connect effort with reward. Economic games with transparent rules that tangibly improve the lives of all of the players in the REAL WORLD.”

JOHN ROBB, 2010
Digital technology is becoming simpler, more «natural». We no longer need to learn to use it. It interacts with the 5 senses and the brain; it hears us when we talk. It fades into the background, it lets itself be forgotten, or else it starts to look more like us. It knows us, understands us, and proactively responds to our needs and desires.

“Man feels that he has lost touch with reality. The development of polysensuality, soft touch, odor encapsulation, or more generally the use of materials that appeal to all the senses, are all a response to this loss of contact.”

MONIQUE LARGE, DEZINEO, 2004

“A quantum leap in communication will occur when computers become able to at least recognize and express affect”.

ROSALIND W. PICARD, AFFECTIVE COMPUTING, 2000

“The best computer is a quiet, invisible servant (...). The most profound technologies are those that disappear. They weave themselves into the fabric of everyday life until they are indistinguishable from it.”

MARC WEISER, 1991

“If technology is cold today, the challenge of the coming years will be to warm it up with the kind of human warmth that gives meaning to life. Only on this condition can it become an extension of life’s domain.”

DIDIER FASS, FUTUR 2.0, 2007
WHAT EXACTLY DOES “MORE HUMAN” MEAN?

UNDERSTANDING AND DEFEATING MACHINES IS VERY HUMAN!

“The important thing is not that machines sympathise with us, or become our friends, but that we sympathise with them.

➔ BEN BASHFORD, 2012

“When human beings acquired language, we learned not just how to listen but how to speak. When we gained literacy, we learned not just how to read but how to write. And as we move into an increasingly digital reality, we must learn not just how to use programs but how to make them.”

➔ DOUGLAS RUSHKOFF, PROGRAM OR BE PROGRAMMED, 2010

EITHER TOO HUMAN OR NOT HUMAN ENOUGH!

“[The «Uncanny Valley»] hypothesis states that, as the appearance of a robot is made more human, a human observer’s emotional response to the robot will become increasingly positive and empathic, until a point is reached beyond which the response quickly becomes that of strong revulsion. However, as the robot’s appearance continues to become less distinguishable from that of a human being, the emotional response becomes positive once more and approaches human-to-human empathy levels.”

➔ WIKIPEDIA

HUMANS CREATE MACHINES AND ARE TRANSFORMED BY THEM!

“We are all chimeras, theorized, and fabricated hybrids of machine and organism; in short, we are cyborgs. This cyborg is our ontology; it gives us our politics. (...) A cyborg world might be about lived social and bodily realities in which people are not afraid of their joint kinship with animals and machines, not afraid of permanently partial identities and contradictory standpoints. (...) Cyborg unities are monstrous and illegitimate; in our present political circumstances, we could hardly hope for more potent myths for resistance and recoupling.”

➔ MIL HAD DOUEIHI, POUR UN HUMANISME NUMÉRIQUE, 2012

WHAT WE EXPECT FROM TECHNOLOGY

• Intuitive interfaces that appeal to our five senses
• Speech recognition and language comprehension
• Machines that fade into their environments
• Bio-inspiration
• A proactive attitude
• The ability to understand and communicate emotions

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➔ DONNA HARAWAY, 1985
The Internet is redistributing informational access, and the means for its production and exchange—and as a result, it redistributes power. Individuals have been the first to benefit from this shift, and they have taken advantage of it in all sorts of ways: they obtain and provide information, learn and share what they know, they have become more effective consumers and have begun to develop their own products, to participate in public debate and co-create answers to common problems… The boundaries between amateur and professional, and between consumer and producer, are blurred. New forms of small- to-large-scale collective action are emerging, and existing organisations must learn to cope with the newfound strength of interconnected individuals.

“People are adding to cyberspace - creating it, defining it, expanding it. (...) The opportunity is now before us to empower every person to pursue that calling in his or her own way. [Cyberspace] shapes new codes of behavior that move each institution inexorably beyond standardization and centralization, as well as beyond the materialist’s obsession with energy, money and control.

Turning the economics of mass-production inside out, new information technologies are driving the financial costs of diversity—both product and personal—down toward zero, “demassifying” our institutions and our culture. Accelerating demassification creates the potential for vastly increased human freedom.”

⇒ A MAGNA CARTA FOR THE KNOWLEDGE AGE, 1994

“ICTs have afforded us a glimpse into new forms of civil action and participation; they are the tool of choice for active members of humanity wishing to affect the course of events. (...) People are becoming less and less passive; they are no longer spectators but participants in their own destinies: people are becoming the defining criteria for change, and of the present revolution.”

⇒ LE NOUVEAU POUVOIR DES INTERNAUTES, 2006

“For individuals and small producers, this may be the birth of a new era, perhaps even a golden one, on par with the Italian renaissance or the rise of Athenian democracy. We can peer produce an operating system, an encyclopedia, the media, a mutual fund, and even physical things like a motorcycle. We are becoming an economy unto ourselves—a vast global network of specialized producers that swap and exchange services for entertainment, sustenance, and learning. A new economic democracy is emerging in which we all have a lead role.”

⇒ WIKINOMICS, 2006

“Technology has given us a communications toolkit that allows anyone to become a journalist at little cost and, in theory, with global reach. Nothing like this has ever been remotely possible before. (...) The lines will blur between producers and consumers, changing the role of both. (...) The ability of anyone to make the news will give new voice to people who’ve felt voiceless. They are showing all of us —citizen, journalist, newsmaker— new ways of talking, of learning. In the end, they may help spark a renaissance of the notion, now threatened, of a truly informed citizenry. Self-government demands no less, and we’ll all benefit if we do it right.”

⇒ DAN GILMOR, WE THE MEDIA, 2004
What was so beautiful and fragile in the glorified idea that emerged at the time of the founders was the demand for a world where the rules of interaction, of authority, and of creative exchange would be as constantly open as possible… (They) dreamt of a universal, reconciled society without the boundaries created by age, sex and socio-professional status. Whereas, sociologically, they formed a hypermasculine, white, highly educated, American «community»...

As is often the case, cultural elites universalise their own societal desires and believe that because their practices are open, they are immediately accessible to everyone! (…) This idea has fuelled a lot of «naive» speculation about widespread participation, the disappearance of authority, the establishment of a global public arena…

DOMINIQUE CARDON, 2010

“EVERYONE» IS A SYNONYM FOR ANOTHER ELITE!

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DOMINIQUE CARDON, 2010

EMPOWERMENT» IS JUST A NEW AVATAR OF RADICAL INDIVIDUALISM! GOODBYE SOLIDARITY!

“You can call it liberalism. You can call it empowerment. You can call it freedom. You can call it responsibility. I call it the Big Society. The Big Society is about (…) liberation – the biggest, most dramatic redistribution of power from elites in Whitehall to the man and woman on the street.”

DAVID CAMERON, 2010

“David Cameron’s flagship «big society» project is at risk of being derailed by savage cuts to grassroots voluntary groups and a collapse in trust among the very people the government expected to deliver its vision.”

THE GUARDIAN, 2012
New technologies for analyzing, measuring and piloting complex systems allow public agencies and businesses to collaborate beyond their respective circles of influence, producing a more sustainable and resource-efficient growth, improved services, and a higher quality of life.

**SMART cities**

“A city can be defined as «smart» when investments in human and social capital, as well as traditional (transport) and modern (ICT) communication infrastructure, fuel sustainable economic development and a high quality of life, with a wise management of natural resources, through participatory governance.”

[SMARTGRID.GOV](http://www.smartgrid.gov)

“Cities are real-time systems, but rarely run as such. (...) Now leading cities have started to push this concept further. This will mean moving from departmental solutions to a city wide approach, creating economies of scale and scope that will result in :

- Economic development and the creation of jobs.
- Promoting resource efficiency and mitigating climate change.
- Providing a greater place to live and work.
- Running cities more efficiently.
- Supporting communities (...)

We believe smart cities will become part of the tool kit for our political and civil leaders to create 21st century cities and regions, better equipped to deal with climate change, population growth, demographic change and resource depletion, in an environment of financial constraints.”

[ARUP](http://www.arup.com)

**SMART grids**

“The Smart Grid represents an unprecedented opportunity to move the energy industry into a new era of reliability, availability, and efficiency that will contribute to our economic and environmental health. (...) The Smart Grid is not just about utilities and technologies; it is about giving you the information and tools you need to make choices about your energy use. A smarter grid will enable an unprecedented level of consumer participation.”

[SMARTGRID.GOV](http://www.smartgrid.gov)

“Estimates show that smart electricity grids should reduce CO2 emissions in the EU by 9% and the annual household energy consumption by 10%. They should also help ensure the secure functioning of the electricity system and enable the integration of vast amounts of renewables.”

[COMMISSION EUROPÉENNE](http://ec.europa.eu)

**SMART Everything !**

“Trillions of digital devices, connected through the Internet, are producing a vast ocean of data. And all this information – from the flow of markets to the pulse of societies – can be turned into knowledge (...). With this knowledge we can reduce costs, cut waste, and improve the efficiency, productivity and quality of everything from companies to cities. (...) Given all this low-cost technology and networking, what wouldn’t you enhance? What wouldn’t you connect? What information wouldn’t you mine for insight? What service wouldn’t you provide for a customer, citizen, student or patient? The answer is, we will do all these things. Because we can — and because we must.”

[IBM](http://www.ibm.com)
ARE “SMARTS” REALLY ALL IT TAKES?

SMART cities
A SMART CITY MAY FORGET WHAT MAKES A STRONG CITY.

“The intelligent city concept, if too rigid, becomes a futile effort to eliminate the incompleteness of the city, to get full closure/control. This is a recipe for built-in obsoleteness. Imagine if Rome could not have mutated across the millennia: it would be a dead city now. The planners of intelligent cities, notably Songdo in South Korea, actually make these technologies invisible, and hence put them in command rather than in dialogue with users.”

⇒ SASKIA SASSEN

SMART grids
SMART GRIDS FOR UTILITIES’ BENEFIT, OR TO FACILITATE A NEW ENERGY MODEL?

“The major beneficiary of [smart grid] technology is NOT the consumer, NOR the environment - but only the utility. Smart grids help the utility to better manage peak load and thereby reduce the need to build more power plants. It does not reduce overall power demand or GHG (greenhouse gas) emissions - it only displaces them to different periods of the day. (...)

With a third generation smart meter/grid, the renewable power companies would have a direct Internet connection to their customer’s power meter, independent of the utility. The customer’s meter may be «multi-homed» to several different power suppliers such that the customer can switch energy suppliers automatically based on price and availability of power. This will much more effective in reducing GHG.”

⇒ BILL ST ARNAUD

CITIZENS, NOT CITIES, ARE THE ONES WHO NEED TO GET SMARTER.

“Government is retreating from the provision of many services it used to provide. (...) Into the breach step the theoreticians of the smart city, promising improved managerial oversight, greater resource-utilization efficiency, and predictive models to help keep the chaos at bay. Many of these interventions will fail to deliver on their promise. (...) Is there any possibility that we could use networked technology to preserve the intricate order and innate, pre-existing intelligence of our great urban places? (...) If we want to design supple, responsive networked places — if we want to invest all the considerable power of contemporary informatic technology in making places that are worth living in — it will mean taking bold and decisive steps beyond the stale rhetoric and dubious intellectual heritage of the «smart city.»”

⇒ ADAM GREENFIELD

SMART Everything!
A PROJECT WITH NO SUBJECT

“«Algorithmic government» is a form of government that mostly feeds on raw data, signals that neither relate directly to specific individuals, nor to specific meanings, yet can be quantified. It operates by proactively configuring the space of possibilities rather than regulating conduct. It addresses individuals by way of alerts eliciting reflexive responses, rather than relying on individual will and capacity for understanding, (...)

An algorithmic government that shapes the space of future events, that acts on its citizens in modes of alert and reflex, and never puts itself in the position of being transformed by those it governs, nor of transforming them, is a frightening prospect - if only because human freedom can no longer provoke a response from it: this constant provocation is precisely what creates public discussion and deliberation around norms and rules that, in turn, are the condition for a sense of collective destiny to emerge.”

⇒ ANTOINETTE ROUVROY
A COLLECTIVE INTELLIGENCE

The networking of people as well as information creates a «collective intelligence» has emerged that is capable of handling problems that the best experts or computers cannot. A growing body of shared knowledge emerges from countless collaborations between «ordinary» people. Communities assemble beyond borders to pool information and ideas, solve complex problems, and engage in collaborative endeavours. Internet-supported collective intelligence is the driver of a new economy, new knowledge generation and a renewed democracy.

“The ultimate possibility of computerized conferencing is to provide a way for human groups to exercise a «collective intelligence» capability (...) Over the next decades, attempts to design computerized conferencing structures that allow a group to treat a particular complex problem with a single collective brain may well promise more benefit for mankind than all the artificial intelligence work to date.”

MURRAY TUROFF, 1976

“Our living knowledge, skills and abilities are in the process of being recognised as the primary source of all other wealth. What then will our new communication tools be used for? The most socially useful goal will no doubt be to supply ourselves with the instruments for sharing our mental abilities in the construction of collective intellect or imagination. Internetworked data would then provide the technical infrastructure for the collective brain... of living communities.”

PIERRE LÉVY, L’INTELLIGENCE COLLECTIVE, 1994

“Collective Intelligence is a powerful resource for creating value using the experiences and insights of vast numbers of people around the world.”

ERIC LESSER, IBM, 2012

“A new force in business is emerging. We’ve called it mass collaboration. It’s a new way for people to socialize, entertain, and transact in self-organizing peer communities of their choosing. Companies can design and assemble products with their customers, and in some case customers can do the majority of the value creation. Scientists can reinvent science by open sourcing their data and methods to offer every budding and experienced scientists in the world an opportunity to participate in the discovery process. Even governments can get involved, by using the new digital collaboration tools to transform public service delivery and engage their citizens in policy making.”

WIKINOMICS, 2006
THIS WILL NOT HAPPEN ON ITS OWN!

COMBINE HUMAN AND COMPUTER POTENTIAL!

“If we are going to solve the world’s most pressing problems, we must put the power of the Web to work – its technologies, its business models, and perhaps most importantly, its philosophies of openness, collective intelligence, and transparency. And to do that, we must take the Web to another level. We can’t afford incremental evolution anymore. It’s time for the Web to engage the real world. Web meets World – that’s Web Squared.”

TIM O’REILLY AND JOHN BATTELLE, WEB SQUARED, 2009

COLLECTIVE INTELLIGENCE MUST BE LEARNED!

“Thanks to the Internet and new technology, there is a growing amount of data more readily accessible to a larger number of users. This increase in the wealth of available information and knowledge is probably positive, as long as we learn to manage it. But there is no evidence that the widespread use of technology will move us toward a knowledge- or intelligence-based society.”

YVES LASFARGUES, HALTE AUX ABSURDITÉS TECHNOLOGIQUES, 2003

INVEST IN WHAT COUNTS THE MOST!

“One form [of collaboration] is personal sharing, done among otherwise uncoordinated individuals; think lolcats. Another, more involved form is communal sharing, which takes place inside a group of collaborators; think Meetup.com groups for post-partum depression. Then there is public sharing, when a group of collaborators actively wants to create a public resource; think Wikipedia. Finally, civic sharing is when a group is actively trying to transform society. The spectrum from personal to communal to public to civic describes the degree of value created for participants versus nonparticipants. (...) We should care more about public and civic value than about personal or communal value because society benefits more from them, but also because public and civic value are harder to create.”

CLAY SHIRKY, COGNITIVE SURPLUS, 2010

THE TRIUMPH OF MEDIocreITY?

COLLECTIVE INTELLIGENCE DOES NOT INNOVATE!

“Misplaced faith in the crowd is a blow to the image of the heroic inventor. We need to nurture and fund inventors and give them time to explore, play and fail. A false idea of the crowd reduces the motivation for this investment, with the supposition that companies can tap the minds of inventors on the cheap. Does crowdsourcing exist as it is popularly conceived? Yes, it does, but it doesn’t have anything to do with innovation.”

DAN WOODS, 2009

GIVE COLLECTIVE INTELLIGENCE ITS DUE, BUT KEEP IT IN ITS PLACE!

“The collective is more likely to be smart when it isn’t defining its own questions, when the goodness of an answer can be evaluated by a simple result (such as a single numeric value,) and when the information system which informs the collective is filtered by a quality control mechanism that relies on individuals to a high degree. Under those circumstances, a collective can be smarter than a person. Break any one of those conditions and the collective becomes unreliable or worse.”

JARON LANIER, DIGITAL MAOISM, 2006

WHAT WE EXPECT FROM DIGITAL TECHNOLOGIES IN SERVICE OF THIS PROMISE

- Tools and platforms to establish, expand, and sustain networks
- Information and knowledge accessible to all
- Personal production and publication tools
- Collective space and tools that support exchange, sharing, collaboration, co-production, representation, modelling, evaluation, discussion, decision-making…
Tomorrow, from the comfort of home or at an open space just around the corner, anyone will be able to produce the objects they want, need or have dreamt about. The Internet revolution extends to the design and production of physical objects.

“Like the earlier transition from mainframes to PCs, the capabilities of machine tools will become accessible to ordinary people in the form of personal fabricators. This time around, though, the implications are likely to be even greater because what’s being personalized is our physical world of atoms rather than the computer’s digital world of bits.”

NEIL GERSHENFELD, FAB: THE COMING REVOLUTION ON YOUR DESKTOP, 2005

“Two future forces, one mostly social, one mostly technological, are intersecting to transform how goods, services, and experiences—the «stuff» of our world—will be designed, manufactured, and distributed over the next decade. An emerging do-it-yourself culture of «makers» is boldly voiding warranties to tweak, hack, and customize the products they buy. And what they can’t purchase, they build from scratch. Meanwhile, flexible manufacturing technologies on the horizon will change fabrication from massive and centralized to lightweight and ad hoc. These trends sit atop a platform of grassroots economics—new market structures developing online that embody a shift from stores and sales to communities and connections.”

IFTF, 2008

“Recent breakthroughs in technology afford sharing such that anyone can quickly document and showcase their DIY projects to a large audience. An emerging body of tools allows enthusiasts to collaboratively critique, brainstorm and troubleshoot their work, often in real-time. (...) This accessibility and decentralization has enabled large communities to form around the transfer of DIY information, attracting individuals who are curious, passionate and/or heavily involved in DIY work.”

RISE OF THE EXPERT AMATEUR, 2010

“As manufacturing technologies follow the path from factory to home use, like personal computers, «personalized» manufacturing tools will enable consumers, schools and businesses to work and play in new ways. Emerging manufacturing technologies will usher in an industrial «evolution» that combines the best of mass and artisan production models, and has the potential to partially reverse the trend to outsourcing. Personal manufacturing technologies will unleash «long tail» global markets for custom goods, whose sales volumes of will be profitable enough to enable specialists, niche manufacturing, and design companies to make a good living. Underserved communities will be able to design and manufacture their own medical devices, toys, machine parts and other tools locally, using local materials. At school, personal-scale manufacturing tools will empower a new generation of innovators, and spark student interest in science, technology, engineering and math education.”

JEFFREY LIPTON, FACTORY@HOME, 2010
THE SHIFT FROM BITS TO ATOMS
AIN’T THAT EASY!

IT WILL BE TOUGH TO ATTAIN THE LEVEL OF EFFICIENCY AND QUALITY FOUND IN MASS PRODUCTION!

“It won’t surprise me to someday see 3D printers gain the ability to mix substrates and materials, but it will be decades before a home printer can match the fidelity of any given bit of electronics mass-manufactured today. But let’s presume for a moment that a desktop printer could, say, print an iPhone. Where would the raw materials come from? They’re still being sourced from the same less-than-eco-friendly sources they come from today. The environmental cost of material goods doesn’t change one bit. Atoms will not be the new bits until we can literally transmute one type of atom into another.”

JOEL JOHNSON, 2010

NOT EVERYTHING SHOULD BE PRODUCED INDIVIDUALLY!

“People could use desktop manufacturing to make weapons or other harmful products. As with any tool, it could be used for malevolent purposes. This capability, combined with the ease of Internet file transfer could mean the simple creation and proliferation of destructive devices. (...) Part cost for personal fabrication is much higher than a mass-produced part, so the value of the product must be justified. This is not a process for everyday commodity objects. It only is feasible for applications that utilize its inherent advantages. However, the lack of tooling costs, assembly inventory management, packaging and shipping costs will offset this high part cost to some degree. Also, part cost will decrease with time as the technology advances.”

JASON A. MORRIS, 2007

FIND THE RIGHT «NICHES» FOR SINGLE UNIT PRODUCTION!

“While 3D printing could be used to create wholesale copies of manufactured goods, it could also be used to create replacement parts for worn or broken goods. Instead of scouring the Internet for that oddly shaped bracket or hinge, an individual could simply print out a perfect replacement part. In fact, the individual might decide to improve upon the original part to prevent it from breaking in the future.”

MICHAEL WEINBERG, 2010

PROTOTYPED AT HOME, MADE IN CHINA!

“The tools of factory production, from electronics assembly to 3-D printing, are now available to individuals, in batches as small as a single unit. Anybody with an idea and a little expertise can set assembly lines in China into motion with nothing more than some keystrokes on their laptop. A few days later, a prototype will be at their door, and once it all checks out, they can push a few more buttons and be in full production, making hundreds, thousands, or more.”

CHRIS ANDERSON, 2010

WHAT WE EXPECT FROM DIGITAL TECHNOLOGIES IN SERVICE OF THIS PROMISE

• The democratisation of access to design and production tools
• The ability to exchange plans, digital blueprints and schematics under open license agreements to facilitate their spread, evolution, mashups, and re-use.
• The interconnection of all participants in the personal and digital fabrication ecosystem
• The possibility of producing objects at home with the right equipment, or online via «cloud manufacturing» services
• The development of a «Long Tail» of objects
Digital technology will equip new forms of mobility and de-mobility, by transforming environmental, economic and energy constraints into opportunities.

All modes of mobility will become more efficient, more humane and more sustainable thanks to technological systems that optimize and organize them.

People will freely shift between different modes of transport.

They will be able to choose their own form of mobility—physical, virtual or hybrid: nomadic tools and intermediary places for work and socializing will facilitate living and working «remotely».

**TRANSFORM SYSTEMS OPTIMISATION**

“Systems for intelligent traffic management can improve commute times, provide more reliable information to urban planners, increase business productivity and improve citizens’ quality of life. And they can reduce congestion, fuel consumption and CO2 emissions at the same time.

On our rapidly urbanizing planet, maintaining the flow of traffic and transport is crucial. To address this need in the 20th century, motorways that spanned from one region to another and one country to another were built. In the 21st century, intelligent systems will undoubtedly be the hallmark of progress.”

IBM

“Travel and transport management will be based on an increasingly complex encounter between supply and demand. Demand becomes more complex because people move at increasingly diverse rhythms and times, to an increasing variety of destinations. Whereas the supply orchestrates an ever-expanding array of transport modes. The marketplace where mobility supply and demand meets is becoming increasingly diverse. Organizing one’s mobility could become a nightmare.”

BRUNO MARZLÖFF, 2009

“By 2030, charging points for plug-in electric vehicles and hydrogen fuel cell vehicles will be installed virtually everywhere, providing a distributed infrastructure for sending electricity both from and to the main electricity grid.”

JEREMY RIFKIN, LA TROISIÈME RÉVOLUTION INDUSTRIELLE, 2012

**VIRTUAL OR HYBRID MOBILITY?**

“Distance living will generate freedom of choice. It will create new places, new spaces and new techniques. (...) Distance living will allow us to stand apart without forcing us to break ties with the rest of society. (...) Our personal living space [will] be modified to adapt to these changes: the era of home automation is upon us. (...) The living room will make way for the «com room», the communications and media room [where] people will go to telecommute, teleshop, and telecommunicate.”

CHRISTIAN LOVITON, LA VIE À DISTANCE, 1989

“The first step is to create a network of interconnected spaces dedicated to tele-activity. These are places with flexible layouts where people can work, use cutting edge videoconferencing tools, receive training... located less than fifteen minutes from home, and accessible without using individual transportation that pollutes the environment. (...) Sharing a space with other neighbourhood residents, rather than working alongside company colleagues, cannot help but benefit socialisation.”

GILLES BERNHAUT, LE DÉVELOPPEMENT DURABLE 2.0, 2008

“Let us also consider the impacts that exchange dematerialisation and telecommuting are likely to have on lowering our carbon footprint and on introducing sustainable development dynamics.”

CÉCILE DUFLOT, 2012
THE UNBELIEVERS, THE REFUSERS

SOLUTIONS THAT GENERATE THEIR OWN PROBLEMS

“The complexity of some interactions requires face-to-face communication, whose advantages cannot be completely reproduced in digital communication. (...) For these reasons, long distance interactions have complemented and will always complement face-to-face meetings, but can never be a perfect substitute for the latter.”

ALAIN RALLET ET ANDRÉ TORRE, 2009

“The speed of transportation and instantaneous transmissions reduce the world to nothing. We live in a singular era: our understanding of time and distance scales has been turned upside down, and our Earth has become too small for progress.”

PAUL VIRILLIO, 2010

“The ability to operate in an increasing variety of social arenas opens up possibilities that are not equally accessible to everyone. Physical and virtual mobility are playing increasingly important roles in the formation of individual and social inequalities.”

FRANÇOIS ASCHER, 2004

“We will accept this fact just as we accepted the previous machines, because the profits generated will exceed the foreseeable risks. We will be right as long as we don’t underestimate the risks: as of this moment, these must be studied, understood and minimised.”

GABRIEL PLASSAT, 2010

A NOMADIC LIFE?

“The idea of mobility is being increasingly understood in terms of initiating relationships, opportunities and synergies, rather than simply crossing distances at a given speed. What I call «relayance» is becoming the new benchmark of efficient mobility.

In the coming years, more and more mobility services will be designed to maximize the links they create and the opportunities they offer. Political decisions will penalise modes that offer poor «relayance per mile». Mobility as an experience and a vehicle for connectedness will increase, even though distances covered will not. In the future, we will need to increase mobility while stabilizing, or reducing, the numbers of miles traveled.”

GEORGES AMAR, 2012

“Neo-nomadism» describes a transition that might be cultural, or indicate a crossing of frontiers: geographic, physiological, academic, or urban. (...) It denotes a psychological, chemical transformation, resulting from a kind of multi-mobility that is at once physical, mental and digital.

Sustainable neo-nomadism capitalizes on the benefits of multi-mobility. It suggests a rethinking of how things become obsolete, in order to monopolize the least possible energy. It points towards sharing as a social and economic solution, and a neo-vernacular attitude toward spatial construction.”

YASMINE ABBAS, LE NÉO-NOMADISME, 2011

WHAT WE EXPECT FROM DIGITAL TECHNOLOGIES IN SERVICE OF THIS PROMISE

• Optimize existing transport systems through technical solutions, such as intelligent control systems
• Enable easier intermodal mobility, by providing more choice and blurring the boundary between individual and collective modes of transportation
• Sustainable mobility through non-motorised and electric transport, in addition to the development of shared transportation modes
• Substitute digital technology for physical mobility: provide the potential to consume, work, socialize, and enjoy leisure activities...remotely
• A network of shared, interconnected, multifunctional, flexible, telecenters and proximity workspaces
• Make spaces more flexible and move services/resources toward people, rather than the reverse
• Improve the quality of time spent in transportation
The alliance between digital and «green» technologies enables resource- and energy-efficient, sustainable, and environmentally friendly growth. In itself, «green innovation», powered by digital technologies, is a tremendous vector for growth. The capacity the Internet has shown to unite people for a common purpose will also contribute to the necessary changes in behaviour and collective decisions that our planet needs.

Digital technology not only gives us the ability to work collectively, it also provides us with the informational resources capable of measuring results and driving complex systems, as well as the means to control other forms of technology. The construction industry is primarily implicated here, as well as mobility, energy efficiency (including networks), industrial ecology, and the whole of industry and its related services. Technology is not only a top priority for the planet, it shows great potential in terms of territorial job and value creation.

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ACIDD

“Various examples illustrate the role of ICTs as a provider of solutions to environmental challenges: Smart grids and smart power systems in the energy sector can have major impacts on improving energy distribution and optimising energy usage. Smart housing can contribute to major reductions of energy use in hundreds of millions of buildings. Smart transportation systems are a powerful way of organising traffic more efficiently and reducing CO2 emissions.”

OCDE, 2009

“It is impossible to conceive of new energy models without information and communication technologies. The key challenge now is to find the right combination of renewable energies, through the development of «smart grids»: intelligent electricity transport and regulation networks.”

CLAUDIE HAIGNERÉ, 2011

“By fuelling man’s dreams, and marking the path of what is possible and desirable, the demands presented by sustainable development—coupled in creative synthesis with the promise of scientific and technological advances—open up completely new avenues for innovation.”

PIERRE MUSSO, LAURENT PONTHOU, ERIC SEUILLET, FABRIQUER LE FUTUR, 2007

“Instead of assuming that all products are to be bought, owned, and disposed of by «consumers», products containing valuable technical nutrients—cars, television, flooring, computers and refrigerators, for example—would be reconceived as services people want to enjoy. (...) In this scenario, people could satisfy their appetite for new products as often as they wanted, without guilt, and industry could encourage them with impunity, knowing that by doing so both parties support the technical metabolism.”

MICHAEL BRAUNGART, WILLIAM MCDONOUGH, CRADLE TO CRADLE, 2002
THE UNBELIEVERS, THE REFUSERS

TECHNOLOGY AT THE SERVICE OF SUSTAINABLE GROWTH: AN ILLUSION?

“Computers and other IT infrastructure consume significant amounts of electricity, placing a heavy burden on our electric grids and contributing to greenhouse gas emissions. Additionally, IT hardware poses severe environmental problems both during its production and its disposal. IT is a significant and growing part of the environmental problems we face today.”

→ SAN MURUGESAN, « HARNESING GREEN IT », 2008

“Sustainable development is articulated through communities, and relies on values and expertise, but not on a global model for sharing. Sustainable development 2.0 will introduce an era of collaboration: information and communication technologies (ICTs) allow us to imagine this on a global scale. (...) And I believe in the model where everyone does their bit: individual contributions can be compatible with a global blueprint.”

→ GILLES BERHAUL T, ACIDD, 2009

TOWARD A MODEL INSPIRED BY THE INTERNET?

“The conjoining of Internet communication technology and renewable energies is giving rise to a Third Industrial Revolution. In the twenty-first century, hundreds of millions of human beings will be generating their own green energy in their homes, offices, and factories and sharing it with one another across intelligent distributed electricity networks—an intergrid—just like people now create their own information and share it on the Internet.”

→ JEREMY RIFKIN, LA TROISIÈME RÉVOLUTION INDUSTRIELLE, 2011

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WHAT WE EXPECT FROM DIGITAL TECHNOLOGIES IN SERVICE OF THIS PROMISE

• Measurement of the environment, of the flow of resources/goods/people, and of power consumption/emissions, producing openly accessible data
• Modeling, simulation and decision support skills and tools made available to public authorities, private businesses, NGOs and citizens alike
• Optimisation and integration of existing systems through the use of « Smart » technology
• Dematerialisation of objects, flows (resources/goods/people), transactions...
• The establishment of a circular economy, where waste for some is food to others
• Green, open, connected, networked innovation
• A contribution to building awareness and collective action through dedicated spaces and tools for cooperation
• The reduction of digital technology’s own ecological footprint

→ YANN MOULIER-BOUTANG, L’ABEILLE ET L’ÉCONOMISTE, 2010
READISCOVERED, AUGMENTED, EXTENDED DEMOCRACY

Digital technology broadens access to information and the means of expression, therefore it broadens democracy. It empowers those fighting dictatorship. In democracies, it contributes to transparency, it brings elected representatives and citizens closer together, it promotes citizen participation in public life. It creates a new form of continuous, interactive, everyday democracy.

“For citizens, the Internet is a unique information and education resource and thus can be a helpful tool to promote freedom, democracy and human rights.”

G8, DEAUVILLE, 2011

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“Citizens involvement, online debate, chat... politicians now hold cyber meetings. do their campaigning via the Internet and present their plans online. They reach out to citizens and opinion leaders to refine their programs and to get more in line with social realities. With this kind of interactivity, every citizen has a voice. Web 2.0 has meant that creation, and even what is now called "co-creation", belong to all those who can develop programs and projects with a computer. Political culture is now within anyone's grasp.”

GEORGES-MARC BENAMOU DANS PAROLE D'ÉLUS, 2007

“Building and developing a city is a goal that cannot be achieved without the active participation of its citizens. New technologies provide people with the immediate means to get involved in local life.”

JEAN-CLAUDE WEISS, MAIRE DE NOTRE DAME DE GRAVENCHON, 2009

“Using new information and communication tools, (...) this «active citizenry» is deeply transforming the role of elected officials, who have become mediators among citizens instead of confiscating the powers of representation. It is also transforming public administration, which is rediscovering its real public function.”

DE LA PYRAMIDE AUX RÉSEAUX, 2007

“Democracy is all about connecting people with decision-making. We help governments around the world do this by providing awesome digital democracy apps and consultation software to facilitate online policy-making and consultation.”

SITE DE LA SOCIÉTÉ DELIB
THE SKEPTICS, THOSE THAT THINK FURTHER

BEWARE OF ILLUSION!

“Insofar as it ignores the time required to make any kind of rational judgment and voluntarily move beyond specific interests, electronic voting is a dangerous illusion.”
→ MARC GUILLAUME, 1999

“We must not allow ICTs to be used in ways that cause unintended shifts of power away from our representatives. We need to ensure that public bodies can hold each other accountable and not overturn our constitutional designs based on inequitable investments in information and communications strategies and applications. I expect parliaments, legislatures, and local councils to take up the ICT challenge in order to remain politically relevant and keep what power they have.”
→ STEVEN CLIFT, 2002

A DEMOCRACY UNDER RENOVATION NEEDS ACTIVE CITIZENS!

“The most fundamental political problem posed by the network’s development may be the control of the public agora by the citizens themselves.”
→ MANUEL CASTELLS, LA GALAXIE INTERNET, 2001

“It is only the beginning!”

“A digital revolution, but political apparatus remain docked.
New uses, old controls.
Free cultures, prying merchants.
Technology is changing the world and it’s doing it now. We are all handed a new opportunity: trim our own sails, take our public life back into our hands, or let the Old World rule and control as it’s always done.
Ship’s apprentice or old sea dog, politically disillusioned or utopian: climb aboard.”
→ DAVID DUFRESNE ET PIERRE MOUNIER, PARTI PIRATE, 2012

“Direct democracy in cyberspace would implement a form of computer-mediated civility. This new democracy could take the form of a large-scale collective game in which the most cooperative, the most urbane, the best producers of consonant variety would win (but only temporarily) rather than those most capable of assuming power, silencing voices of others, or capturing anonymous masses within molar categories. (...) We would move from a state of democracy (Greek demos: people, kratin: order) to a state of demodynamics (Greek dunamis: strength, power).”
→ PIERRE LEVY, L’INTELLIGENCE COLLECTIVE, 1997

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“The New World of interactive democracy will only take shape if a newly renovated form of journalism emerges alongside it; one that is capable of leading public debate while at the same time maintaining an actively investigative presence in society, and endeavouring to intellectually decipher the complexities of the world.”
→ PIERRE ROSANVALLON, LA LÉGITIMITÉ DÉMOCRATIQUE, 2010

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The digitisation of documents, payments, services, processes, or even objects like books has made our lives easier and lighter.

Everything is always accessible, anywhere, at any time. A growing number of products are being transformed into services. Different objects converge into a single, easily transportable object, like a smartphone. We consume fewer natural resources while benefiting from increased performance and comfort: dematerialisation emancipates us, and lightens our load.

**A LIGHTER, EASIER LIFE**

“This has nothing to do with economy, this is behavioral change. Freedom in all forms is the thing we value most of all and ready to spend a lot of money for, and houses and cars have negative value in this respect, they bind you.”

> THE ATLANTIC, 2012

“We need to forget the Internet, because it’s going to vanish: it will merge with our environment, like electricity, water and gas, and become a kind of global public utility. This can be seen already, through the development of the cloud. When we have attained what I call the « symbiotic web », we will no longer be on the Internet but inside it: we will live in an informational ecosystem.”

> JOËL DE ROSNAY, 2012

“Dematerialisation is an opportunity to eliminate the tasks that don’t add value. (...) We put the customer first, and in the background, we make our own life easier.”

> PATRICK FEVRE, SNCF, 2011

**A MORE EFFICIENT, MORE VIRTUOUS ECONOMY**

“Dematerialization is occurring with all sorts of products. Banking has shrunk to a handful of electrons moving on a cellphone, as have maps, encyclopedias, cameras, books, card games, music, records and letters—none of which now need to occupy physical space of their own. And it’s happening to food, too. In recent decades, wheat straw has shrunk as grain production has grown, because breeders have persuaded the plant to devote more of its energy to making the thing that we value most. Future dematerialization includes the possibility of synthetic meat—produced in a lab without brains, legs or guts.”

> MATT RIDLEY, 2012

“If consumers dematerialize their intensity of use of goods and technicians produce the goods with a lower intensity of impact, people can grow in numbers and affluence without a proportionally greater environmental impact.”

> JESSE H. AUSUBEL, PAUL E. WAGGONER, 2008

“In an ideas economy, up-to-date knowledge could be a more nimble and valuable asset than a house. (...) Ultimately, if the Millennial generation pushes our society toward more sharing and closer living, it may do more than simply change America’s consumption culture; it may put America on firmer economic footing for decades to come.”

> THE ATLANTIC, 2012
ECONOMICALLY SPEAKING, «DEMATERIALISATION» IS A MYTH!!

“As technology improves and prices of technological goods fall, we don’t just buy the same amount of stuff (products) using less materials, what we do is buy more of the same stuff and lots more other stuff as well. (...) In the real world you can’t make omelettes without using, and breaking, a few eggs. Dematerialization is a myth. A dematerialized economy is oxymoronic — and possibly the shortened version of this word as well.”

→ STEPHEN LEWIS, 2012

“An employee handles digitised information using dematerialised media. Work is done on a representation of reality that appears on a computer screen rather than on reality itself: the salesperson no longer «sees» customers, vendors do not «see» their stock, the operator no longer «touches» the valve... Workstations can be located far away from the location of work-related accidents, and work can be performed with less physical manipulation and less physical effort, and results in fewer accidents. Work-related activity also includes the capacity for rapid digital data treatment and transmission. But it is hard for some to manage abstraction, which sometimes feeds a sense of dehumanisation.”

→ YVES LASFARGUE, 2011

SIMPLIFY SIMPLIFICATION, CONTROL DEMATERIALISATION!

“More and more of your public documents are digitised, and this trend is increasing. Your bills and records are difficult to access, scattered as they are across your suppliers’ customer interfaces. A longer and longer list of codes and passwords adds to your daily aggravation and makes you gradually lose control of your document management and your access to your personal consumer data. Adminium allows you to store, protect and organise your documents in a secure space that has been entirely dedicated to you and customised to suit your needs. Your space is accessible from any device (computer, smartphone, iPad...) connected to the Internet.”

→ ADMINIUM

“This malicious device [Kindle] is designed to attack the traditional freedoms of readers: There’s the freedom to acquire a book anonymously, paying cash — impossible with the Kindle for all well-known recent books. There’s the freedom to give, lend, or sell a book to anyone you wish — blocked by DRM and unjust licenses. Then there’s the freedom to keep a book — denied by a back door for remote deletion of books.”

→ RICHARD STALLMAN, 2009
The internet is becoming more secure to make the world a safer place. It facilitates the fight against crime and terrorism. It makes the critical infrastructures we depend on more transparent and reliable. It facilitates the prediction, prevention and resolution of risk, crisis and conflict. It promotes peace.

“Analysis of large data sets will improve social, political, and economic intelligence by 2020. «Big Data» will facilitate things like»nowcasting» (real-time «forecasting» of events); the development of «inferential software» that assesses data patterns to project outcomes; and the creation of algorithms for advanced correlations that enable new understanding of the world. Overall, the rise of Big Data is a huge positive for society.”

 IMAGINING THE INTERNET (MAJORITY OPINION), 2012

“It is now possible to do a background check on a potential date before ever meeting him or her. We are also notified like when a child predator moves into our neighborhood, and of emergencies both in our local communities and around the world. We can even monitor what our children do on the Internet and filter websites to protect them from things they should not see. We really do live in a much safer world, thanks to the Internet.”

 SMASHING TOPS, 2011

“Computer hackers steal personal data and money. Traffickers trick people into slavery and paedophiles post photos on the Internet. Terrorists plot their next attack while drugs cross our oceans. Passports and cars stolen in one country are used or sold in another while money is laundered by organized crime. Counterfeit medicines and goods threaten lives and economies. Today’s criminals pass borders both physically and virtually. To stay one step ahead, police must coordinate their efforts internationally.”

 CONNECTING POLICE FOR A SAFER WORLD, INTERPOL, 2011

“It is now possible to do a background check on a potential date before ever meeting him or her. We are also notified like when a child predator moves into our neighborhood, and of emergencies both in our local communities and around the world. We can even monitor what our children do on the Internet and filter websites to protect them from things they should not see. We really do live in a much safer world, thanks to the Internet.”

 SMASHING TOPS, 2011

“Analysis of large data sets will improve social, political, and economic intelligence by 2020. «Big Data» will facilitate things like»nowcasting» (real-time «forecasting» of events); the development of «inferential software» that assesses data patterns to project outcomes; and the creation of algorithms for advanced correlations that enable new understanding of the world. Overall, the rise of Big Data is a huge positive for society.”

 IMAGINING THE INTERNET (MAJORITY OPINION), 2012

“Computer hackers steal personal data and money. Traffickers trick people into slavery and paedophiles post photos on the Internet. Terrorists plot their next attack while drugs cross our oceans. Passports and cars stolen in one country are used or sold in another while money is laundered by organized crime. Counterfeit medicines and goods threaten lives and economies. Today’s criminals pass borders both physically and virtually. To stay one step ahead, police must coordinate their efforts internationally.”

 CONNECTING POLICE FOR A SAFER WORLD, INTERPOL, 2011
THE UNBELIEVERS, THE REFUSERS

A TRANSPARENT SOCIETY?

“IT security in 2020 will be less about protecting you from traditional bad guys, and more about protecting corporate business models from you. (...) Welcome to the future. Companies will use technical security measures, backed up by legal security measures, to protect their business models. And unless you’re a model user, the parasite will be you.”

BRUCE SCHNEIER, 2010

WHO IS PROTECTING WHOM, FROM WHAT?

“Peace software are tools and platforms that help to build peace between people.”

WORLD PEACE THROUGH TECHNOLOGY

SECURITY FROM ABOVE? FROM BELOW?

“Decentralized systems -- the power of many -- can combat decentralized foes (...) Open, transparent environments are more secure and more stable than closed, opaque ones. The connectedness of the Internet -- people talking with people -- counters the divisiveness terrorists are trying to create. The openness of the Internet may be exploited by terrorists, but as with democratic governments, openness minimizes the likelihood of terrorist acts and enables effective responses to terrorism.”

THE INFRASTRUCTURE OF DEMOCRACY, 2005

“Technology is becoming invisible, embedded in everyday objects, and woven into the urban fabric. At the same time, it provides a kind of permanent visibility. Anyone can be noticed, observed, or followed. This visibility extends to the past as well, thanks to the countless number of invisible traces that technology can collect, record and store. (...) It is becoming possible for us to discern patterns, identify recurring structures, in a word: to predict the future. The transparent society pushed to its extreme leads to the perfect economy -- the behaviour of each economic agent plotted perfectly -- it points to the end of psychology -- to the abundance of available information trumping intuition and introspection -- and an absolute democracy -- a permanent control of all over all.”

FRÉDÉRIC KAPLAN, FUTUR 2.0, 2007

“‘The future can be seen. Murder can be prevented. The guilty punished before the crime is committed. The system is perfect. It’s never wrong. Until it comes after you.’

MINORITY REPORT, 2002

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THE INFRASTRUCTURE OF DEMOCRACY, 2005
A unified and secure digital identity will simplify Internet users' lives, protect their privacy, foster trust in online relationships, promote the digitisation of public services, and contribute to the fight against criminal activity and terrorism.

**MORE SECURITY, MORE CONVENIENCE**

"By 2010 European citizens and businesses shall be able to benefit from secure means of electronic identification that maximise user convenience while respecting data protection regulations."

**UNION EUROPÉENNE, 2005**

"In order to prevent counterfeiting and piracy/terrorism activities, there is a need to use reliable identification and authentication methods. (...) Prevention of counterfeiting, protection of privacy, and the streamlining of administrative tasks are level-one targets to change from ID to eID. Less fraud, increased transparency in the public domain, greater convenience for the citizens, cost reduction in the public domain, and better service & quality are examples of level-two targets."

**EUROSMART, 2011**

**EXPLORE AND EXPRESS THE VARIOUS FACETS OF OUR IDENTITY**

Individuals may forge real, alternate personalities that are distinct from the legal personality that operates them. In order to ensure that this right is not exercised toward the commission of any infraction, these alternative identities could be registered with an organisation charged with their oversight.

**«LA VIE PRIVÉE À L'HEURE DES MÉMOIRES NUMÉRIQUES», RAPPORT DU SÉNAT, 2009**

"We will witness the foundation of a new form of existentialism: Vexism, or virtual existentialism. The Vexists (...) will define themselves as they wish and may change at any time, from moment to moment, or they may live out multiple identities simultaneously. This new existentialism, a virtual miracle, overcomes the limitations that are posed by reality itself; our individual freedom no longer clashes with that of others, nor with conventions or physical limitations..."

**MALO GIROD DE L'AÎN, 2010, FUTUR VIRTUEL, 2005**
ARE ALL THESE THINGS ACTUALLY COMPATIBLE?

SECURITY, PRIVACY AND CONVENIENCE MAKE STRANGE BEDFELLOWS

“Each product, each technique promises to make life easier for us. Identities can be more secure but at the same time its management brings more privacy issues. The identity management tools will have to respect the user’s privacy and security, and they will also have to facilitate the application of laws. In other words, the balance between privacy and security will have to be preserved in the future information Society.”

RESEAU D’EXCELLENCE EUROPÉEN FIDIS, 2006

“Not everyone is safer by giving out their real name. Quite the opposite; many people are far LESS safe when they are identifiable. And those who are least safe are often those who are most vulnerable.”

DANAH BOYD, 2011

WE DON’T NEED NO UNIFIED IDENTITY!

“Even if users might have a practical interest in uniting their various identities, it is unlikely that they would want to share their assembled identity puzzle with others. Moreover, trying too hard to guarantee, certify and ensure confidence in the «realism» of an identity ignores the fact that in many contexts – often the most dynamic – people do not want to be themselves.”

DOMINIQUE CARDON, 2008

INVENTING 「PRIVACY 3.0」?

“Privacy 3.0 should be a combination of (1) Data minimization, (2) User control of personal information disclosure, and (3) Contextual integrity. Data minimization aims to limit collection and processing of personal data. User control supports users in deciding which personal information is released to whom and in which situation. Contextual integrity makes the original context in which particular personal data have been generated easily accessible to all entities that are aware of that particular data.”

KATRIN BORCEA-PFITZMANN, ANDREAS PFITZMANN, MANUELA BERG, 2011

IT’S NOT THE TECHNOLOGY!

“Remember that ultimately, what you are trying to control is not data, so much as the use to which that data is put... which is a human problem, not a technical one.”

ROBIN WILTON, KANTARA INITIATIVE, 2010
Digital technologies provide the solutions we need to create a more widely available, less expensive, patient-centred healthcare system. It enables the emergence of preventative medicine based on measurement systems that can be utilised by individuals and professionals alike. From health to well-being, from well-being to corporeal transformation: when combined with nanobiotechnology and robotics, digital technology will allow us to literally transform our bodies.

“A STRONGER, MORE BEAUTIFUL BODY... MY BODY

“Humans have limited capabilities. Humans sense the world in a restricted way, vision being the best of the senses. Humans understand the world in only 3 dimensions and communicate in a very slow, serial fashion called speech. But can this be improved on? Can we use technology to upgrade humans?”

— KEVIN WARWICK, I CYBORG, 2002

SOUND BODIES ARE PART OF A SOUND SYSTEM

“e-Health matters. It can improve access to healthcare and boost the quality and effectiveness of the services offered. (...) When combined with organisational changes and the development of new skills, e-Health can help to deliver better care for less money within citizen-centred health delivery systems. It thus responds to the major challenges that the health sector is currently facing.”

— COMMISSION EUROPÉENNE, 2004

“Thanks to Doctissimo, Internet users can improve their knowledge of their bodies and behaviours, and gain a better understanding of the risks to which they are exposed. People can finally take control of their health, find their own balance, and become the principal architects of their own well-being.”

— DOCTISSIMO

“By slowing entry into the healthcare system, Quantified Self helps us stay well for longer, and makes it easier to limit healthcare costs.”

— EMMANUEL GADENNE, GUIDE PRATIQUE DU QUANTIFIED SELF, 2012

“This electronic second skin... points toward new horizons whose only limit is that of our imagination. Is it impossible to imagine that one day one might wear a completely new kind of tattoo on one’s arm, featuring not an inked illustration, but an animation? And if that were possible, would we be far from the possibility of installing display screens... covering all or part of our skin?”

— CYRIL FIEVET, BODY HACKING, 2012
WE SHOULDN’T OPTIMISE THE HEALTHCARE SYSTEM, WE SHOULD REVOLUTIONISE IT!

“eHealth is accepted as an idea but not yet as a practical, valuable and essential support tool for facing many of healthcare’s challenges. (…) The direction of travel is towards more informed self-management and responsibility for both patient and citizen. Technology has to become the servant of care, delivering eHealth as close as possible to citizens and patients, bringing subsidiarity into healthcare and enabling results that people on the ground want and need rather than what others in the chain think they want.”

→ EHTEL, 2009

“We should not keep spending all our resources on those in poor health to lower their risk factors, but instead should focus on those in good health to keep them where they are. This, however, flies in the face of much analysis around health care reform that are hoping for significant multi-million-dollar savings by focusing disease management efforts on risk factors like smoking, alcohol abuse, high blood pressure, cholesterol, and body mass index.”

→ INNOSIGHT INSTITUTE, 2011

“The risks may outweigh the potential rewards!

“Since 2006, the Clinatec program has been working in quasi-secrecy on the brain/machine interface: the intrusion of medical and political power into our innermost consciousness. The primate/machine and (already existing) man/machine interface open the door to the remote control of rats, macaques, people – in short, to the production of human robots, «cyborgs». Does anyone really need to hear about the advantages that this new category of the population would present to businesses, governments, armies?!”

→ PIÈCES ET MAIN D’OEUVRE, 2011

“By understanding how face-detection algorithms work, an anti-face can be constructed and used as a guide for creating makeup and hair-styling that foils the face detection process. As a result, your face becomes undetectable to machines yet retains some level of legibility to humans.”

→ CV DAZZLE, 2011
CLIMBING THE DIGITAL SOCIAL LADDER

Through the tools and knowledge it makes available to everyone, digital technology helps to overcome social divides. It improves the chances of the poorest and most isolated. It promotes social interaction and economic inclusion, education and democracy: it is the avenue toward upward mobility for the 21st century.

“We are resolute to empower the poor, particularly those living in remote, rural and marginalized urban areas, to access information and to use ICTs as a tool to support their efforts to lift themselves out of poverty.”
⇒ SOMMET MONDIAL DE LA SOCIÉTÉ DE L’INFORMATION, 2004

“Inherently, relational technologies are levers of empowerment, creativity, collaboration and appropriation. (...) Where individuals are no longer able to work together, these technologies facilitate the creation of trust; when the social bond has been broken, they allow for its repair; when confronted with stagnation, they facilitate action; when faced with individualism, they encourage the pooling of resources.”
⇒ MANIFESTE LIENS, 2011

“Our experimental projects show that women, be they young and starting their education, looking for a job or changing fields, single mothers, (...) on the whole see computer access and training as providing them with greater freedom and more opportunities for professional advancement and social participation. Digital skills also allow them to improve their self-esteem and sense of self-worth, their parenting, and to better reconcile their family and professional lives.”
⇒ FRANÇOIS ENAUD, ANSA (SOLIDARITÉS ACTIVES), 2010

“Mission Statement: To create educational opportunities for the world’s poorest children by providing each child with a rugged, low-cost, low-power, connected laptop with content and software designed for collaborative, joyful, self-empowered learning. When children have access to this type of tool they get engaged in their own education. They learn, share, create, and collaborate. They become connected to each other, to the world and to a brighter future.”
⇒ ONE LAPTOP PER CHILD
THE ONES WHO DOUBT, THE ONES WHO WANT MORE

THESE TECHNOLOGIES REPLICATE AND EXTEND SOCIAL INEQUALITY!

“Will social networks help people climb the social ladder? (...) That was the original utopia, now it’s now a dream at best. But it endures: we believe that technology is going to build equality. In fact, the web reflects and magnifies the social dynamics that existed before its appearance. (...) There is no doubt that people can grow their networks more efficiently and easily with digital tools. But mainly their existing networks. A huge part of the population lacks the contacts and the network primers that allow access to it all.”

DANAH BOYD DANS TIC 2025, 2010

“Digital technologies need social vision!

“Our aim is an equalitarian information society with communities with cultural, social and political dimensions. If we want an information society which is really inclusive, digital technologies should be presented with values embedded in them, as social instruments able to improve democratic participation and improvers of people’s lives.”

CHARTE POUR L’INCLUSION NUMÉRIQUE SOCIALE, 2004


EUROPE ADVISORY GROUP, 2005

THE DIGITAL DIVIDE IS NOT TECHNICAL, IT’S SOCIAL!

“Access to ICT tools, networks and services, and even digital literacy, are merely preconditions for e-Inclusion. Beyond that, the real issue is whether ICT makes a difference to an individual’s ability to take an active part in the different spheres of society, i.e. work, social relationships, culture, political participation, etc. The issue is one of empowerment rather than access. (...) e-Inclusion is not a mechanical result of the growth of the information society. Depending on today’s decisions, our information society can either become more inclusive or more polarised.”

EUROPE ADVISORY GROUP, 2005

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DANAH BOYD DANS TIC 2025, 2010

“If technology cured social ills, then we’d hope that during the golden age of innovation in a technologically advanced country, there would be some dip in the poverty rate. Yet in the same four decades, the rate of poverty in the United States stagnated at around 13 percent, embarrassingly high for the world’s richest country.”

KENTARO TOYAMA, 2010

“The commons is a key piece of building a sustainable, healthy and fair society. Shared things means we use less resources overall; that we can slow down the frenzied work-watch-spend treadmill; and that we’re investing in community rather than clutter and consumer debt. (…) There’s a shift emerging which offers some real opportunities for building support for the commons. Increasingly people want access to stuff, not all the burden that comes with ownership. Instead of owning a car and dealing with all that comes with it, we get one just when we want through city car share programs.

Instead of hiring a plumber, we swap music lessons with one through skillsharing networks. Why buy something to own alone, when we can share it with others? From coast to coast, there’s a resurgence of sharing, so much that it even has a fancy new name: collaborative consumption.”

ANNIE LEONARD, 2012

“We believe that putting the transformative potential of technology into the hands of millions creates an unprecedented amount of opportunity and re-establishes the link between technology and society. By increasing society’s capacity for innovation as a whole, we foster general competitiveness in addition to developing people’s individual ability to tailor everyday life and their immediate environment.”

FING, 2010

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FING, 2010
AGEING GRACEFULLY, WITH THE HELP OF TECHNOLOGY

Technology allows senior citizens to live independently for longer, without feeling too dependent on relatives or becoming overly burdensome to health and social welfare systems. Technologies maintain social ties. They can palliate deficiencies as well as physical or cognitive disabilities. They can even slow ageing. With their help, we will all live longer and better lives.

“The AAL [Ambient Assisted Living] Joint Programme has the following specific aims: foster the emergence of innovative ICT-based products, services and systems for ageing well at home, in the community, and at work, thus improving the quality of life, autonomy, participation in social life, skills and employability of older people and reducing the costs of health and social care. This may be based, for example, on innovative utilisation of ICT, new methods of customer interaction or new types of value chains for independent living services.”

⇒ PROGRAMEMME EUROPÉEN «ASSISTANCE À L’AUTONOMIE À DOMICILE», 2008

“ICT provides a major opportunity to integrate people at risk of exclusion and empower individuals to fully participate in the knowledge society. ICT also offers important means to address the challenges associated to the ageing population such as the rise in number of people with high disability rates, fewer family carers, and a smaller productive workforce.”

⇒ EUROPEAN COMMISSION, 2007

“The pilot European Innovation Partnership on Active and Healthy Ageing will pursue a triple win for Europe:
1. enabling EU citizens to lead healthy, active and independent lives while ageing;
2. improving the sustainability and efficiency of social and health care systems;
3. boosting and improving the competitiveness of the markets for innovative products and services, thus creating new opportunities for businesses.”

⇒ COMMISSION EUROPÉENNE, 2012

“The new future of old age is about staying in society, staying in the workplace and staying very connected. And technology is going to be a very big part of that, because the new reality is, increasingly, a virtual reality. It provides a way to make new connections, new friends and new senses of purpose.”

⇒ JOSEPH F. COUGHLIN, AGELAB, 2009

“Our elderly relatives (...) can no longer be cared for exclusively by family or placed in nursing homes. (...) It is time to consider what gerontechnology can really offer, shed our irrational negative preconceptions, quit perceiving them as panacea, and merely accept them as a complementary solution that satisfies a real need. Organizing how we care for our elderly (...) will be complex, the solution will be composed using a palette of solutions: professional carers, visits by loved ones, video-surveillance...”

⇒ RICHARD SACCONE, PDG DE LA SOCIÉTÉ LINK CARE SERVICES, 2011
AGING IS NOT ONLY A HEALTH ISSUE!

“Conversations about elderly parents and technology usually center on safety, in particular on devices designed to alert a call center in case of trouble. But our parents are more than the sum of their maladies. Instead of keeping them safe, can’t some of these devices help keep them happy?”

KAREN STABINER, NY TIMES, 2010

THIS LEVEL OF SURVEILLANCE IS UNBEARABLE!

“Countless machines will monitor the health of a body, a mind, or a product(…). Mass-produced objects will each self-monitor its compliance to standards : self-surveillancers will make their appearance(…). Sub-cutaneous electronic chips will continuously record heart rate, blood pressure, cholesterol levels. Microprocessors attached to different organs will monitor their deviations from norms. Miniature cameras, electronic sensors, biomarkers, nanomotors, nanotubes (microscopic sensors that can be introduced into the pulmonary alveoli or the bloodstream) will allow each of us to measure continuously - or periodically - the parameters of our own bodies (…).”

JACQUES ATTALI, UNE BRÈVE HISTOIRE DE L’AVENIR, 2006

LETS JUST STOP AGEING...PROBLEM SOLVED!

“The elderly and their caregivers are wary of cameras ; they imagine that they are being observed. The perceived intrusiveness of this misunderstood technology prevents it from being accepted and integrated into current experimentation and inhibits its validation for use in private homes.”

CSTB, 2011

LET’S LEAVE THE PROPHESYING TO THE PROPHETS...

“Sustaining human physical and mental abilities throughout the life span would be facilitated by progress in neuroscience and cellular biology at the nanoscale. An active and dignified life could be possible far into a person’s second century, due to the convergence of technologies. Gene therapy to cure early aging syndromes may become common, giving vastly improved longevity and quality of life to millions of people.”

CONVERGING TECHNOLOGIES FOR IMPROVING HUMAN PERFORMANCE, 2002

“I and many other scientists now believe that in around 20 years we will have the means to reprogramme our bodies’ stone-age software so we can halt, then reverse, aging. Then nanotechnology will let us live forever. Ultimately, nanobots will replace blood cells and do their work thousands of times more effectively.”

RAY KURZWEIL, 2012

Let’s leave the prophesying to the prophets…”

ERIC LE BOURG DANS FUTUR 2.0, 2007

WHAT WE EXPECT FROM DIGITAL TECHNOLOGIES IN SERVICE OF THIS PROMISE

• Diagnosis and telemedicine technologies that enable us keep people at home for longer
• Surveillance and home care platforms, supported by sensors and other devices installed in patients’ homes (on or on patients themselves)
• Tools and interfaces that enable seniors to use digital technologies to communicate, learn, play...
• Platforms to support lifelong learning and activity
• Communication services and platforms to maintain social bonds
• The convergence of nanotechnologies-biotechnologies-computer technologies-cognitive sciences (“NBIC”), in order to slow or even prevent physical and mental ageing.
The internet augments and multiplies our interpersonal skills. It allows us to meet more people in more diverse ways, including those we would never encounter otherwise.

It abolishes – or minimises – the differences between personal communication and public expression, and between interpersonal relationship, community and collectivity.

A variety of contexts, occupying a broad spectrum that ranges from face to face to virtual worlds, allow us to express the different facets of our personalities in different ways.

By facilitating encounter and communication, the Internet generates more understanding, more mutual concern, and leads us toward a better world.

“The Internet brings about the revolution that the May ’68 movement aspired to. The need for expression has found its place, and we must apply ourselves to the task of preserving and developing it.”

FRANCK LOUVRIER, CONSEILLER POUR LA PRESSE DE NICOLAS SARKOZY, 2008

“In a few years, men will be able to communicate more effectively through a machine than face to face.”


“We want to keep the internet open for the protestor using social media to organize a march in Egypt; the college student emailing her family photos of her semester abroad; the lawyer in Vietnam blogging to expose corruption; the teenager in the United States who is bullied and finds words of support online; for the small business owner in Kenya using mobile banking to manage her profits; the philosopher in China reading academic journals for her dissertation; the scientist in Brazil sharing data in real time with colleagues overseas; and the billions and billions of interactions with the internet every single day as people communicate with loved ones, follow the news, do their jobs, and participate in the debates shaping their world.”

HILLARY CLINTON, 2011

“Personal computers have allowed [Internet] pioneers to change themselves, and rework social ties into new forms of social engagement. A loosely-tied digital conversation merges individuals’ relational space. It allows them to escape, even if it is within very limited margins, the assignments of identity and the tyranny of strong ties. (...) With social networks, networking itself, engaging others in conversation – earlier the prerogative of the ruling classes – has become possible for other sectors of the population. We are witnessing the democratization of extended forms of sociability.”

DOMINIQUE CARDON, LA DÉMOCRATIE INTERNET, 2010

“We are creating a world that all may enter without privilege or prejudice accorded by race, economic power, military force, or station of birth. We are creating a world where anyone, anywhere may express his or her beliefs, no matter how singular, without fear of being coerced into silence or conformity.”

DÉCLARATION D’INDÉPENDANCE DU CYBERESPACE, 1996
ONLINE EXCHANGE REPRODUCES SOCIAL INEQUALITY!

“For decades, we’ve assumed that inequality in relation to technology has everything to do with «access» and that if we fix the access problem, all will be fine. This is the grand narrative of concepts like the «digital divide». Yet, increasingly, we’re seeing people with similar levels of access engage in fundamentally different ways. And we’re seeing a social media landscape where participation «choice» leads to a digital reproduction of social divisions.”

— DANAH BOYD, 2009

“ITCs provide a remedy for vulnerable or lonely individuals, to whom they provide collective forms that are more fulfilling to their individuality.”

— SERGE PROULX IN L’ÉVOLUTION DES CULTURES NUMÉRIQUES, 2009

CONSTANT COMMUNICATION IS TYRANNY!

“People have really gotten comfortable not only sharing more information and different kinds, but more openly and with more people. That social norm is just something that has evolved over time.”

— MARK ZUCKERBERG, 2010

“The Internet is a fantastic space for communication that gives you a ton of opportunities to express yourself, participate, gather information, play... But just like in «real life>>, you have to respect certain rules and remain aware of the traps to avoid.”

— INTERNET ET MOL GUIDE POUR LES @DOS, 2007

“Solitude used to be good for self-reflection and self-reinvention. But now we are left thinking about who we are all the time, without ever really thinking about who we are. Facebook denies us a pleasure whose profundity we had underestimated: the chance to forget about ourselves for a while, the chance to disconnect.”

— STEPHEN MARCHÉ, 2012

THE INTERNET ISOLATES US AND IMPOVERISHES OUR RELATIONSHIPS!

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“Solitude used to be good for self-reflection and self-reinvention. But now we are left thinking about who we are all the time, without ever really thinking about who we are. Facebook denies us a pleasure whose profundity we had underestimated: the chance to forget about ourselves for a while, the chance to disconnect.”
Technology frees up our time. It saves time. It gives us more freedom to use time as we please.

In a world where the pace of life is moving ever faster, technology shortens our response time and increases our productivity.

It helps us to flexibly and more effectively organise our time.

It even allows us to better occupy our spare time: there is always something to do, see or read.

“Households are enjoying a newfound freedom: broadband is becoming widely available, and the pervasiveness of entirely "electronic" commerce joins that of telecommuting and a growing number of public services available online. Housing expenses can be reduced without sacrificing quality of life; we are witnessing a return to some rural areas similar to the return we have seen to certain city-centres.”

«COMMERCE ÉLECTRONIQUE : L’IRRÉSISTIBLE EXPANSION»,
RAPPORT DU SÉNAT, 2012

“The pace of modern life is fast—and only getting faster. In previous eras, we had fewer choices and more time in which to make them. Today, we need all the assistance we can get to make our choices easier and faster, and digital technology helps with that. (…) Our new technologies also save time by letting us get so much more done without leaving the house.”

SIMONE ZHANG, EURO
RSCG SHANGHAI

“Imagine a world in which time seems to vanish and space seems completely malleable. Where the gap between need or desire and fulfillment collapses to zero. Where distance equal.”


“After twenty centuries of mostly trying to [advance] the frontiers of space, now it is the frontiers of time that we seek to overcome. The man of the twenty-first century will do whatever he wants from wherever he chooses and at whatever time suits him best. The conquest of life will no longer be a question of reducing distances by accelerating time, but of erasing distances altogether.”

CHRISTIAN LOVITON, LA VIE À DISTANCE, 1989
…REALLY?

THE EXACT OPPOSITE IS HAPPENING!

“We were promised a new age of freedom through devices that would let us work more efficiently and at our convenience. Instead, digital technologies have us working everywhere, all the time. Rather than giving us a new time, our Faceooked, GPS-mapped, mobile-connected lives appear to be lashed ever more tightly to the rigid industrial time-logic of our grandparents world.

Where, then, is the fluid, flexible time these new silicon-enabled devices should have enabled?”

→ ADAM FRANK, 2011

WE NEED SOMETHING TO HELP US SURVIVE DIGITAL ACCELERATION!

“Chrometa gives you a gift like nothing else can. It gives you the gift of time! It is fully automatic, and you do not have to work at keeping records of how you account for your time for work.”

→ PUBLICITÉ

“What if we invent « contemplative » computing?

“Today, information technologies promise to make us smarter and more efficient, but all too often end up being distracting and demanding. Contemplative computing shows how we can use them to be more focused and creative.

Contemplative computing is something you do, not a service you use or a product you consume. It involves deepening your understanding of how minds and information technologies work together, becoming more mindful of how you interact with technologies, and discovering ways of using them better.”

→ ALEX PANG, 2011

WHAT WE GAIN ON ONE HAND, WE LOSE ON THE OTHER!

“We are quite familiar with the arguments of telecommuting advocates: more freedom for the employee in the choice of hours; less travel; more leisure time for family and local activities; less stress from hierarchical pressure; less energy consumption: telecommuting = sustainable development.

Less is known about the arguments made by opponents of telecommuting: working hours tend to spill over into private time; more stress due to a greater workload, because it is uncontrolled; less contacts with hierarchy and among colleagues; less participation in company life: telecommuting = first step towards dismissal or outsourcing…”

→ YVES LASFARGUE, 2009
Innovation is now everyone’s business, and the Internet is its prime mover. A new digital multitude challenges public and private organisations to find new ways to interact and work with it.

Standard innovation models were vertically-integrated, expert-driven. Now open, horizontal, contributive, peer-to-peer innovation processes disrupt established players, and inject new perspectives and hope into the quest for solutions to numerous urban, social, and environmental problems.

**OPEN INNOVATION**

“The Open Innovation paradigm can be understood as the antithesis of the traditional vertical integration model where internal research and development activities lead to internally developed products that are then distributed by the firm [...] Open Innovation is a paradigm that assumes that firms can and should use external ideas as well as internal ideas, and internal and external paths to market, as they look to advance their technology.”

⇒ **HENRY CHESBROUGH, OPEN BUSINESS MODELS, 2006**

**AN INNOVATION REVOLUTION... AND AN ORGANISATIONAL ONE**

“Constant innovation is now the norm for technology. Innovation is constant because information and communication technologies have become commonplace. (...) A key dimension to the digital revolution is the power that lies outside organisations: the powerful mass of educated, equipped, connected individuals we call the multitude. Because the multitude are outside organisations, their power eludes organisational grasp. Because organisations must learn to harness this power, they will have to learn new strategies prepare themselves for the radical changes these strategies will entail.”

⇒ **NICOLAS COLIN, HENRI VERDIER, L’ÂGE DE LA MULTITUDE, 2012**

“The Third Industrial Revolution [will] fundamentally change every aspect of the way we work and live. The conventional top-down organization of society that characterized much of the economic, social, and political life of the fossil fuel–based industrial revolutions is giving way to distributed and collaborative relationships in the emerging green industrial era. We are in the midst of a profound shift in the very way society is structured, away from hierarchical power and toward lateral power.”

⇒ **JEREMY RIFKIN, LA TROISIÈME réVOLUTION INDUSTRIELLE, 2011**
REAL INNOVATION COMES FROM INDIVIDUALS, NOT COMMITTEES!

“The wisdom of crowds works when the crowd is choosing the price of an ox, when there’s a single numeric average. But if it’s a design or something that matters, the decision is made by committee, and that’s crap. You want people and groups who are able to think thoughts before they share.”

JARON LANIER, 2010

IT DOESN’T WORK ON A GRAND SCALE!

“Crowd-sourcing can’t build bridges. This idea that you can bring in a nonprofit and build an efficient solution and then magically bring that to scale, that’s a pipe dream. We need the people to shake things up, but nothing can really be brought to scale without government.”

ATLANTIC CITIES, 2012

IT’S A NEW FORM OF EXPLOITATION!

“A great idea can come from anyone, anywhere - whether they’re a janitor by day and a designer by night or a stay-at-home mom who doesn’t have the time to run her own web studio. crowdSPRING makes geography and title irrelevant and, thereby, opens new markets for creativity all the world over.”

CROWDSPRING

“Crowdspring is 100% set up for the abuse of designers. Designers are exploited on sites like Crowdspring, often by clients hoping to get «more for less» while actually running a very high risk of obtaining inferior design work. Or worse.”

STEVE DOUGLAS SUR NO!SPEC, 2009

CREATE THE SOCIETY THAT GOES ALONG WITH IT

“Entering an era defined by an ethos of free association and horizontality doesn’t mean institutionality itself will disappear, but that it will undergo the deepest of transformations.

In the emerging institutional model of peer production, we can distinguish an interplay between three partners:

1. A community of contributors that create commons of knowledge, software or design;
2. An entrepreneurial coalition that creates market value on top of that commons; and
3. A set of for-benefit institutions which manage the «infrastructure of cooperation».”

MICHEL BAUWENS, 2012

“We need to move from Web 2.0 (exploiting the traces left by intelligent interactivity) to Web 3.0, where the cybercitizen takes control of what is done with her «pollination» activity on the Web. Public policies at all levels must establish that relational databases constitute a mutual knowledge commons that may be utilised commercially and non-commercially.”

YANN MOULIER-BOUTANG, 2010

DREAM, ILLUSION, OR NIGHTMARE?
The internet makes markets more fluid and more transparent. It facilitates the intersection and adjustment of supply and demand and makes customisation easier. It eliminates many transaction and coordination costs.

This transformation benefits both consumers and producers, especially smaller ones.

Consumers have more choices and more information to make these choices—including social and environmental criteria. Their relationship with merchants, products and producers has been enriched with multichannel access and new interfaces.

On the supply side, producers can gain access to markets (or even consumers) more easily, which promotes diversity and even fair trade.

“Long Tail business can treat consumers as individuals, offering mass customization as an alternative to mass-market fare. (...) And the cultural benefit of all of this is much more diversity, reversing the blanding effects of a century of distribution scarcity and ending the tyranny of the hit.”

⇒ CHRIS ANDERSON, LA LONGUE TRAÎNE, 2005

“We’ll find ourselves in a new world of low-friction, low-overhead capitalism, in which market information will be plentiful and transaction costs low. It will be a shopper’s heaven”

⇒ BILL GATES, THE ROAD AHEAD, 1995

“Long Tail business can treat consumers as individuals, offering mass customization as an alternative to mass-market fare. (...) And the cultural benefit of all of this is much more diversity, reversing the blanding effects of a century of distribution scarcity and ending the tyranny of the hit.”

⇒ CHRIS ANDERSON, LA LONGUE TRAÎNE, 2005

“Tomorrow’s consumers will see no dichotomy between buying online and buying in-store. They will take the best parts of e-commerce: search facilitation, time-saving expedience, 24/7 ordering capability, client reviews... and the best parts of local shopping, where the human aspect and the physical world remain paramount.”

⇒ CATHERINE BARBA, FEVAD, 2011
DOUBTS, ALTERNATIVE VIEWPOINTS

THE EFFECT THE INTERNET HAS HAD ON TRANSPARENCY IS NOT EXACTLY CLEAR!

“Many saw in the Internet of a great tool for finding information about, and comparing, products and prices. (...) However, what we see is not only significant price dispersion [online], regardless of the product under examination, but this trend has not diminished over time. What’s more, the average price of a product sold online is sometimes higher than in the physical world!”

PATRICK WAELEBROECK, IN LES DILEMMES DE L’ÉCONOMIE NUMÉRIQUE, 2009

CONSUMER BUYING POWER WILL BE CONQUERED, NEVER CEDED!

“The internet, smart phones and new data management methods have increased the information available to consumers. (...) These technological changes have also given businesses more information about their customers’ shopping habits. In some areas, businesses know more about customers’ spending habits than they do themselves. (...) Better Choices : Better Deals is about putting customers in charge : in charge of their own personal data which can be used to inform their purchasing decisions and lifestyle choices.”

UK CABINET OFFICE / BIS, « BETTER CHOICES, BETTER DEALS », 2011

E-COMMERCE IS NO MORE "SUSTAINABLE" THAN TRADITIONAL COMMERCE - MAYBE EVEN LESS SO!

“The macro-economic analysis could not identify a significant direct role of ICT for overall decoupling [between growth and energy consumption], and the technology is not expected to do so in the near future. (...) While information-based e-commerce bears the potential to decouple economic growth from resource consumption, significant savings on a macro scale are however not expected, for various reasons.”

DIGITAL EUROPE PROJECT, 2003

THE TRICK IS TO REDUCE CONSUMPTION, NOT ONLY IMPROVE IT!

“Networked markets are beginning to self-organize faster than the companies that have traditionally served them. Thanks to the web, markets are becoming better informed, smarter, and more demanding of qualities missing from most business organizations. (...) 1. Markets are conversations. 2. Markets consist of human beings, not demographic sectors. (...) 4. The Internet is enabling conversations among human beings that were simply not possible in the era of mass media.”

THE CLUETRAIN MANIFESTO, 1999

WHAT WE EXPECT FROM DIGITAL TECHNOLOGIES IN SERVICE OF THIS PROMISE

- Interconnect of all economic agents in real time, locally and globally, allowing them to dynamically adjust supply and demand, organise supply chains, assemble complex offers...
- Dematerialise certain products, transform others into services, mix services with products
- Track all transactions and interactions to permit continuous market analysis and prediction, and facilitate all kinds of market experiments
- Reduce the cost of access to consumers, and therefore create a market for « long tail » and niche producers, small-scale producers, etc.
- Facilitate access to data concerning markets, products and prices, enabling comparison and analysis based on economic and extra-economic criteria
- Multiply and enrich channels and interfaces : cross-channel and « customer experience »
«Digital Disruptions» Partners:

Fing's Main Partners: